Section 01 - Chemical And Product And Company Information

Product Identifier ……………………… Sodium Hypochlorite (5-20%)

Product Use …………………………... Disinfectant, bleaching agent, source of available chlorine, deodorizer.

Supplier Name…………………….. ClearTech Industries Inc.
2302 Hanselman Avenue
Saskatoon, SK. Canada
S7L 5Z3

Prepared By…………………………. ClearTech Industries Inc. Technical Department
Phone: (306)664-2522

Preparation Date……………………March, 30, 2014

24-Hour Emergency Phone……….. 306-664-2522

Section 02 - Composition / Information on Ingredients

Hazardous Ingredients………………Sodium Hypochlorite 4.9-16.5%

CAS Number………………………Sodium Hypochlorite 7681-52-9

Synonym (s)…………………………Industrial bleach, hypo, bleach, Javel water, household bleach

Section 03 - Hazard Identification

Inhalation………………………….. Irritant of the nose and throat, causing coughing, difficulty breathing, and pulmonary edema.
Skin Contact / Absorption

Causes severe skin irritation with blistering and ulceration.

Eye Contact

Causes severe irritation of the mucous membranes of the eyes. May cause severe eye damage.

Ingestion

Burning of the mouth and throat, abdominal cramps, nausea, vomiting, diarrhea, shock. May lead to convulsions, coma, and even death.

Exposure Limits

None established.

ACGIH/TLV-TWA= 1ppm (chlorine)

Section 04 - First Aid Measures

Inhalation

Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention.

Skin Contact / Absorption

Remove contaminated clothing. Wash affected area with soap and water. Seek medical attention if irritation occurs or persists.

Eye Contact

Flush immediately with water for at least 20 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention.

Ingestion

Do not induce vomiting. If vomiting occurs, lean victim forward to prevent breathing in vomitus. Give large amounts of water. Do not give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention.

Additional Information

Not available

Section 05 - Fire Fighting

Conditions of Flammability

Non-flammable

Means of Extinction

Product does not burn. Use appropriate extinguishing media for material that is supplying the fuel to the fire.

Flash Point

Not applicable

Auto-ignition Temperature

Not applicable

Upper Flammable Limit

Not applicable
Lower Flammable Limit: Not applicable

Hazardous Combustible Products: Decomposition may produce chlorine gas and/or hydrogen chloride gas.

Special Fire Fighting Procedures: Wear NIOSH-approved self-contained breathing apparatus and protective clothing.

Explosion Hazards: 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.

Section 06 - Accidental Release Measures

Leak / Spill: Wear appropriate personal protective equipment. Ventilate area. Stop or reduce leak if safe to do so. Prevent material from entering sewers. Flush with water to remove any residue.

Deactivating Materials: Neutralize first with sodium sulphite, sodium metabisulphite or other dechlorination agent for no chlorine residual, then with hydrochloric acid until the pH is 7.

Section 07 - Handling and Storage

Handling Procedures: 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.

Storage Requirements: Store in a cool, dry, well-ventilated place. Keep container tightly closed, and away from incompatible materials. Venting of containers is advisable.

Section 08 - Personal Protection and Exposure Controls

Protective Equipment

Eyes: Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.

Respiratory: A NIOSH-approved respirator suitable for chlorine is recommended. Where a higher level of protection is required, use a self-contained breathing apparatus.

Gloves: Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.
Clothing

Body suits, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Footwear

Impervious boots of chemically resistant material should be worn at all times.

Engineering Controls

Ventilation Requirements

Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other

Emergency shower and eyewash should be in close proximity.

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**Section 09 - Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odor and Appearance</td>
<td>Strong chlorine odour. Clear, greenish-yellow solution.</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific Gravity (Water=1)</td>
<td>1.17 at 20°C (12% trade)</td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg, 20°C)</td>
<td>12.1 mm Hg at 20°C (12.5 wt %)</td>
</tr>
<tr>
<td>Vapor Density (Air=1)</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Slowly decomposes above 40°C</td>
</tr>
<tr>
<td>Freez e/Melting Point</td>
<td>~ -15°C (12% trade)</td>
</tr>
<tr>
<td>pH</td>
<td>&lt; 12</td>
</tr>
<tr>
<td>Water/Oil Distribution Coefficient</td>
<td>Not available</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>Not available</td>
</tr>
<tr>
<td>% Volatiles by Volume</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Complete</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>NaOCl</td>
</tr>
</tbody>
</table>
**Section 10 - Stability and Reactivity**

**Stability**
Unstable at temperatures above 40°C, in sunlight, and in contact with acid.

**Incompatibility**
Incompatible with strong acids, ammonia, oxidizable materials, nickel, copper, tin, manganese, and iron.

**Hazardous Products of Decomposition**
Chlorine (by reaction with acids), oxygen (by reaction with nickel, copper, tin, manganese, iron), sodium chloride, sodium chlorate, with increased temperature.

**Polymerization**
Will not occur

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**Section 11 - Toxicological Information**

**Irritancy**
Strong irritant

**Sensitization**
Not available

**Chronic/Acute Effects**
If over-exposed to the solution, there will be constant irritation of the eyes, nose, and throat.

**Synergistic Materials**
Not available

**Animal Toxicity Data**
LD$_{50}$(oral,rat) = 8910mg/kg (100% sodium hypochlorite)

**Carcinogenicity**
Not considered to be carcinogenic (IARC and ACGIH).

**Reproductive Toxicity**
Not available

**Teratogenicity**
Not available

**Mutagenicity**
Not available

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**Section 12 - Ecological Information**

**Fish Toxicity**
Not available

**Biodegradability**
Not available
Environmental Effects: Not available

Section 13 - Disposal Consideration

Waste Disposal: Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 - Transportation Information

TDG Classification

Class: 8
Group: III
PIN Number: UN 1791

Other: Secure containers (full and/or empty) with suitable hold down devises during shipment.

Section 15 - Regulatory Information

WHMIS Classification: E

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

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

- Sodium hypochlorite 5%: 200mg/L
- Sodium hypochlorite 6%: 175mg/L
- Sodium hypochlorite 7%: 161mg/L
- Sodium hypochlorite 8%: 146mg/L
- Sodium hypochlorite 9%: 131mg/L
- Sodium hypochlorite 10%: 116mg/L
- Sodium hypochlorite 11%: 101mg/L
- Sodium hypochlorite 12%: 87mg/L
- Sodium hypochlorite 13%: 82mg/L
- Sodium hypochlorite 14%: 76mg/L
- Sodium hypochlorite 15%: 70mg/L
- Sodium hypochlorite 16%: 66mg/L
- Sodium hypochlorite 17%: 62mg/L
- Sodium hypochlorite 18%: 58mg/L
- Sodium hypochlorite 19%: 54mg/L
- Sodium hypochlorite 20%: 50mg/L
**Section 16 - Other Information**

**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 / MSDS coordinator**

As part of our commitment to the Canadian Association of Chemical Distributors (CADC) Responsible Distribution® initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Material 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 or technical service department.

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**ClearTech Industries Inc. - Locations**

Corporate Head Office: 2302 Hanselman Avenue, Saskatoon, SK, S7L 5Z3  
Phone: 306-664-2522  
Fax: 306-665-6216

www.ClearTech.ca

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Postal Code</th>
<th>Phone Number</th>
<th>Fax Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richmond, B.C.</td>
<td>12431 Horseshoe Way</td>
<td>V7A 4X6</td>
<td>604-272-4000</td>
<td>604-272-4596</td>
</tr>
<tr>
<td>Calgary, AB.</td>
<td>5516E - 40th St. S.E.</td>
<td>T2C 2A1</td>
<td>403-279-1096</td>
<td>403-236-0989</td>
</tr>
<tr>
<td>Edmonton, AB.</td>
<td>11750 - 180th Street</td>
<td>T5S 1N7</td>
<td>780-452-6000</td>
<td>780-452-4600</td>
</tr>
<tr>
<td>Saskatoon, SK.</td>
<td>2302 Hanselman Avenue</td>
<td>S7L 5Z3</td>
<td>306-933-0177</td>
<td>306-933-3282</td>
</tr>
<tr>
<td>Regina, SK.</td>
<td>555 Henderson Drive</td>
<td>S42 5X2</td>
<td>306-721-7737</td>
<td>306-721-8611</td>
</tr>
<tr>
<td>Winnipeg, MB.</td>
<td>340 Saulteaux Crescent</td>
<td>R3J 3T2</td>
<td>204-987-9777</td>
<td>204-987-9770</td>
</tr>
<tr>
<td>Mississauga, ON.</td>
<td>7480 Bath Road</td>
<td>L4T 1L2</td>
<td>905-612-0566</td>
<td>905-612-0575</td>
</tr>
</tbody>
</table>

**24 Hour Emergency Number - All Locations - 306-664-2522**