# SODIUM HYPOCHLORITE POTABLE GRADE

**Wilhelmsen Ships Service AS**

**Safety Data Sheet (Conforms to Regulation (EU) No 2015/830)**

**SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING**

**1.1. Product Identifier**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>SODIUM HYPOCHLORITE POTABLE GRADE</td>
</tr>
<tr>
<td>Synonyms</td>
<td>241A1T-SODIUM HYPOCHLORITE LG T AP - BLEACH</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>HYPOCHLORITE SOLUTION</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>909001, 909001</td>
</tr>
</tbody>
</table>

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Category Chemical</td>
<td>PC37: Water treatment chemicals</td>
</tr>
<tr>
<td>Sectors of Use</td>
<td>SU3: Industrial uses: Uses of substances as such or in preparations* at industrial sites</td>
</tr>
<tr>
<td>Relevant identified uses</td>
<td>Use according to manufacturer’s directions.</td>
</tr>
<tr>
<td>Uses advised against</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

**1.3. Details of the supplier of the safety data sheet**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered company name</td>
<td>Wilhelmsen Ships Service AS</td>
</tr>
<tr>
<td>Address</td>
<td>Strandveien 20 Lysaker 1366 Norway</td>
</tr>
<tr>
<td>Telephone</td>
<td>+47 67 58 40 00</td>
</tr>
<tr>
<td>Website</td>
<td><a href="http://www.wilhelmsen.com/">http://www.wilhelmsen.com/</a></td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:wss.norway.cs@wilhelmsen.com">wss.norway.cs@wilhelmsen.com</a></td>
</tr>
</tbody>
</table>

**1.4. Emergency telephone number**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Association / Organisation</td>
<td>GitInformasjonssentralen - 24 timer</td>
</tr>
<tr>
<td>Emergency telephone numbers</td>
<td>+47 22591300</td>
</tr>
<tr>
<td>Other emergency telephone numbers</td>
<td>(800) 424 9300</td>
</tr>
</tbody>
</table>

**SECTION 2 HAZARDS IDENTIFICATION**

**2.1. Classification of the substance or mixture**

*Considered a hazardous mixture according to Reg. (EC) No 1272/2008 and their amendments. Classified as Dangerous Goods for transport purposes.*

**CHEMWATCH HAZARD RATINGS**
### DSD classification
In case of mixtures, classification has been prepared by following DPD (Directive 1999/45/EC) and CLP Regulation (EC) No 1272/2008 regulations

### DPD classification

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R31</td>
<td>Contact with acids liberates toxic gas.</td>
</tr>
<tr>
<td>R34</td>
<td>Causes burns.</td>
</tr>
<tr>
<td>R41</td>
<td>Risk of serious damage to eyes.</td>
</tr>
<tr>
<td>R50</td>
<td>Very toxic to aquatic organisms.</td>
</tr>
</tbody>
</table>

### Legend:

### Classification according to regulation (EC) No 1272/2008 [CLP]

H314 - Skin Corrosion/Irritation Category 1C, H400 - Acute Aquatic Hazard Category 1

### 2.2. Label elements

#### Hazard pictogram(s)

- [Danger]

#### SIGNAL WORD
DANGER

#### Hazard statement(s)

- **H314** Causes severe skin burns and eye damage.
- **H400** Very toxic to aquatic life.

#### Supplementary statement(s)

- **EUH031** Contact with acids liberates toxic gas.

#### Precautionary statement(s) Prevention

- **P260** Do not breathe dust/fume/gas/mist/vapours/spray.
- **P280** Wear protective gloves/protective clothing/eye protection/face protection.
- **P273** Avoid release to the environment.

#### Precautionary statement(s) Response

- **P301+P330+P331** IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- **P303+P361+P353** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
- **P305+P351+P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P310** Immediately call a POISON CENTER/doctor/physician/first aider.
- **P363** Wash contaminated clothing before reuse.
- **P391** Collect spillage.
- **P304+P340** IF INHALED: Remove person to fresh air and keep comfortable for breathing.

#### Precautionary statement(s) Storage

- **P405** Store locked up.

#### Precautionary statement(s) Disposal

- **P501** Dispose of contents/container in accordance with local regulations.
2.3. Other hazards

REACh - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

See ‘Composition on ingredients’ in Section 3.2

3.2. Mixtures

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Name</th>
<th>Classification according to directive 67/548/EEC [DSD]</th>
<th>Classification according to regulation (EC) No 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.7681-52-9*</td>
<td>sodium hypochlorite, solution 12 % Cl active</td>
<td>R31, R34, R41, R50 [1]</td>
<td>Skin Corrosion/Irritation Category 1B, Acute Aquatic Hazard Category 1, Serious Eye Damage Category 1; H314, H400, EUH031 [1]</td>
</tr>
<tr>
<td>2.231-668-3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.017-011-00-1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.01-2120763163-58-XXXX</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


SECTION 4 FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact

If this product comes in contact with the eyes:
- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact

If skin or hair contact occurs:
- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

Inhalation

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor, without delay.
- Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.
- Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).
- As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.
- Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.

This must definitely be left to a doctor or person authorised by him/her.

(InSC13719)

Ingestion

- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Transport to hospital or doctor without delay.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11
4.3. Indication of any immediate medical attention and special treatment needed
for corrosives:

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- Monitor and treat, where necessary, for pulmonary oedema.
- Monitor and treat, where necessary, for shock.
- Anticipate seizures.
- Where eyes have been exposed, flush immediately with water and continue to irrigate with normal saline during transport to hospital.
- DO NOT use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- Skin burns should be covered with dry, sterile bandages, following decontamination.
- DO NOT attempt neutralisation as exothermic reaction may occur.

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

EMERGENCY DEPARTMENT

- Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime.
- Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
- Consider endoscopy to evaluate oral injury.
- Consult a toxicologist as necessary.

SECTION 5 FIREFIGHTING MEASURES

5.1. Extinguishing media
- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

5.2. Special hazards arising from the substrate or mixture

| Fire Incompatibility | None known. |

5.3. Advice for firefighters

<table>
<thead>
<tr>
<th>Fire Fighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire/Explosion Hazard</td>
</tr>
<tr>
<td>Non combustible.</td>
</tr>
<tr>
<td>Not considered a significant fire risk, however containers may burn. May emit corrosive fumes.</td>
</tr>
</tbody>
</table>

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
See section 8

6.2. Environmental precautions
See section 12

6.3. Methods and material for containment and cleaning up

<table>
<thead>
<tr>
<th>Minor Spills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.</td>
</tr>
<tr>
<td>Check regularly for spills and leaks.</td>
</tr>
<tr>
<td>Clean up all spills immediately.</td>
</tr>
<tr>
<td>Avoid breathing vapours and contact with skin and eyes.</td>
</tr>
</tbody>
</table>
Control personal contact with the substance, by using protective equipment.

6.4. Reference to other sections
Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

7.1. Precautions for safe handling

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- DO NOT allow clothing wet with material to stay in contact with skin

7.2. Conditions for safe storage, including any incompatibilities

- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.

For low viscosity materials
- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure.

For materials with a viscosity of at least 2680 cSt.
- Contact with acids produces toxic fumes

7.3. Specific end use(s)
See section 1.2

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

- DERIVED NO EFFECT LEVEL (DNEL)
  Not Available

- PREDICTED NO EFFECT LEVEL (PNEC)
  Not Available

- OCCUPATIONAL EXPOSURE LIMITS (OEL)

<table>
<thead>
<tr>
<th>INGREDIENT DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
</tr>
<tr>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EMERGENCY LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingredient</td>
</tr>
<tr>
<td>sodium hypochlorite, solution 12 % Cl active</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Original IDLH</th>
<th>Revised IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemwatch: 9-213288</td>
<td>Version No: 8.17</td>
<td>Page 5 of 13</td>
</tr>
</tbody>
</table>
Sodium hypochlorite, solution 12 % Cl active

### MATERIAL DATA

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers’ responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more.

#### 8.2. Exposure controls

**8.2.1. Appropriate engineering controls**

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

- Process controls which involve changing the way a job activity or process is done to reduce the risk.

**8.2.2. Personal protection**

**Eye and face protection**

- Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure.
- Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted.
- Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.

**Skin protection**

See Hand protection below

**Hands/feet protection**

- Elbow length PVC gloves
- When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

**Body protection**

See Other protection below

**Other protection**

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.

### Recommended material(s)

**GLOVE SELECTION INDEX**
Glove selection is based on a modified presentation of the "Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the computer-generated selection:

<table>
<thead>
<tr>
<th>Material</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATURAL RUBBER</td>
<td>A</td>
</tr>
<tr>
<td>NATURAL+NEOPRENE</td>
<td>A</td>
</tr>
<tr>
<td>NEOPRENE</td>
<td>A</td>
</tr>
<tr>
<td>NITRILE</td>
<td>A</td>
</tr>
<tr>
<td>NITRILE+PVC</td>
<td>A</td>
</tr>
<tr>
<td>PVC</td>
<td>A</td>
</tr>
</tbody>
</table>

*CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. - * Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

8.2.3. Environmental exposure controls
See section 12

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Greenish yellow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Not Available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not Available</td>
</tr>
<tr>
<td>pH (as supplied)</td>
<td>11-13</td>
</tr>
<tr>
<td>Melting point / freezing point (°C)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range (°C)</td>
<td>216</td>
</tr>
<tr>
<td>Flash point (°C)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not Available</td>
</tr>
<tr>
<td>Flammability</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Upper Explosive Limit (%T)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Lower Explosive Limit (%T)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Vapour pressure (kPa)</td>
<td>23.94</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Miscible</td>
</tr>
<tr>
<td>Vapour density (Air = 1)</td>
<td>2.5</td>
</tr>
<tr>
<td>Relative density (Water = 1)</td>
<td>1.22 - 1.26</td>
</tr>
<tr>
<td>Partition coefficient n-octanol / water</td>
<td>Not Available</td>
</tr>
<tr>
<td>Auto-ignition temperature (°C)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not Available</td>
</tr>
<tr>
<td>Viscosity (cSt)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Molecular weight (g/mol)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Taste</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not Available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not Available</td>
</tr>
<tr>
<td>Surface Tension (dyn/cm or mN/m)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Volatile Component (%vol)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Gas group</td>
<td>Not Available</td>
</tr>
<tr>
<td>pH as a solution (1%)</td>
<td>Not Available</td>
</tr>
<tr>
<td>VOC g/L</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

9.2. Other information
Not Available

SECTION 10 STABILITY AND REACTIVITY
10.1. Reactivity

See section 7.2

10.2. Chemical stability

- Unstable in the presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

10.3. Possibility of hazardous reactions

See section 7.2

10.4. Conditions to avoid

See section 7.2

10.5. Incompatible materials

See section 7.2

10.6. Hazardous decomposition products

See section 5.3

SECTION 11 TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Inhaled

Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. The material has NOT been classified by EC Directives or other classification systems as “harmful by inhalation”. This is because of the lack of corroborating animal or human evidence. In the absence of such evidence, care should be taken nevertheless to ensure exposure is kept to a minimum and that suitable control measures be used, in an occupational setting to control vapours, fumes and aerosols.

Ingestion

The material can produce severe chemical burns within the oral cavity and gastrointestinal tract following ingestion. The material has NOT been classified by EC Directives or other classification systems as “harmful by ingestion”. This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g. liver, kidney) damage is evident.

Skin Contact

The material can produce severe chemical burns following direct contact with the skin. Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

Eye

The material can produce severe chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating. When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.

Chronic

Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

SODIUM HYPOCHLORITE POTABLE GRADE

<table>
<thead>
<tr>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

sodium hypochlorite, solution 12 % Cl active

<table>
<thead>
<tr>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral (mouse) LD50: 5800 mg/kg&lt;sup&gt;[2]&lt;/sup&gt;</td>
<td>Eye (rabbit): 10 mg - moderate</td>
</tr>
<tr>
<td>Oral (rat) LD50: 8910 mg/kg&lt;sup&gt;[3]&lt;/sup&gt;</td>
<td>Eye (rabbit): 100 mg - moderate</td>
</tr>
<tr>
<td>Oral (woman) TDL0: 1000 mg/kg&lt;sup&gt;[2]&lt;/sup&gt;</td>
<td>Skin (rabbit): 500 mg/24h-moderate</td>
</tr>
</tbody>
</table>

Legend:

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity
2. Value obtained from manufacturer's SDS.
3. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

Hypochlorite salts are classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. Most of the data for toxicity of hypochlorites by the oral route are from studies performed with sodium hypochlorite or
chlorine gas. In biological systems, characterised by pH values in the range of 6-8, the most abundant active chemical species is (hypochlorous acid) HOCl, in equilibrium with hypochlorite anion (ClO\textsuperscript{-}). Such available chlorine is readily absorbed via the oral route and distributed into plasma, bone marrow, testis, skin, kidney and lung.

SODIUM HYPOCHLORITE

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant.

**SECTION 12 ECOLOGICAL INFORMATION**

### 12.1. Toxicity

<table>
<thead>
<tr>
<th>ENDPOINT</th>
<th>TEST DURATION (HR)</th>
<th>SPECIES</th>
<th>VALUE</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

**Legend:**
- Data either not available or does not fill the criteria for classification
- Data available to make classification

### 12.2. Persistence and degradability

**Ingredient**

<table>
<thead>
<tr>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Data available for all ingredients</td>
<td>No Data available for all ingredients</td>
</tr>
</tbody>
</table>

### 12.3. Bioaccumulative potential

**Ingredient**

<table>
<thead>
<tr>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Data available for all ingredients</td>
</tr>
</tbody>
</table>

### 12.4. Mobility in soil

**Ingredient**

<table>
<thead>
<tr>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Data available for all ingredients</td>
</tr>
</tbody>
</table>

### 12.5. Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>P</th>
<th>B</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
12.6. Other adverse effects

No data available

SECTION 13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

- Containers may still present a chemical hazard/danger when empty.
- Return to supplier for reuse/recycling if possible.

Otherwise:
- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Legislation addressing waste disposal requirements may differ by country, state and/or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Treat and neutralise at an approved treatment plant.

Waste treatment options
Not Available

Sewage disposal options
Not Available

SECTION 14 TRANSPORT INFORMATION

Labels Required

- Marine Pollutant

Land transport (ADR)

14.1. UN number
1791

14.2. UN proper shipping name
HYPOCHLORITE SOLUTION

14.3. Transport hazard class(es)
- Class: 8
- Subrisk: Not Applicable

14.4. Packing group
II

14.5. Environmental hazard
Environmentally hazardous

14.6. Special precautions for user
- Hazard identification (Kemler): 80
- Classification code: C9
- Hazard Label: 8
- Special provisions: 521
- Limited quantity: 1 L

Air transport (ICAO-IATA/DGR)

14.1. UN number
1791
### 14.1. UN number
1791

### 14.2. UN proper shipping name
Hypochlorite solution

### 14.3. Transport hazard class(es)
- ICAO/IATA Class: 8
- ICAO / IATA Subrisk: Not Applicable

### 14.4. Packing group
II

### 14.5. Environmental hazard
Environmentally hazardous

### 14.6. Special precautions for user
- Special provisions: A3 A803
- Cargo Only Packing Instructions: 855
- Cargo Only Maximum Qty / Pack: 30 L
- Passenger and Cargo Packing Instructions: 851
- Passenger and Cargo Maximum Qty / Pack: 1 L
- Passenger and Cargo Limited Quantity Packing Instructions: Y840
- Passenger and Cargo Limited Maximum Qty / Pack: 0.5 L

## Sea transport (IMDG-Code / GGSee)

### 14.1. UN number
1791

### 14.2. UN proper shipping name
HYPOCHLORITE SOLUTION

### 14.3. Transport hazard class(es)
- IMDG Class: 8
- IMDG Subrisk: Not Applicable

### 14.4. Packing group
II

### 14.5. Environmental hazard
Marine Pollutant

### 14.6. Special precautions for user
- EMS Number: F-A, S-B
- Special provisions: Not Applicable
- Limited Quantities: 1 L

## Inland waterways transport (ADN)

### 14.1. UN number
1791

### 14.2. UN proper shipping name
HYPOCHLORITE SOLUTION

### 14.3. Transport hazard class(es)
8 Not Applicable

### 14.4. Packing group
II

### 14.5. Environmental hazard
Environmentally hazardous

### 14.6. Special precautions for user
- Classification code: C9
- Special provisions: S21
- Limited quantity: 1 L
- Equipment required: PP, EP
- Fire cones number: 0

## 14.7. Transport in bulk according to Annex II of MARPOL and the IBC code

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>PRODUCT NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hypochlorite solution (15% or less)</td>
<td>Y</td>
</tr>
</tbody>
</table>

## SECTION 15 REGULATORY INFORMATION
15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture

SODIUM HYPOCHLORITE, SOLUTION 12 % Cl active (7681-52-9*) IS FOUND ON THE FOLLOWING REGULATORY LISTS

- ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
- Europe ECHA Registered Substances - Classification and Labelling - DSD-DPD
- Europe European Agreement concerning the International Carriage of Dangerous Goods by Road - ADR 2017 (Russian)
- Europe European Chemicals Agency (ECHA) REACH Registration Numbers
- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR 2011, Norwegian)
- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR 2011, Portuguese)
- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR 2011, Spanish)
- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR 2015, German)
- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR 2017, English)
- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR-S 2019, Swedish)
- European Chemical Agency (ECHA) Classification & Labelling Inventory - Chemwatch Harmonised classification
- European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)
- European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)
- European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List (English)
- European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List (French)
- European Union (EU) Transport of Dangerous Goods by Road - Dangerous Goods List (German)
- Fisher Transport Information
- GESAMP/EHS Composite List - GESAMP Hazard Profiles
- IMO IBC Code Chapter 17: Summary of minimum requirements
- IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
- International Air Transport Association (IATA) Dangerous Goods Regulations
- International Maritime Dangerous Goods Requirements (IMDG Code)
- Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2017 (English)
- United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (English)
- United Nations Recommendations on the Transport of Dangerous Goods Model Regulations (Spanish)

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2015/830; Regulation (EC) No 1272/2008 as updated through ATPs.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**ECHA SUMMARY**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS number</th>
<th>Index No</th>
<th>ECHA Dossier</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hypochlorite, solution 12 % Cl active</td>
<td>7681-52-9*</td>
<td>017-011-00-1</td>
<td>01-2119488154-34-XXXX</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Harmonisation (C&amp;L Inventory)</th>
<th>Hazard Class and Category Code(s)</th>
<th>Pictograms Signal Word Code(s)</th>
<th>Hazard Statement Code(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skin Corr. 1B; Aquatic Acute 1</td>
<td>GHS09; GHS05; Dgr</td>
<td>H314; H400</td>
</tr>
<tr>
<td>1</td>
<td>Ox. Sol. 2; Met. Corr. 1; Skin Corr. 1B; Eye Dam. 1; Aquatic Acute 1; Aquatic Chronic 1</td>
<td>GHS03; GHS09; GHS05; Dgr</td>
<td>H272; H290; H314; H410</td>
</tr>
</tbody>
</table>

*Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.*

### National Inventory Status

<table>
<thead>
<tr>
<th>National Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia - AICS</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada - DSL</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada - NDSL</td>
<td>No (sodium hypochlorite, solution 12 % Cl active)</td>
</tr>
<tr>
<td>China - IECSC</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe - EINEC / ELINCS / NLP</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Japan - ENCS  Yes
Korea - KECI  Yes
New Zealand - NZIoC  Yes
Philippines - PICCS  Yes
USA - TSCA  Yes

Legend:
Yes = All ingredients are on the inventory
No = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Revision Date  08/08/2017
Initial Date  08/08/2017

CONTACT POINT
- For quotations contact your local Customer Services - http://wssdirectory.wilhelmsen.com/#/customerservices - Responsible for safety data sheet
Wilhelmsen Ships Service AS - Prepared by: Product HSE Manager, - Email: Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com - Telephone: Tel.: +31 10 4877775

Full text Risk and Hazard codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H272</td>
<td>May intensify fire; oxidiser.</td>
</tr>
<tr>
<td>H290</td>
<td>May be corrosive to metals.</td>
</tr>
<tr>
<td>H410</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

Other information

DSD / DPD label elements
Not Applicable

Relevant risk statements are found in section 2.1

| Indication(s) of danger | Not Applicable |

SAFETY ADVICE

<table>
<thead>
<tr>
<th>Advice</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S01</td>
<td>Keep locked up.</td>
</tr>
<tr>
<td>S02</td>
<td>Keep out of reach of children.</td>
</tr>
<tr>
<td>S04</td>
<td>Keep away from living quarters.</td>
</tr>
</tbody>
</table>

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:
EN 166 Personal eye-protection
EN 340 Protective clothing
EN 374 Protective gloves against chemicals and micro-organisms
EN 13832 Footwear protecting against chemicals
EN 133 Respiratory protective devices

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