

Safety Data Sheet

1. IDENTIFICATION

Sodium Hypochlorite

Use: Oxidizing Biocide; Chemical intermediate, disinfectant, bleaching agent, chlorination of water, waste water treatment

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Emergency Information

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2. HAZARD(s) IDENTIFICATION

GHS Classification: GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Metal corrosive (Category 1), H290
Acute toxicity, Oral (Category 4), H302
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

Label Element:



Signal Word: **Danger**

Hazard Statement: May be corrosive to metals.
Harmful if swallowed.
Causes severe skin burns and eye damage.

May cause respiratory irritation.
Very toxic to aquatic life with long lasting effects.

Precautionary Statements

- Prevention:** Keep away from heat. Keep/Store away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Use only outdoors or in a well-ventilated area. Do not breathe mist or vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product. Avoid release to the environment
- Response:** In case of fire: Use water for extinction. 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 in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If exposed: Call a poison center/doctor. Collect spillage.
- Storage:** Store locked up. Store in a well-ventilated place. Keep container tightly closed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS No.	Percentage
Sodium Hypochlorite	(7681-52-9)	7% - 8.5%
Water	(7732-18-5)	Balance

4. FIRST-AID MEASURES

- Eyes:** Immediately flush with plenty of lukewarm water for up to 20 minutes. Remove any contact lenses and open eyelids wide apart. Continue rinsing. Take care not to raise contaminated water into affected eye. Get medical attention immediately.
- Skin:** Take off immediately all contaminated clothing. Immediately flush skin with plenty of water. Wash contaminated clothing before reuse.
- Ingestion:** Never give anything by mouth if victim is rapidly losing consciousness, or if unconscious or convulsing. Have victim rinse mouth thorough with water. Have victim drink one cup (240-300ml 8-10 oz) to dilute material in stomach. Do not induce vomiting. If vomiting occurs naturally, rinse mouth and repeat administration of water. If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped cardiopulmonary resuscitation (CPR) immediately. Get medical attention immediately.

Inhalation: Remove source of contamination or move victim to fresh air. If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped start CPR (cardiopulmonary resuscitation). Get medical attention immediately.

5. FIRE-FIGHTING MEASURES

Extinguishing Media: Regular dry chemical, carbon dioxide, fine water spray, regular foam.

Exposure Hazard: Nonflammable but is decomposed by heat and light, causing a pressure build-up resulting to explosion. When heated, it may release chlorine gas or hydrochloric acid. Reaction with oxidizable or organic materials may result in fire

Protective Equipment: Wear full protective clothing and self-contained breathing apparatus exposed to vapors or products of combustion.

Advice for Firefighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Move containers from the fire area if you can do so without risk. Use water spray to cool adjacent fire exposed containers. Product will not burn but may splatter if temperature exceeds boiling point.

6. ACCIDENTAL RELEASE MEASURES

Personal Precaution: Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental Precaution: Cover the drains to prevent the product from entering the environment. If product contaminates rivers and lakes or drains inform respective authorities.

Clean up Methods: Shut off the source of the leak if conditions are safe. Absorb in dry sand or earth and place into containers for proper disposal. Neutralize with sodium sulphite, bisulfite or thiosulfate, and then flush with plenty of water. Do not use combustible materials, such as saw dust. Do not use sulphates or bisulphates for spill neutralizing.

7. HANDLING and STORAGE

Handling: Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.

Storage: Keep container tightly closed in a dry and well-ventilated place. May corrode metallic surfaces. Store in a metallic or coated fiberboard drum using a strong polyethylene

inner package. Corrosive materials should be stored in a separate safety storage cabinet or room.

**Incompatible
Materials:**

carbon steel, stainless steel, copper and its alloys, aluminum, unprotected metals, epoxy, elastomers

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Personal Protection:

RUBBER BOOTS, GLOVES, APRON, FACE SHIELD.

Personal protective equipment (PPE) must be suitable for the nature of the work and any hazard associated with the work as identified by the risk assessment conducted. Wear rubber boots, gloves, apron, face shield. Available information suggests that gloves made from nitrile rubber should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Respiratory Protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)

Eye Protection:

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU)

Skin Protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Other Personal Protection
Data:**

Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene Measures:

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL and CHEMICAL PROPERTIES

Physical State:
Appearance:

Liquid
Clear, greenish-yellow color

Odor:	Pungent, chlorine-like odor
Odor threshold:	0.9 ppm
pH:	> 10
Specific gravity:	1.11 – 1.14
Melting point/freezing point:	< -10 °C
Boiling point:	105 °C approx.
Vapor Pressure:	20 mmHg @ 20 °C
Vapor Density:	1.2 (air=1)
Viscosity:	2.6 mPas at 20°C

10. STABILITY and REACTIVITY

Conditions to Avoid:	Light, heat and incompatibilities.
Chemical Stability:	Stable under normal ambient and anticipated storage and handling conditions. Stability decreases with concentration, heat, light exposure, decrease in pH and contamination with heavy metals. Unstable and decomposes at pH.
Materials to Avoid:	Acids, metals and metal salts, amines, ammonia and ammonium salts, urea, ethylene glycol, formic acid, methanol, reducing and oxidizing agents, cellulose, organics and combustible material, peroxides, EDTA..
Hazardous Decomposition:	Chlorine gas, hydrochloric acid, hypochlorous acid

11. TOXICOLOGICAL INFORMATION

Routes of exposure: inhalation, ingestion, skin and eye contact

Potential acute effects

Inhalation:	Irritant, to respiratory tract. May cause irritation of eyes and nose, sore throat, cough, chest tightness, headache, ataxia and confusion. Pulmonary edema may occur up to 36 hours after exposure
Ingestion:	Can result in nausea, vomiting, diarrhea abdominal pain and chemical burns to the gastrointestinal tract.
Skin contact:	May cause irritation and contact dermatitis, but any effects on intact skin are highly unlikely.
Eye contact:	May cause immediate pain, irritation, lacrimation, burning sensation, and transient corneal injury.
Chronic effects:	Prolonged or repeated eye contact may cause conjunctivitis. Prolonged or repeated inhalation may cause allergic respiratory reaction (asthma).

Numerical measures of toxicity

LD50: 8910 mg/kg (undiluted) (Rat, oral)

5800 mg/kg (Mouse, oral)
>20 g/kg (Rabbit male/female, dermal)
LC50: Greater than 10,000 mg/m³ for 1 hour exposure
(Inhalation, rat)
Primary Skin Irritation: (rabbit) > 2 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life.
96-hour LC50 : fathead minnows: 0.090-5.9 mg/L
Bluegill sunfish: 0.10-2.48 mg/L
shore crab: 1.418 mg/L
grass shrimp: 52.0 mg/L,
scud: 0.145-4.0 mg/L
water flea: 2.1 mg/L.

Persistence and Degradability:

Biodegradation (In water):	Reacts rapidly with organic matter, e.g. sewage, soil, leading to ultimate reduction to chloride.
Photodegradation (In air):	In water, under photolysis, sodium hypochlorite with concentration of 13-18 mg/L, has a half-life of 12 min. at pH =8 . This increases up to 60 min. with pH decreasing
Bioaccumulative potential:	An accumulation in organisms is not to be expected.
Mobility in the soil:	Soluble in water. Readily absorbed into soil
Other adverse effects:	Because of the high pH of this product, it would be expected to produce significant ecotoxicity to aquatic or terrestrial organism systems.

13. DISPOSAL CONSIDERATION

Disposal of wastes:	Consult appropriate Federal, State/Provincial and local regulatory authorities to ascertain proper disposal procedures. Care should be taken not to mix waste Sodium Hypochlorite with incompatible material. Sodium Hypochlorite should be dissolved in water and the available chlorine should be treated using a reducing agent.
Contaminated Packaging:	Since empty containers retain product residue, follow label warnings even after container is emptied.
Clean up:	Do not touch spilled material. Prevent material from entering sewers or confined place. Shovel into clean, dry, labeled containers. Flush area with water.

Contaminated materials may be dissolved in water, then treated with a reducing agent such as sodium sulfite. Care should be taken while handling contaminated material due to fire risk.

14. TRANSPORT INFORMATION

ROAD AND RAIL TRANSPORT

Classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

UN No: 1791
Dangerous Goods Class: 8
Packing Group: III
Hazchem Code: 2X
Emergency Response Guide No: 37
Proper Shipping Name: HYPOCHLORITE SOLUTION

Segregation Dangerous Goods: Not to be loaded with explosives (Class 1), dangerous when wet substances (Class 4.3), oxidising agents (Class 5.1), organic peroxides (Class 5.2), radioactive substances (Class 7) or food and food packaging in any quantity. Note 1: Concentrated strong alkalis are incompatible with concentrated strong acids. Note 2: Concentrated strong acids are incompatible with concentrated strong alkalis. Note 3: Acids are incompatible with Dangerous Goods of Class 6 which are cyanides. Exemptions may apply.

MARINE TRANSPORT

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

UN No: 1791
Dangerous Goods Class: 8
Packing Group: III
Proper Shipping Name: HYPOCHLORITE SOLUTION

AIR TRANSPORT

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA)
Dangerous
Goods Regulations for transport by air.

UN No: 1791
Dangerous Goods Class: 8
Packing Group: III

Proper Shipping Name: HYPOCHLORITE SOLUTION

15. REGULATORY INFORMATION

U.S. Regulations:

TSCA: Listed

OSHA CLASSIFICATION, 29 CFR §1900-1910:

Physical Hazards: Reactivity

Health Hazards: Acute - Skin Sensitizer, Corrosive

CERCLA AND SARA REGULATIONS, 40 CFR §300-373:

Reportable Quantity = 100 lb.

CERCLA Hazardous Material: Yes

Title III Hazard Classifications: Acute – yes

Chronic – no

Fire – yes

Reactivity - yes

Sudden Release of Pressure - No.

This product may be reportable under the requirements of 40 CFR §370.

SARA Extremely Hazardous Substance: No SARA

Toxic Chemical: No

CA Prop 65: No

FDA 21 CFR 178.1010:

Yes, Approved as Sanitizer

EPA "CLEAN AIR ACT":

This product does not contain nor is it manufactured with ozone depleting substances. It is not defined as a Hazardous Air Pollutant per 40 CFR 112.

Canadian Regulations

DSL: Listed

WHMIS Classification: E

European Regulations

Danger/Hazard Symbol:

C Corrosive

EC Risk and Safety Phrases:

R 31 Contact with acids liberates toxic gas.

R 34 Causes burns.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

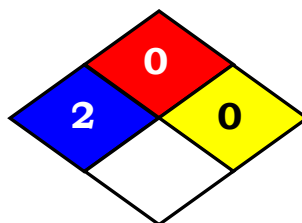
S 50 Do not mix with acid

16. OTHER INFORMATION

HMIS

HEALTH	2
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	X

NFPA



Risk phrases:

- R34 : Causes burns.
R31 : Contact with acids liberates toxic gas.

Safety phrases:

- S2 : Keep out of the reach of children.
S24/25 : Avoid contact with skin and eyes.
S26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 : After contact with skin, wash immediately with plenty of water.
S36/37/39 : Wear suitable protective clothing, gloves and eye / face protection.
S45 : In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Precautionary phrases: Danger!

Do not use together with other products. May release dangerous gases (chlorine).

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.