1. Identification

Product identifier
Sodium Hypochlorite, 5 - 17%

Other means of identification

SDS number
10000022

Synonyms

Recommended use
Swimming pool chlorinator, hard surface cleaner, mildecide, Water treatment chemical, Biocides, bleach solutions and bleach fixer solutions

Recommended restrictions
None known.

Manufacturer/Importer/Supplier/Distributor information

Company name
Olin Chlor Alkali Products
Address
490 Stuart Road, NE
Cleveland, TN 37312

Company name
Pioneer Americas, LLC (d/b/a Olin Chlor Alkali Products)
Address
490 Stuart Road, NE
Cleveland, TN 37312

Company name
Olin Canada ULC (d/b/a Olin Chlor Alkali Products)
Address
2020 Robert-Bourassa Blvd., Suite 2190
Montreal, Quebec H3A 2A5

General Information

Telephone
(888) 658-6SDS (737)
Website
olinchloralkali.com
Contact person
ORC SDS Control Group
Emergency phone number
CHEMTREC
US: 1-800-424-9300  Canada: 1-800-567-7455

2. Hazard(s) identification

Physical hazards
Corrosive to metals  Category 1

Health hazards
Skin corrosion/irritation  Category 1
Serious eye damage/eye irritation  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 with long lasting effects.
Precautionary statement

Prevention
Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe mist or vapor. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Keep only in original container. Avoid release to the environment.

Response
If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. Collect spillage.

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

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations. None known.

Supplemental information
Contact with acids liberates toxic gas.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hypochlorite</td>
<td>7681-52-9</td>
<td>5-17</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>1310-73-2</td>
<td>0.10-4.25</td>
</tr>
</tbody>
</table>

4. First-aid measures

Inhalation
Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact
Take off immediately all contaminated clothing. Wash off IMMEDIATELY with plenty of water for at least 15-20 minutes. Get medical attention immediately. Wash contaminated clothing before reuse. Call a physician or poison control center immediately.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion
Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

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. With eye exposure, 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
Water fog. 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 not 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
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting 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.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Absorb spillage to prevent material damage. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see Section 8 of the SDS.
Methods and materials for containment and cleaning up

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. Following product recovery, flush area with water.

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

Environmental precautions

Never return spills in original containers for re-use. For waste disposal, see Section 13 of the SDS.

7. Handling and storage

Precautions for safe handling

Wear appropriate personal protective equipment. Do not get in eyes, on skin, on clothing. Use with adequate ventilation. Observe good industrial hygiene practices. Do not apply heat or direct sunlight. Temperature and product concentration affect product quality and decomposition rates.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed. 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.

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>
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US. NIOSH: Pocket Guide to Chemical Hazards

<table>
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<tbody>
<tr>
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<td>Ceiling</td>
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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 shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear goggles (or safety glasses with side shields) and a face shield. Wear a full-face respirator, if needed. PPE requirements should match type and amount used as determined by the end users PPE hazard assessment.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Skin protection

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 fabric 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. |
| Color | Not available. |

Odor

Pungent.

Odor threshold

0.9 mg/m³

pH

12 - 14 (25 °C/77 °F)

Melting point/freezing point

-4 °F (-20 °C) (7% 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 available. |
| Explosive limit - upper (%) | Not available. |

Vapor pressure

12 mm Hg (20°C/68°F)

Vapor density

Not available.

Relative density

1.209 g/ml (at 12.5%*)

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

* Density at 12.5% is approximately 1.209 g/mL and will vary with factors such as sodium chloride and alkalinity content. Density varies in an approximately linear relationship with strength when manufactured. The relationship between density and strength will change with time due to product decomposition.

Bulk density

Not applicable.

Molecular formula

NaOCl

Molecular weight

74.5 g/mol

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 skin burns.

**Eye contact**
Causes eye burns.

**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.

12. Ecological information

**Ecotoxicity**
Very toxic to aquatic life with long lasting effects.
<table>
<thead>
<tr>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crustacea</td>
<td>LC50, Daphnia 1 mg/l</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50, Bluegill (Lepomis macrochirus) 0.6 mg/l, 48 hours</td>
</tr>
</tbody>
</table>

### Persistence and degradability
No data is available on the degradability of this product.

### Bioaccumulative potential
No data available for this product.

### Mobility in soil
Not 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.

**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: UN1791
- UN proper shipping name: Hypochlorite solutions
- Transport hazard class(es):
  - Class: 8
  - Subsidiary risk: -
  - Label(s): 8
- 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: UN1791
- UN proper shipping name: Hypochlorite solution
- Transport hazard class(es):
  - Class: 8
  - Subsidiary risk: -
  - Label(s): 8
- 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: UN1791
- UN proper shipping name: HYPOCHLORITE SOLUTION
- Transport hazard class(es):
  - Class: 8
  - Subsidiary risk: -
  - Label(s): 8
Packing group: III
Environmental hazards: Marine pollutant: 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.

CERCLA Hazardous Substance: Sodium Hypochlorite, CAS # 7681-52-9, RQ = 100 lbs
CERCLA Hazardous Substance: Sodium Hydroxide, CAS # 1310-73-2, RQ = 1000 lbs.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
- Sodium hydroxide (CAS 1310-73-2) LISTED
- Sodium hypochlorite (CAS 7681-52-9) 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.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

US state regulations

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

US. New Jersey Worker and Community Right-to-Know Act
- Sodium hydroxide (CAS 1310-73-2)
- Sodium hypochlorite (CAS 7681-52-9)

US. Pennsylvania Worker and Community Right-to-Know Law
- Sodium hydroxide (CAS 1310-73-2)
- Sodium hypochlorite (CAS 7681-52-9)

US. Rhode Island RTK
- Sodium hydroxide (CAS 1310-73-2)
- Sodium hypochlorite (CAS 7681-52-9)
**US. California Proposition 65**

This product is not listed, but it may contain elements known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 Safe Drinking Water and Toxic Enforcement Act. For additional information, contact Olin Technical Services (800-299-6546).

**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 this product complies 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, including date of preparation or last revision**

- **Issue date**: 27-February-2014
- **Revision date**: 08-March-2016
- **Version #**: 06

**HMIS® ratings**

- Health: 3
- Flammability: 0
- Physical hazard: 0

**List of abbreviations**

- LD50: Lethal Dose, 50%.
- LC50: Lethal Concentration, 50%.
- EC50: Effective Concentration, 50%.
- TWA: Time weighted average.

**References**

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

**Disclaimer**

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.