SAFETY DATA SHEET

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

1. Identification

Product identifier: Sodium Hypochlorite, 4%-30%
Other means of identification: Hypo, Liquid Bleach, Soda Bleach, Bleach
Recommended use: Swimming pool sanitizer, bleach for textiles, wood pulp and in effluent treatment, Water treatment chemical.
Recommended restrictions: None known
Manufacturer/Importer/Supplier/Distributor information
Manufacturer
Company name: ERCO Worldwide
Address: 302 The East Mall
Suite 200
Toronto, ON M9B 6C7
Canada
Telephone: (416) 239-7111 (M- F: 8:00 am – 5:00pm EST)
Website: http://www.ercoworldwide.com
E-mail: productinfo@ercoworldwide.com
Emergency phone number
Canada: 613-996-6666 (CANUTEC)
USA: 1-800-424-9300 (CHEMTREC)
Supplier: Refer to Manufacturer

2. Hazard(s) Identification

Physical hazards: Corrosive to metals Category 1
Health hazards: Skin corrosion Category 1
Serious eye damage Category 1
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
Environmental hazards: Hazardous to the aquatic environment, acute hazard Category 1
Hazardous to the aquatic environment, long term hazard Category 2
OSHA defined hazards: Not Classified

Label elements
Signal word: Danger

Hazard statement:
- May be corrosive to metals.
- Causes severe skin burns and eye damage.
- May cause respiratory irritation.
- Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Precautionary statement:

Prevention:
- Keep only in original container. Do not breathe dusts, fume, gas, mist, vapors, spray. Wash hands and face thoroughly after handling. Wear protective gloves, protective clothing, eye protection, face protection. Use only outdoors or in a well-ventilated area. Avoid release to the environment.

Response:
- 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.
- Absorb spillage to prevent material damage.

Storage:
- Store in corrosive resistant container with a resistant inner liner. Store locked up. Store in a well-ventilated place.

Disposal:
- Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC):
- None known.

Supplemental information:
- Contact with acids liberates toxic gas.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Conc. % By Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hypochlorite</td>
<td>7681-52-9</td>
<td></td>
<td>4-30 w/w%</td>
</tr>
<tr>
<td>Sodium Hydroxide</td>
<td>1310-73-2</td>
<td></td>
<td>1-5 w/w%</td>
</tr>
</tbody>
</table>
4. First-Aid Measures

Inhalation
Move to fresh air. Call a physician or poison control center immediately. If breathing is difficult, trained personnel should give oxygen. If breathing stops, provide artificial respiration. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Skin Contact
Take off immediately all contaminated clothing. Immediately flush skin with running water for at least 20 minutes. Cover wound with sterile dressing. Do not rub area of contact. Wash contaminated clothing before reuse. Leather and shoes that have been contaminated with the solution may need to be destroyed. Call a physician or poison control center immediately.

Eye Contact
Immediately flush eyes with plenty of water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Take care not to rinse contaminated water into the unaffected eye or onto the face. Call a physician or poison control center immediately.

Ingestion
If swallowed: Rinse mouth. Do NOT induce vomiting. If vomiting occurs, keep head low so stomach content doesn’t get into the lungs. Never give anything by mouth to a victim who is unconscious or is having convulsions. Call a physician or poison control center immediately.

Most important symptoms/effects, acute and delayed
Corrosive effects. Symptoms may include stinging, tearing, redness, swelling and blurred vision. Permanent eye damage including blindness could result.

Indication of immediate medical attention and special treatment needed
Treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-Fighting Measures

Suitable extinguishing media
Use as appropriate: Water Fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire. Do no use dry extinguishing media that contains ammonium compounds.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters

Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. A full-body chemical resistant suit should be worn.

Firefighting equipment/instructions

In case of fire and/or explosion, do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

No unusual fire or explosion hazards noted.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth, and place into containers for later disposal. Following product recovery, flush area with water.

Never return spills to original containers for re-use. Contaminated absorbent material may pose the same hazards as the spilled product. For waste disposal, see section 13 of the SDS.

Environmental precautions

Do not discharge into drains, water courses or onto the ground. Contact local authorities in case of spillage to drain/aquatic environment.

7. Handling and Storage

Precautions for safe handling

Wear chemically resistant protective equipment during handling. Wear protective gloves/clothing and eye/face protection. Avoid contact with eyes, skin and clothing. Do not apply heat or direct sunlight. Chemical attack increases with solution strength. Use with adequate ventilation. Observe good Industrial hygiene practices. Temperature and product concentration affect product quality and decomposition rates.
Conditions for safe storage, including any incompatibilities

Store in a cool and well-ventilated place. Store in a corrosive resistant container. Consult container manufacturer for additional guidance. Store away from and do not mix with incompatible materials such as acids, oxidizers, organics, reducing agents and all metals except titanium. For frozen product, contact manufacturer for guidance.

8. Exposure Controls/Personal Protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hydroxide (CAS 1310-73-2)</td>
<td>PEL</td>
<td>2 mg/m³</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
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<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hydroxide (CAS 1310-73-2)</td>
<td>Ceiling</td>
<td>2 mg/m³</td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
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<tbody>
<tr>
<td>Sodium Hydroxide (CAS 1310-73-2)</td>
<td>Ceiling</td>
<td>2 mg/m³</td>
</tr>
</tbody>
</table>

US. Workplace Environmental Exposure Level (WEEL) Guides

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hypochlorite (CAS 7681-52-9)</td>
<td>STEL</td>
<td>2 mg/m³</td>
</tr>
</tbody>
</table>

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye Wash facilities and emergency showers must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing. Reports indicate that sodium hypochlorite can react with various fabrics usually increasing with concentration. Reactions vary significantly depending on strength of chemical, material, fabric treatment and
color of dyes. FRC treated cotton has a stronger response than plain cotton. Poly blend fabrics and Meta aramid fabrics have a weaker response than natural fibers. Contact the Personal Protective Equipment manufacturer for specific information about their products.

**Respiratory protection**

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

**Thermal Hazards**

Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

### 9. Physical and Chemical Properties

**Appearance**

- **Physical state**: Liquid
- **Form**: Liquid
- **Colour**: Yellow to greenish
- **Odor**: Pungent
- **Odor threshold**: 0.9 mg/m³
- **pH**: 12 - 14 (25°C/77°F)
- **Melting point/ Freezing point**: -17°F (-27.22°C) (16% solution)
- **Initial boiling point and boiling range**: Not available
- **Flash point**: Not applicable
- **Evaporation rate**: No data available
- **Flammability (solid, gas)**: Not available

**Upper/lower flammability or explosive limits**

- **Flammability limit – lower (%)**: Not applicable
- **Flammability limit – upper (%)**: Not applicable
- **Explosive limit – lower (%)**: Not applicable
- **Explosive limit – upper (%)**: Not applicable
- **Vapor pressure**: 12 mm Hg (12.5% solution)
- **Vapor density**: Not available
- **Relative density**: Not available
- **Relative density temperature**: Not available

**Solubility (ies)**

- **Solubility (water)**: Completely miscible.
- **Partition coefficient (n-octanol/water)**: Not available
- **Auto-ignition temperature**: Not applicable
- **Decomposition temperature**: Not available
- **Viscosity**: Not available
- **Other information**: Not available
10. Stability and Reactivity

Reactivity
The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability
Material is stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization does not occur.

Conditions to Avoid
Contact with incompatible materials. Avoid ultraviolet (UV) light sources. Excessive heat. Reacts violently with strong acids. Acid contact will produce chlorine gas. Amine contact will produce chloramines.

Incompatible materials

Hazardous decomposition products
No hazardous decomposition products are known.

11. Toxicological Information

Information on likely routes of exposure

Inhalation
Vapors and spray mist may irritate throat and respiratory system and cause coughing.

Skin contact
Causes severe skin burns.

Eye contact
Causes serious eye damage.

Ingestion
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.

Symptoms related to the physical, chemical and toxicological characteristics
Corrosive effects. Symptoms may include stinging, tearing, redness, swelling and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity
Occupational exposure to the substance or mixture may cause adverse effects.
### Components

Sodium hypochlorite Solution 17%-30% (CAS Mixture)

<table>
<thead>
<tr>
<th>Test Results</th>
<th>Species</th>
<th>Dermal</th>
<th>Oral</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>Rabbit</td>
<td>&gt;2 g/kg</td>
<td></td>
</tr>
<tr>
<td>LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>Rat</td>
<td>3 – 5 g/kg</td>
<td></td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

### Skin corrosion/irritation
Causes severe skin burns and eye damage.

### Serious eye damage/eye irritation
Causes serious eye damage.

### Respiratory or skin sensitization

| Respiratory sensitization | No data available. |
| Skin sensitizer           | No data available. |

### Germ cell mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

### Carcinogenicity
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

#### IARC Monographs.
Sodium hypochlorite (CAS 7681-52-9)

#### Overall Evaluation of Carcinogenicity
3 Not classifiable as to carcinogenicity to humans.

### Reproductive toxicity
No data available.

### Specific target organ toxicity - single exposure
May cause respiratory irritation.

### Specific target organ toxicity - repeated exposure
No data available.

### Aspiration toxicity
No classified, however droplets of the product may be aspirated into the lungs through ingestion or vomiting and may cause a serious chemical pneumonia.

### Chronic effects
Prolonged or repeated overexposure causes lung damage.

### Further Information
Prolonged inhalation may be harmful.
12. Ecological Information

Ecotoxicity

Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Components

<table>
<thead>
<tr>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hypochlorite. 17-30% (CAS Mixture)</td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td></td>
</tr>
<tr>
<td>LC₅₀</td>
<td></td>
</tr>
<tr>
<td>Bluegill (Lepornis macrochirus)</td>
<td>2.9 mg/l, 96 hours</td>
</tr>
<tr>
<td>Oncorhynchus mykiss</td>
<td>0.9 mg/l, 0.5 hours</td>
</tr>
<tr>
<td>Pimephales promelas</td>
<td>1.4 mg/l, 96 hours</td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

Persistence and degradability

No data is available on the degradability of this product.

Bio accumulative potential

No data available for this product.

Mobility in soil

No data available.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal Considerations

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport Information

**DOT**

- **UN number**: UN 1791
- **UN proper shipping name**: Hypochlorite solutions
- **Transport hazard class(es)**
  - **Class**: 8
  - **Subsidiary risk**: -
- **Packing group**: III
- **Special precautions for user**: Read safety instructions, SDS and emergency procedures before handling.
- **Special provisions**: IB3, N34, T4, TP2, TP24
- **Packaging exceptions**: 154
- **Packaging non bulk**: 203
- **Packaging bulk**: 241

**IATA**

- **UN number**: UN 1791
- **UN proper shipping name**: HYPOCHLORITE SOLUTION
- **Transport hazard class(es)**
  - **Class**: 8
  - **Subsidiary risk**: -
- **Packing group**: III
- **Environmental hazards**: Yes
- **ERG Code**: 8L
- **Special precautions for user**: Read safety instructions, SDS and emergency procedures before handling.

**IMDG**

- **UN number**: UN 1791
- **UN proper shipping name**: HYPOCHLORITE SOLUTION
- **Transport hazard class(es)**
  - **Class**: 8
  - **Subsidiary risk**: -
- **Packing group**: III
- **Environmental hazards**: Yes
- **EmS**: F-A, S-B
- **Special precautions for user**: Read safety instructions, SDS and emergency procedures before handling.
- **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
## 15. Regulatory Information

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

### TSCA Section 12(b)

- Export Notification (40 CFR 707, Subpt. D)
  - Not regulated.

### CERCLA Hazardous Substance List (40 CFR 302.4)

- Sodium hydroxide (CAS 1310-73-2) Listed
- Sodium hypochlorite (CAS 7681-52-9) Listed

### U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### Hazard categories

- Immediate Hazard - Yes
- Delayed Hazard - No
- Fire Hazard - No
- Pressure Hazard - No
- Reactivity Hazard - No

#### SARA 302 Extremely hazardous substance

Not listed.

#### SARA 311/312 Hazardous chemical

Yes

#### SARA 313 (TRI reporting)

Not regulated

### Other federal regulations

#### Clean Air Act (CAA)

- Section 112 Hazardous Air Pollutants (HAPs) List
  - Not regulated.

- Section 112(r) Accidental Release Prevention (40 CFR 68.130)
  - Not regulated.

- Safe Drinking Water Act (SDWA)
  - Not regulated.
US state regulations

**US. Massachusetts**
Sodium hydroxide (CAS 1310-73-2)
Sodium hypochlorite (CAS 7681-52-9)

**US. New Jersey**
Sodium hydroxide (CAS 1310-73-2)
Sodium hypochlorite (CAS 7681-52-9)

**US. Pennsylvania**
Sodium hydroxide (CAS 1310-73-2)
Sodium hypochlorite (CAS 7681-52-9)

**US. Rhode Island**
Sodium hydroxide (CAS 1310-73-2)
Sodium hypochlorite (CAS 7681-52-9)

**US. California**
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. Not listed.

**US. California**
Proposition 65 – Carcinogens & Reproductive Toxicity (CRT): Listed substance

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).
16. Other Information

Issue date: 9/24/2019
Revision #: 3
Revision Indicator: Updated concentration range.

NFPA Ratings

List of abbreviations

- LD₅₀: Lethal Dose, 50%
- LC₅₀: Lethal Concentration, 50%
- EC₅₀: Effective Concentration, 50%
- TWA: Time Weighted Average

Bibliography

- EPA: AQUIRE database
- HSDB®: Hazardous Substance Data Bank
- US. IARC Monographs on Occupational Exposure to Chemical Agents
- IARC monographs. Overall Evaluation of Carcinogenicity
- ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
Disclaimer

Information presented in this SDS is furnished in accordance with OSHA’s Hazard Communication Standard (HCS) 2012.

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