Safety Data Sheet

Section 01 – Product and Company Identification

Product Identifier	Sodium Hypochlorite (3-20%)
Other Means of Identification	Hypochlor-12, Bleach, Clorox, Hypochlorous acid-sodium salt, Javel water, Liquid Bleach, NaOCl, Soda Bleach, Sodium Chloride Oxide, Sodium Oxychloride, Javex.
Product Use and Restrictions on Use	Disinfectant, bleaching agent, source of available chlorine, deodorizer.
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7
Prepared By	ClearTech Industries Inc. Technical Writer Phone: 1 (800) 387-7503
24-Hour Emergency Phone	Phone: 1 (306) 664 – 2522

Section 02 - Hazard Identification

GHS-Classification

Skin Corrosion/Irritation	Category 1B
Serious Eye Damage/Irritation	Category 1

Physical Hazards

Corrosive to Metals	Category 1

Danger

Hazard Statements
H314 – Causes severe skin burns and eye damage.
H290 – May be corrosive to metals.
EUH 031 – Contact with acids liberates toxic gas.

Pictograms

Precautionary Statements
P234 – Keep only in original container.
P405 – Store locked up.
P260 – Do not breathe mist, vapours or spray.
P280 – Wear protective gloves, protective clothing, eye protection, and face protection.
P301 +P330 + P331 – IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin.

P363 – Wash contaminated clothing before reuse.
P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310 – Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P390 – Absorb spillage to prevent material damage.
P501 – Dispose of contents/container in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 03 - Composition / Information on Ingredients

Chemical Name	CAS Number	Weight %	Unique Identifiers
Sodium Hypochlorite	7681-52-9	3-20%	None
Water	7732-18-5	80-97%	

Section 04 - First Aid Measures

Inhalation

Can release corrosive chlorine gas. Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure. Seek immediate medical attention.

Skin Contact / Absorption

Immediately flush with lukewarm, gently flowing water for at least 30 minutes. Under running water, remove contaminated clothing, shoes and leather goods. Seek immediate medical attention. Completely decontaminate clothing, shoes and leather goods before reuse, or discard.

Eye Contact

Immediately flush eye(s) with lukewarm, gently flowing water for 30 minutes while forcibly holding the eyelids open to ensure complete irrigation of the eye tissue. If a contact lens is present, remove only if easy to do so. Seek immediate medical attention.

Ingestion

NEVER give anything by mouth if victim is rapidly losing consciousness, is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 240 to 300 mL (8 to 10 oz.) of water to dilute material in stomach. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Rinse mouth and repeat administration of water. Quickly transport victim to an emergency care facility.

Additional Information

Not Available

Section 05 - Fire Fighting Measures

Suitable Extinguishing Media

Sodium hypochlorite solutions do not burn. Extinguish fire using extinguishing agents suitable for the surrounding fire and not contraindicated for use with sodium hypochlorite. Cool exposed containers with water.

Unsuitable Extinguishing Media

DO NOT use dry chemical fire extinguishing agents containing ammonium compounds (such as some A:B:C agents), since an explosive compound can be formed.

Specific Hazards Arising From the Chemical

Sodium hypochlorite decomposes when heated, giving off corrosive chlorine and hydrogen chloride. Solutions decompose when exposed to sunlight, giving off oxygen gas. However, the amount of oxygen produced is not sufficient to cause combustion. Explosive decomposition may occur under fire conditions and closed containers may rupture violently due to a rapid decomposition, if exposed to fire or excessive heat for a sufficient period of time.

Special Protective Equipment for Fire-Fighters

Wear NIOSH-approved self-contained breathing apparatus and protective clothing. The decomposition products of sodium hypochlorite, such as chlorine and hydrogen chloride are extremely hazardous to health. Do not enter without wearing specialized protective equipment suitable for the situation. Firefighter's normal protective equipment (Bunker Gear) will not provide adequate protection.

Further Information	Not Available

Section 06 - Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures	Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so.
Environmental Precautions	Prevent material from entering sewers or confined spaces. Notify local health and wildlife officials. Notify operators of nearby water intakes.
Methods and Materials for Containment and Cleaning Up	SMALL SPILLS: Clean up spill with non-reactive absorbent and place in suitable, covered, labelled containers. Flush area with water. Contaminated absorbent material may pose the same hazards as the spilled product. Small spills of sodium hypochlorite solutions can be broken down by covering it with a reducing agent such as sodium thiosulfate, sodium metabisulfite, or a ferrous salt. With the sulfite or ferrous salt, add some dilute (2 M) sulfuric acid to speed up the reaction. Transfer the mixture into large containers of water and neutralize with soda ash (sodium carbonate). LARGE SPILLS: Contact fire and emergency services and supplier for advice.

Section 07 - Handling and Storage

Precautions for Safe Handling	This material is a CORROSIVE liquid. Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Avoid generating mists. Prevent the release of mists into the workplace air. Inspect containers for damage or leaks before handling. Label containers. Never add water to a corrosive. Always add corrosives to water. When mixing with water, stir small amounts in slowly. Use cold water to prevent excessive heat generation. Never return contaminated material to its original container. Have suitable emergency equipment for fires, spills and leaks readily available.
Conditions for Safe Storage	Store in a cool, dry, well-ventilated area, out of direct sunlight and away from heat sources. Strong solutions (greater than 10% available chlorine) may slowly give off chlorine during storage, especially when warm (above 18°C). Vent caps may be required to prevent a build-up of pressure that could cause containers to burst. Always store in original labelled container. Keep containers tightly closed when not in use and when empty. Empty containers may contain hazardous residues. Protect label and keep it visible.
Incompatibilities	Primary amines, aromatic amines, ammonium salts, phenylacetonitril, ammonia, urea, phenylacetonitrile, acids, metals, reducing agents, ethyleneimine, methanol, formic acid, furfuraldehyde, ethandiol, sodium ethylenedioaminetetracetate solution, sodium hydroxide solution.

Section 08 - Exposure Controls and Personal Protection

Exposure Limit(s)

Component	Regulation	Type of Listing	Value
Sodium hypochlorite	AIHA	WEEL-STEL	2mg/m^3 (15 min)
Chlorine	ACGIH	TLV-TWA	0.5 ppm

Engineering Control(s)

Ventilation Requirements	Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions must be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other	Emergency shower and eyewash must be available and tested in accordance with regulations and be in close proximity.

Protective Equipment

Eyes/Face	Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should never be worn; they may contribute to severe eye injury.
Hand Protection	Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.
Skin and Body Protection	Body suite, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse. Guidelines for sodium hypochlorite, less than 30%: RECOMMENDED (resistance to breakthrough longer than 8 hours): Butyl rubber, Natural rubber, Neoprene rubber, Nitrile rubber, Polyethylene, Polyvinyl chloride, Viton(TM), Silver Shield/4H(TM) (polyethylene/ethylene vinyl alcohol), Tychem(TM) SL (Saranex(TM)). There is evidence that this material can cause serious skin injury (e.g. corrosion or absorption hazard). Recommendations are NOT valid for very thin natural rubber, neoprene, nitrile and PVC gloves (0.3 mm or less). Resistance of specific materials can vary from product to product. Breakthrough times are obtained under conditions of continuous contact, generally at room temperature. Evaluate resistance under conditions of use and maintain clothing carefully. Impervious boots of chemically resistant material should be worn at all times. No special footwear is required other than what is mandated at place of work.
Respiratory Protection	No specific guidelines are available. Contact chemical manufacturer/supplier for advice. Respiratory protection guidelines for chlorine gas are available. NIOSH RECOMMENDATIONS FOR CHLORINE CONCENTRATIONS IN AIR: Up to 5 ppm: (APF = 10) Chemical cartridge respirator*; SAR*. Up to 10 ppm: (APF = 25) SAR operated in a continuous-flow mode;* Powered, air-purifying respirator with cartridge(s)*. (APF = 50) Chemical cartridge respirator with a full facepiece and cartridge(s); Air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister; SCBA with a full facepiece; Full facepiece SAR. A NIOSH-approved respirator suitable for chlorine is recommended. Where a higher level of protection is required, use a self-contained breathing apparatus.
Thermal Hazards	Not Available

Section 09 - Physical and Chemical Properties

Appearance

Physical State	Liquid
Colour	Clear, greenish-yellow solution.
Odour	Strong chlorine odour.
Odour Threshold	Not Available

Property

pH	11-13

Melting Point/Freezing Point	-6°C (5% solution)
Initial Boiling Point and Boiling Range	Slowly decomposes above 40°C
Flash Point	Not Applicable
Evaporation Rate	Not Available; probably very low
Flammability	Non-Flammable
Upper Flammable Limit	Not Applicable
Lower Flammable Limit	Not Applicable
Vapour Pressure (mm Hg, 20°C)	Does not form a vapour
Vapour Density (Air=1)	Not Available
Relative Density	Not Available
Solubility(ies)	Completely soluble in water
Partition Coefficient: n-octanol/water	Log P_{OW} = -3.42 (estimated)
Auto-ignition Temperature	Not Applicable
Decomposition Temperature	Slowly decomposes above 40°C
Viscosity	Not Available
Explosive Properties	Pressure buildup in containers could result in an explosion when heated or in contact with acidic fumes. Vigorous reaction with oxidizable organic materials may result in a fire.
Specific Gravity (Water=1)	1.1-1.2
% Volatiles by Volume	Not Available
Formula	NaOCl
Molecular Weight	74.44 g/mol

Section 10 - Stability and Reactivity

Reactivity	Sodium hypochlorite solution gives off oxygen when heated or when exposed to sunlight. However, the amount is small and will not cause or contribute to combustion. The solutions are, therefore, not considered to be oxidizing agents.
Stability	Sodium hypochlorite solutions decompose slowly at normal temperatures releasing low concentrations of corrosive chlorine gas.
Possibility of Hazardous Reactions	Hazardous polymerization will not occur.
Conditions to Avoid	Heat, sunlight, acidic conditions, the presence of metals and other impurities.
Incompatible Materials	Primary amines, aromatic amines, ammonium salts, phenylacetonitril, ammonia, urea, phenylacetonitrile, acids, metals, reducing agents, ethyleneimine, methanol, formic acid, furfuraldehyde, ethandiol, sodium ethylenedioaminetetracetate solution, sodium hydroxide solution.

Hazardous Decomposition Products	Chlorine, sodium chlorate.

Section 11 - Toxicological Information

Acute Toxicity

Component	Oral LD_{50}	Dermal LD_{50}	Inhalation LC_{50}
Sodium Hypochlorite (20%)	44.5 g/kg (rat)	> 50 g/kg (rabbit)	> 26.25 g/m^3 (rat, 4hr)

Chronic Toxicity – Carcinogenicity

Component	IARC
Sodium Hypochlorite	Group 3: Not classifiable as to it's carcinogenicity to humans. [hypochlorite salts]

Skin Corrosion/Irritation	Very dilute solutions have caused negligible irritation, while more concentrated solutions have caused corrosive injury to skin and eyes.
Ingestion	Burning of the mouth and throat, abdominal cramps, nausea, vomiting, diarrhea, shock. May lead to convulsions, coma, and even death.
Inhalation	Irritant of the nose and throat, causing coughing, difficulty breathing, and pulmonary edema.
Serious Eye Damage/Irritation	Very dilute solutions have caused no irritation. More concentrated solutions have caused corrosive injury, which did not heal within 21 days.
Respiratory or Skin Sensitization	Negative results (0/20 guinea pigs sensitized) have been obtained for 8% sodium hypochlorite solution in a skin sensitization test. Insufficient details are available to evaluate a report of a positive result (positive reactions in 2/10 animals) obtained using 6% sodium hypochlorite (pH 11.2) with the guinea pig ear swelling test for non-immunological contact urticaria.
Germ Cell Mutagenicity	The available information does not suggest that sodium hypochlorite is mutagenic.
Reproductive Toxicity	There is insufficient information available to draw conclusions.
STOT-Single Exposure	May cause respiratory irritation.
STOT-Repeated Exposure	Not Available
Aspiration Hazard	Prolonged or repeated overexposure causes lung damage.
Synergistic Materials	Not Available

Section 12 - Ecological Information

Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
Sodium Hypochlorite	EC_{50}(Red algae, 96hr): 46mg/L	LC_{50}(Salmo gairdneri, 48hr): 0.07mg/L	LC_{50}(Daphnia magna, 48hr): 0.032mg/L

Biodegradability	Not Available
Bioaccumulation	No evidence to support any rating.
Mobility	Not Available
Other Adverse Effects	Not Available

Section 13 - Disposal Considerations

Waste From Residues/Unused Products	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 - Transport Information

NOTE: Any product strength below 7% is not regulated by TDG.

UN Number	UN 1791
UN Proper Shipping Name	HYPOCHLORITE SOLUTION
Transport Hazard Class(es)	8
Packaging Group	III
Environmental Hazards	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.
Special Precautions	Not Available
Transport in Bulk	Not Available

Additional Information

Packing Group	Limited Quantity Index
II	1 L
III	5 L

TDG

Other

Secure containers (full and/or empty) with suitable hold down devises during shipment and ensure all caps, valves, or closures are secured in the closed position.

TDG PRODUCT CLASSIFICATION: This product has been classified on the preparation date specified at section 14 of this MSDS / SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and/or published test data regarding the classification of this product are listed in the references at section 16 of this MSDS / SDS.

Section 15 - Regulatory Information

NOTE: THE PRODUCT LISTED ON THIS SDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS SDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

NSF Certification.....Product is certified under NSF/ANSI Standard 60 for disinfection and oxidation at a maximum dosage for the following:

Sodium hypochlorite 5%: 248mg/L	Sodium hypochlorite 11%: 112mg/L	Sodium hypochlorite 17%: 72mg/L
Sodium hypochlorite 6%: 206mg/L	Sodium hypochlorite 12%: 103mg/L	Sodium hypochlorite 18%: 68mg/L
Sodium hypochlorite 7%: 177mg/L	Sodium hypochlorite 13%: 95mg/L	Sodium hypochlorite 19%: 65mg/L
Sodium hypochlorite 8%: 155mg/L	Sodium hypochlorite 14%: 88mg/L	Sodium hypochlorite 20%: 62mg/L
Sodium hypochlorite 9%: 137mg/L	Sodium hypochlorite 15%: 82mg/L	
Sodium hypochlorite 10%: 124mg/L	Sodium hypochlorite 16%: 77mg/L	

Sanitizer Use: to obtain 10 liters of a 200 mg/L solution as available chlorine, use 16.7 mL of Hypochlor-12 for each 10 liters of clean, potable water.

NSF product use restrictions based on requirements obtained from the NSF website for current requirements.

Section 16 - Other Information

Preparation Date July 29, 2015

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

Attention: Receiver of the chemical goods / SDS coordinator

As part of our commitment to the Canadian Association of Chemical Distributors (CACD) Responsible Distribution® initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service center.

References:

1) CHEMINFO
2) TOXNET
3) eChemPortal
4) ECHA
5) Transportation of Dangerous Goods Canada
6) HSDB
7) PAN

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