



SODIUM HYPOCHLORITE (ALL GRADES)

SDS Revision Date (mm/dd/yyyy): 07/02/2018

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SECTION 1. IDENTIFICATION

Product identifier used on the label

: **SODIUM HYPOCHLORITE (ALL GRADES)**

Product Code(s) : None reported.

Recommended use of the chemical and restrictions on use

: Disinfectant, bleaching agent, source of available chlorine, deodorizer.
Restriction on use: None known

Chemical family : Inorganic base

Name, address, and telephone number of the manufacturer:

Refer to Supplier

Manufacturer's Telephone # :

Name, address, and telephone number of the supplier:

FSTI, Inc

6300 Bridgepoint Pkwy.
Suite 1-200
Austin, TX, USA
78730

Supplier's Telephone # : (888) 290-7548

24 Hr. Emergency Tel # : For Chemical Emergency, call SWS Environmental: (877) 742-4215

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear yellow-green liquid. Chlorine odor.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Hazard classification:

Corrosive to metals - Category 1

Skin corrosion/irritation - Category 1B

Eye damage/irritation - Category 1

Specific target organ toxicity, single exposure - Category 3

Label elements

Hazard pictogram(s)



Signal Word

DANGER!

Hazard statement(s)

May be corrosive to metals.
Causes severe skin burns and eye damage.
May cause respiratory irritation.



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Precautionary statement(s)

Keep only in original container.
Do not breathe fumes, mists or vapours.
Wash hands and face thoroughly after handling.
Wear protective gloves/clothing and eye/face protection.
Use only outdoors or in a well-ventilated area.
Do not eat, drink or smoke when using this product.

Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Store locked up.
Store in a well-ventilated place. Keep container tightly closed.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification: Ingestion may cause severe burns to the mucous membranes of the digestive tract. Prolonged skin contact may cause dermatitis (rash), characterized by red, dry, itching skin.

Environmental precautions: Avoid release to the environment. See ECOLOGICAL INFORMATION, Section 12.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Sodium hypochlorite	Hypochlorous acid, sodium salt Sodium oxychloride Bleach	7681-52-9	7.0 - 13.0
sodium hydroxide	Caustic soda	1310-73-2	0.1 - 1.0

The exact concentrations of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Do not induce vomiting. Never give anything by mouth to an unconscious person. If conscious, give the victim plenty of water to drink. Obtain medical attention immediately.
- Inhalation* : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Obtain medical attention immediately.
- Skin contact* : Immediately remove contaminated clothing and shoes. Flush affected skin with gently flowing lukewarm water for at least 20 minutes. Launder contaminated clothing before reuse, or discard. Obtain medical attention immediately.
- Eye contact* : Immediately flush eyes thoroughly with running water for at least 20 to 30 minutes. Obtain medical attention immediately.



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Most important symptoms and effects, both acute and delayed

- : Causes skin burns. Symptoms may include redness, blistering, pain and swelling. Causes serious eye damage. Symptoms may include severe pain, tearing, redness, swelling and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Symptoms may include coughing, choking and wheezing. Could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed. Ingestion can cause irritation and corrosive action in the mouth, stomach and digestive tract.

Indication of any immediate medical attention and special treatment needed

- : Immediate medical attention is required. Causes chemical burns. Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not flammable under normal conditions of use. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Toxic fumes may be released during a fire.

Flammability classification (OSHA 29 CFR 1910.106)

- : Non-flammable.

Hazardous combustion products

- : Chlorine; Hydrogen chloride gas; Oxygen; Sodium oxides; Disodium oxide; irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions

- : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Methods and material for containment and cleaning up

- : Ventilate area of release. Remove all sources of ignition. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required.



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Special spill response procedures

- : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
- US CERCLA Reportable quantity (RQ):
 - sodium hydroxide (1000 lbs / 454 kg)
 - sodium hypochlorite (100 lbs / 45.4 kg)

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Use in a well-ventilated area. Wear suitable protective equipment during handling. Do not breathe mist or vapor. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flames. No sparking tools should be used. Avoid contact with incompatible materials. Do not swallow. Keep only in original container. Wash thoroughly after handling. When diluting, always add the product to water. Never add water to the product.

Conditions for safe storage

- : Store in a cool, dry, well-ventilated area. Do not store near acids or other incompatible materials. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area. Store in corrosion-resistant containers.

Incompatible materials

- : Strong oxidizing agents; Acids; Amines; Metals; Reducing agents; Methanol; Water.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
	Sodium hypochlorite	N/Av	2 mg/m ³ (AIHA WEEL)	N/Av
sodium hydroxide	2 mg/m ³ (Ceiling)	N/Av	2 mg/m ³	N/Av

Exposure controls

Ventilation and engineering measures

- : Use in a well-ventilated area. Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

- : Respiratory protection is required if the concentrations exceed the TLV. NIOSH-approved respirators are recommended. Advice should be sought from respiratory protection specialists.

Skin protection

- : Wear protective gloves/clothing. Advice should be sought from glove suppliers.

Eye / face protection

- : Wear eye/face protection. Chemical splash goggles must be worn when handling this material. A full face shield may also be necessary.

Other protective equipment

- : Wear protective clothing to cover as much of the exposed skin area as possible. An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations

- : Do not breathe mist or vapor. Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.



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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear, yellow-green liquid.
Odour : Chlorine odour.
Odour threshold : No information available.
pH : <12
Melting/Freezing point : (approximately) 5°F (-15°C)
Initial boiling point and boiling range
: No information available.
Flash point : Non-flammable.
Flashpoint (Method) : No information available.
Evaporation rate (BuAe = 1) : No information available.
Flammability (solid, gas) : Not applicable.
Lower flammable limit (% by vol.)
: No information available.
Upper flammable limit (% by vol.)
: No information available.
Oxidizing properties : None known.
Explosive properties : Not explosive
Vapour pressure : 12.1 @ 20°C
Vapour density : No information available.
Relative density / Specific gravity
: 1.17
Solubility in water : Completely soluble.
Other solubility(ies) : No information available.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution
: No information available.
Auto-ignition temperature : No information available.
Decomposition temperature : No information available.
Viscosity : No information available.
Volatiles (% by weight) : No information available.
Volatile organic Compounds (VOC's)
: No information available.
Absolute pressure of container
: N/Ap
Flame projection length : N/Ap
Other physical/chemical comments
: No additional information.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive. Contact with most metals will generate flammable hydrogen gas.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions
: Hazardous polymerization does not occur.
Conditions to avoid : Avoid contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials : See Section 7 (Handling and Storage) for further details.
Hazardous decomposition products
: Solutions slowly decompose with air to form chlorine gas.



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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

- Routes of entry inhalation : YES
- Routes of entry skin & eye : YES
- Routes of entry Ingestion : YES
- Routes of exposure skin absorption : NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

- : May cause respiratory irritation. Symptoms may include coughing, choking and wheezing. Could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.

Sign and symptoms ingestion

- : Severely irritating or corrosive. Symptoms may include severe abdominal pain, vomiting, burns and bleeding.

Sign and symptoms skin

- : Causes skin burns. Symptoms may include redness, blistering, pain and swelling. May be harmful if absorbed through the skin.

Sign and symptoms eyes

- : Causes serious eye damage. Symptoms may include severe pain, blurred vision, redness and corrosive damage. Permanent eye damage including blindness could result.

Potential Chronic Health Effects

- : Prolonged skin contact may cause dermatitis (rash), characterized by red, dry, itching skin. Prolonged exposure may cause eye damage.

Mutagenicity

- : Not expected to be mutagenic in humans.

Carcinogenicity

- : Not known to be carcinogenic.

Reproductive effects & Teratogenicity

- : Not expected to have other reproductive effects.

Sensitization to material

- : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

- : This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:

Specific target organ toxicity, single exposure - Category 3

Not classified as a specific target organ toxicity - repeated exposure.

Medical conditions aggravated by overexposure

- : Pre-existing skin, eye and respiratory disorders.

Synergistic materials

- : None known or reported by the manufacturer.

Toxicological data

- : See below for individual ingredient acute toxicity data.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Sodium hypochlorite	> 5.25 mg/L	5230 mg/kg (12.5%)	> 10 000 mg/kg
sodium hydroxide	N/Av	N/Av	N/Av



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Other important toxicological hazards

: See Section 3 for additional information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Very toxic to aquatic life. Do not release, unmonitored, into the environment. See below for individual ingredient ecotoxicity.

Ecotoxicity data:

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Sodium hypochlorite	7681-52-9	0.58 mg/L (Bluegill sunfish) (14.6%)	N/Av	1
sodium hydroxide	1310-73-2	125 mg/L (Mosquito fish)	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Sodium hypochlorite	7681-52-9	0.141 mg/L (Daphnia magna)	N/Av	1
sodium hydroxide	1310-73-2	40.4 mg/L (Daphnia magna)	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Sodium hypochlorite	7681-52-9	0.036 mg/L/72hr (Green algae) (13.7%)	0.005 mg/L/72hr (13.7%)	10
sodium hydroxide	1310-73-2	N/Av	N/Av	None.

Persistence and degradability

: No data is available on the product itself.

Bioaccumulation potential

: No data is available on the product itself.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
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Mobility in soil : No data is available on the product itself.

Other Adverse Environmental effects

: No additional information.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

Methods of Disposal

: Dispose in accordance with all applicable federal, state, provincial and local regulations.






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RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	UN1791	HYPOCHLORITE SOLUTION	8	III	 
49CFR/DOT Additional information	May be shipped as a Limited Quantity when transported in containers no larger than 5 L (1.3 gallons); in packages not exceeding 30 kg (66 pounds) gross mass.				
TDG	UN1791	HYPOCHLORITE SOLUTION	8	III	
TDG Additional information	May be shipped as a Limited Quantity when transported in containers no larger than 5 L (1.3 gallons); in packages not exceeding 30 kg (66 pounds) gross mass. This material may be shipped as an exempted marine pollutant in accordance with TDG Section 1.45.1 and Special Provision 99.				

Special precautions for user : Keep away from heat, sparks and open flame. - No smoking.

Environmental hazards : This product meets the criteria for an environmentally hazardous material according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Sodium hypochlorite	7681-52-9	Yes	100 lb/ 45.4 kg	None.	No	N/Ap
sodium hydroxide	1310-73-2	Yes	1000 lb/ 454 kg	N/Av	No	NS

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Physical hazards: Corrosive to metals . Health hazards:Skin corrosion, Eye Damage,Specific target organ toxicity, single exposure .

Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:



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<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Sodium hypochlorite	7681-52-9	No	N/Ap	Yes	Yes	Yes	Yes	Yes	No
sodium hydroxide	1310-73-2	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Sodium hypochlorite	7681-52-9	231-668-3	Present	Present	(1)-237	KE-31506	Present	HSR003698
sodium hydroxide	1310-73-2	215-185-5	Present	Present	(2)-1972; (1)-410	KE-31487	Present	HSR001547

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- AICS: Australian Inventory of Chemical Substances
- AIHA: American Industrial Hygiene Association
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- DOT: Department of Transportation
- EINECS: European Inventory of Existing Commercial chemical Substances
- ENCS: Existing and New Chemical Substances
- EPA: Environmental Protection Agency
- EST: Eastern Standard Time
- HMIS: Hazardous Materials Identification System
- HSDB: Hazardous Substances Data Bank
- IARC: International Agency for Research on Cancer
- IECSC: Inventory of Existing Chemical Substances
- Inh: Inhalation
- IOC: Inventory of Chemicals
- KECI: Korean Existing Chemicals Inventory
- KECL: Korean Existing Chemicals List
- LC: Lethal Concentration
- LD: Lethal Dose
- N/Ap: Not Applicable
- N/Av: Not Available
- NIOSH: National Institute of Occupational Safety and Health
- OSHA: Occupational Safety and Health Administration
- PEL: Permissible exposure limit
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- RCRA: Resource Conservation and Recovery Act
- RTECS: Registry of Toxic Effects of Chemical Substances



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SARA: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit
 TLV: Threshold Limit Values
 TWA: Time Weighted Average
 TSCA: Toxic Substance Control Act
 WEEL: Workplace Environmental Exposure Level
 WHMIS: Workplace Hazardous Materials Identification System

- References** :
1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2016
 2. International Agency for Research on Cancer Monographs, searched 2017
 3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2017(Chempendium, HSDB and RTECs).
 4. Material Safety Data Sheets from manufacturer.
 5. US EPA Title III List of Lists - 2017 version.
 6. California Proposition 65 List - 2017 version.
 7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal,2017.

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Revision Information

: (M)SDS sections updated :1. IDENTIFICATION,4. FIRST AID MEASURES, 10. STABILITY AND REACTIVITY, 11. TOXICOLOGICAL INFORMATION, 12. ECOLOGICAL INFORMATION,14. TRANSPORT INFORMATION, 15. REGULATORY INFORMATION :

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p>Prepared for: FSTI, Inc 6300 Bridgepoint Pkwy Suite 1-200 Austin, TX, USA 78730 Tel. (888) 290-7548 Please direct all enquiries to FSTI.</p>	
<p>Prepared by: ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	

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