



SAFETY DATA SHEET FOR CHEMICALS  
MSDS

**SODIUM HYPOCHLORITE**

REVISION DATE: 3/20/2018

**1. - IDENTIFICATION OF PRODUCT AND COMPANY**

**Product name:** Sodium hypochlorite.

**Internal Code of product identification:** 121.01.0.

**Company name:** USIQUÍMICA DO BRASIL LTDA.

**Address:** Rua da Lagoa, 431 - Cumbica - Guarulhos - SP.

**Company Phone:** (11) 3821-7000 - PBX System.

**Emergency call numbers:** SUATRANS - COTEC - Environmental Emergency.  
DDG (0800) 0111-767 - (0800) 7071-767 - 24 HOURS.  
193 - Firefighters.

**Main recommended uses for the substance:** Used in water treatment plants, in laundries, bleaching in the paper and cellulose process, disinfectants, sanitizers and fungicides.

**2. - HAZARDS IDENTIFICATION**

**Substance classification or mixture (according to ABNT NBR 14.725-2)**

Corrosive to metals - Category 1


Corrosive to skin- Category 1B

Toxicity specific organs - specific targets - Single Exposure - Category 3

Dangerous to the aquatic environment- Acute - Category 1

Dangerous to the aquatic environment- Chronic - Category 2

**Appropriate labeling elements (GHS classification):**

LABELING ELEMENTS	DATA
Product identification and supplier emergency phone.	Commercial Name: Sodium hypochlorite. Synonym: Hypochlorite Emergency call number: SUATRANS - COTEC - Environmental Emergency. DDG (0800) 0111-767 - (0800) 7071-767 - 24 HOURS.
Chemical composition	Caustic soda (NaOH) - 1% mass, sodium chloride (NaCl) - 14% mass, Water - 71% mass, sodium hypochlorite - 14% mass (12 to 14).
Hazard pictogram	
Warning words	<b>Dangerous.</b>
Hazard phrase	H290 - May be corrosive to metals. H314 - Causes severe skin burn and eye damage. H318 - Causes serious eye damage. H335- May cause irritation to the respiratory tracts. H400 - Greatly toxic to aquatic organisms. H411- Toxic to aquatic organisms, with prolonged effects.
Caution phrase	P264 - Wash skin thoroughly after handling. P280 - Use protective gloves/protective clothing/eye protection/face shield. P303+P361+P353 - IN CASE OF SKIN CONTACT ( or with the hair): Remove immediately all contaminated clothing. Wash the skin with water/take a shower. P304+P340+P310 - IN CASE OF INHALATION: Remove the person to a ventilated area and keep the person in a rest position that does not make it difficult to breathe. Please Immediately contact a TOXICOLOGICAL INFORMATION CENTER/physician. P305+P351+P338+P310 - IN CASE OF EYE CONTACT: Rinsing thoroughly



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	<p>with water for several minutes. If contact lenses are used, remove them if it is easy. Continue rinsing. Please Immediately contact a TOXICOLOGICAL INFORMATION CENTER/physician.</p> <p>P364- Wash contaminated clothing before using it again.</p> <p>P403 + P233 - Store in a well-ventilated place. Keep the container hermetically sealed.</p>
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**Other hazards which do not result in an classification**

No information found

**3. - COMPOSITION AND INFORMATION ON THE INGREDIENTS:**

**Substance:** NaClO (sodium hypochlorite) in aqueous solution.

**Chemical or common name:** Sodium hypochlorite.

**Synonym:** Hypochlorite.

**Composition:** Caustic soda (NaOH) - 1% mass, sodium chloride (NaCl) - 14% mass, Water - 71% mass, sodium hypochlorite - 14% mass (12 to 14).

**CAS Registration No.:** 7681-52-9

**Impurities that contribute to the hazard:** Not applicable.

**4. - FIRST AID MEASURES:**

**First aid measures:**

- **Inhalation:** Remove the victim ventilated area and keep the person in a rest position that does not make it difficult to breathe. Providing oxygen or artificial respiration if necessary. If you feel unwell, contact a TOXICOLOGICAL INFORMATION CENTER/or a doctor. Take this MSDS
- **Skin contact:** Wash exposed skin with sufficient amount of water to remove the material for at least 15 minutes. Remove the contaminated clothing and footwear. In case of skin irritation: Consult a physician. Take this MSDS.
- **Eye contact:** Rinse thoroughly with water for several minutes. Keep your eyelids apart and wash your eyes with plenty of water for at least 15 minutes. If contact lenses are used, remove them, if it is easy and rinse again. If eye irritation persists: Consult a physician. Take this MSDS.
- **Ingestion:** Do not induce vomiting. Wash the victim's mouth with plenty of water. Never give anything by mouth to an unconscious person. If possible, have the victim ingest activated charcoal. If you feel unwell, contact a TOXICOLOGICAL INFORMATION CENTER/or a doctor. Take this MSDS.

**Symptoms and effects most important acute or delay:**

**Inhalation:** Difficulty breathing, cough, chemical pneumonitis, pulmonary edema. Severe respiratory irritant. Irritant to membrane mucous membranes. Repeated exposure can cause bleeding from the nose and risk of chronic bronchitis.

**Skin:** Redness, swelling of the tissues, burning. Serious irritation in the skin. Repeated exposure can cause ulceration.

**Eyes:** Redness, lacrimation, swelling of the tissues, burning. Corrosive. It can cause irreversible damage to the eyes.

**Ingestion:** Nausea, abdominal pain, bloody vomiting, diarrhea, suffocation, cough, severe respiratory failure. If swallowed, Severe burns in the mouth and throat, as well as , perforation of the esophagus and stomach. Risk of chemical bronchopneumonia by aspiration of the product into the respiratory tract.

Risk of shock. Risk of respiratory disorder.

**Notes to the physician:** - Indication of immediate medical attention and special treatment needed, if applicable.

- The injuries severity and the prognosis of intoxication depend directly on the concentration and duration of exposure.

**5. - FIRE FIGHTING MEASURES**

**Extinguishing measures:**

- **Appropriate:** Small proportions, use fire extinguishers. Large proportions, water in the form of fog or foam.

**Not appropriate:** Direct water jet to product.

**Specific substance hazards:** Contact with reducing agents leads to violent reactions, which may lead to fire.

**Firefighting team protection measures:** Cooling the containers with water fog to avoid decomposition of the product. Using dry chemical powder to extinguish fires.



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Keeping unauthorized persons not involved in the incident at a safe distance.

## 6. - MEASURES OF CONTROL FOR SPILL OR LEAK

**Personal Precautions:** Using splash glasses, gloves, protective clothing and face shield. Avoid to breathing acid vapors. Always wash after handling the product.

**Removal ignition sources:** Not applicable (hypochlorite is not combustible).

**Prevention of inhalation and contact with skin, mucous membranes and eyes.**

Use the specific PPE indicated in section 8.

**Precautions to the environment:** The hypochlorite, in order not to affect the waterways, needs to be well diluted. Concentrated solutions of hypochlorite must be kept away from springs, rivers, waterways and sewers, mounting containments with earth, sand or other inert absorbent material.

**Emergency procedures and alarm systems:** In emergency situations, provide people with protection for the body, face, eyes, arms and hands. There is hardly any vapor emanation, except in the event that a fire in the vicinity has reached a container with hypochlorite, which after heating will give off toxic vapors.

**Cleaning methods:** If possible, stop the leak using personal protection. Absorb the product in inert material and transfer the waste dry to specific containers. If necessary, evacuate the area (large leaks). Report what happened to the local environmental agency. Wash the area after debris is removed from the large quantity of water.

**Neutralization:** Do not add acid for neutralization due to the emanation of chlorine gas. The most effective measure is to contain the liquid with sand and dispose of it in containers made of material that will not be attacked by corrosion.

**Disposal:** To meet with applicable environmental legislation;

**Secondary hazard prevention:** Keep away from the fumes generated in case of contact of the product with fire, because in addition to the emanation of toxic vapors, there is a risk of explosion in case of contact with reducing agents, resulting in violent reactions.

## 7. - HANDLING AND STORAGE

**Handling:** Use the appropriate PPE (see section 8) for handling the product, including with regard to waste generated from containment.

**Technical measures:** Identify the containers containing the hypochlorite in accordance with Decree No. 96.044 / 88 and its respective Ordinances. Providing the product handling area with emergency shower set and eye wash. Handling must only be done with the indicated PPEs and in safe conditions.

**Prevention of worker's exposure:** Wear specific PPEs - splashes glasses, face shield, PVC gloves and protective clothing. To avoid inhaling alkaline vapors.

Washing after handling and decontaminate PPEs after use. The PPEs must be approved for use only with the respective CAs - Certificates of Approval.

**Fire and explosion prevention** Hypochlorite alone does not catch fire.

**Precautions and guidelines for safe handling:** Handling containers and packaging using appropriate PPEs. Make sure that the packaging is identified and free from contaminants. Avoid breathing the vapor produced by the product.

**Storage:** Avoid to storage of hypochlorite with incompatible products. Storing in a cool, dry place. The containers must be resistant to corrosion (example: titanium and plastic material, type polyethylene, polypropylene, PVC, reinforced with fiberglass, steel coated with plastic reinforced with fiberglass). Avoid to direct exposure of the sun to the product.

**Storage conditions appropriate:** Storing in a ventilated, cool and isolated place. Do not close the cover tightly, but when moving the container, close the cover correctly.

**Storage conditions to be avoided:** Storage in uncoated metal containers and under light. Avoid to exposure to the sun and heat source.

### Hygiene measures

**Appropriate:** Always sanitize the hands before handling any food, as there is a risk of contamination of the food.

Contaminated clothing having must be washed and sanitized before the use. Keeping gloves free from moisture and decontaminated.

**Inappropriate:** Direct contact with the product and / or its residues.

### Technical measures:

**Adequate conditions:** Materials based on plastic or metal alloy coated with rubber, due to the corrosive action of product.



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Providing the storage area with containment capable of supporting the stored capacity. To avoid percolating the product through the soil in order to achieve the underground layers of the soil. The tanks must have a containment dam of capacity above the capacity of the storage tank. It is suggested 1.5 times.

**Conditions which must be avoided:** Direct contact with concrete and uncoated metal alloys.

**Packaging appropriate materials:** PVC, HDPE, PP, PTFE, vinyl epoxy-ester resins, phenolic resins, polyester, natural rubber, neoprene and viton.

**Packaging inadequate materials:** Carbon steel, aluminum, bronze, cadmium, lead, copper, nickel, galvanized iron, brass, nickel, silver, zinc polycarbonate, epoxy and concrete.

## 8. - EXPOSURE CONTROLS AND INDIVIDUAL PROTECTION

### Parameters of specific control

#### Occupational exposure limits

Annex 11 of NR-15 of Ordinance No. 3.214 / 78: 0.8 ppm (as Cl<sub>2</sub>).

NR-15 Maximum value : 2.4 ppm (as Cl<sub>2</sub>).

ACGIH TLVs: 0.5 ppm (as Cl<sub>2</sub>).

ACGIH STEL: 1.0 ppm (as Cl<sub>2</sub>).

LT from NIOSH: 0.5 ppm (as Cl<sub>2</sub>).

NIOSH STEL: 1.0 ppm (as Cl<sub>2</sub>).

OSHA PEL (maximum value): 1.0 ppm (as Cl<sub>2</sub>).

AIHA STEL: 5.8 ppm (as NaCl).

**Biological indicators:** Not applicable.

**Measures of engineering control:** Handling the product in a location with good natural or mechanical ventilation, in order to keep the concentration of vapors / dust below the tolerance limit. Promote mechanical ventilation and a direct exhaust system to the outside environment. These measures help to reduce product exposure. It is recommended to make emergency showers and eye washers available in the work area. Engineering control measures are the most effective in reducing product exposure.

### Appropriate personal protective equipment

**Protection for the eyes and face:** Splash protective glasses, and in extreme cases, face protection.

**Skin and body protection:** PVC or rubber apron, antacid clothing (PVC or similar material) and rubber or PVC boots.

**Respiratory protection:** Mask (full face or semi-facial) with acid gas filter, full face mask with air line or autonomous set of breathable air.

**Hand protection:** Waterproof rubber or PVC gloves.

**Special precautions:** Analyze the location of the activity previously and the risks involved, and only then, define the mandatory mitigation measures.

## 9. - PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Liquid, yellow color.

**Odor:** Pungent, penetrating and irritating.

**pH:** >12.

**Melting point:** Not applicable.

**Boiling point:** 110.0°C (to 760 mmHg).

**Freezing point:** -6 ° C **Critical temperature:** Not applicable.

**Flash point:** Not applicable.

**Explosivity:** Non-explosive

**Evaporation rate:** Not available.

**Lower and upper flammability limit:** Non-flammable product.

**Vapor pressure:** 25 hPa (20 ° C)

**Vapor density:** Not available.

**Relative density:** 1.20 g / cm<sup>3</sup> (liquid at 20 ° C).

**Solubility in water:** Miscible.

**Solubility in solvents:** Not available.

**Autoignition temperature:** Non-flammable product.



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Viscosity: 2.6 mPa.s (20 ° C)

## 10. - STABILITY AND REACTIVITY

**Chemical stability:** In normal use conditions , is stable.

**Reactivity:** Reacts in the presence of oxidizing and reducing products (e.g. sulfites).

**Possibility of hazardous reactions:** In contact with metals, it releases oxygen. Under the action of sunlight, it releases oxygen. Reacts violently with ammonia and products containing it, forming irritating and toxic vapors. Reacts with acids, releasing irritating chlorine gas.

**Conditions to be avoided:** High temperatures and contact with metals and incompatible materials and substances.

**Materials or incompatible substances:** Concrete, metals, oxidizing and reducing substances.

**Hazardous decomposition products:** It decomposes into hypochlorous acid, chlorine, hydrochloric acid, sodium chlorate, sodium chloride and oxygen, depending on temperature, pH, contact time, and the materials and substances present.

## 11. - TOXICOLOGICAL INFORMATION

**Information according to the different manners of exposure**

**Ingestion:** This type of exposure is not common, but if it occurs it will cause irritation, corrosion in the gastrointestinal tract, pain and vomiting.

**Inhalation:** Cough, suffocation and irritation.

**Skin contact:** It is irritating and corrosive and can lead to dermatitis.

**Eye contact:** Pain, irritation, which can lead to blindness.

**Acute Toxicity:**

**Ingestion:** Stomach pains and vomiting.

**Inhalation:** Pain in the respiratory tract and pulmonary edema.

**Skin contact:** Dermatitis advancing to the formation of wounds.

**Eye contact:** Blindness.

**Chronic toxicity:** Not awareness.

**Acute Toxicity:** Not awareness.

**Main symptoms:** Not known.

**Substances which may cause interaction:** Not available.

**Additives:** Not available.

**Potential:** Oxidizing and reducing substances.

**Synergy:** Not available.

## 12. - ECOLOGICAL INFORMATION

**Environmental effects, behaviors and impacts of ecotoxicity product.**

Hypochlorite is not subject to biodegradation, but it is degraded by the action of sunlight, heat and the action of substances normally present in the soil. Reacts with organic material in the water.

**Persistence and degradability:** React with organic material in the water. Increases the COD of water. In laboratory tests, the hypochlorite showed mild to moderate toxicity to aquatic organisms. It is strongly alkaline, and if it is poured over water, there will be an increase in pH. Some species of aquatic organisms cannot resist liquid media with a pH above 9.

**Bio accumulative potential:** Hypochlorite does not bioaccumulate in organisms.

**Mobility in soil:** Due to its high pH, it can penetrate the soil and reach underground layers.

**Other adverse effects:** Species rats - oral administration (LD50): 8.91 g/kg.

## 13. - CONSIDERATION ON THE FINAL DISPOSAL

**Recommended methods for final destination:**

The treatment and disposal of product wastes must be carried out in an appropriate environment, by people trained with the use of special equipment and the recommended PPEs to avoid contact with the product, its vapors or mists. Leaks must be contained and collected for later disposal after neutralization.

**Product:**

Ensure that all Federal, State and local agencies receive appropriate notices of spills and disposal methods. CONAMA Resolution 005/1993, Law No. 12,305, of August 2, 2010 (National Policy on Solid Waste).



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**Waste of products:**

Please consult environmental regulatory agencies for counselling on the acceptable disposal practices. Please contact the relevant local authorities. It can be incinerated when in compliance with local regulations. Or dispose of at an approved chemical waste landfill.

**- Used Package:**

Empty packages must be drained and covered before handling and transport operations. If the packaging is not conveniently washed and decontaminated, it is considered to contain product.

## 14. - TRANSPORT INFORMATION

### National and International Regulations

**Land:**

Resolution No. 5232 of as Wednesday, December 14, 2016 of the National Land Transport Agency (ANTT), *Approves the Supplementary Instructions to the Regulation for the Land Transportation of Dangerous Products and their modifications.*

**UN Number:** 1791.

**Appropriate name for shipment:** HYPOCHLORITE, SOLUTION.

**Risk class:** 8.

**Risk number:** 80.

**Packaging group:** II -

**Waterway:**

DPC - Directorate of Ports and Coasts (Transport in Brazilian waters) Maritime Authority Standards (NORMAM) NORMAM 01 / DPC: Vessels Employed in Open Sea Navigation

**UN Number:** 1791.

**Appropriate name for shipment:** HYPOCHLORITE, SOLUTION.

**Risk class:** 8.

**Risk number:** 80.

**Packaging group:** II -

**Air:**

ANAC - Civil Aviation National Agency - Resolution No. 129 of as 8 January, 2009

RBAC No. 175 - (BRAZILIAN CIVIL AVIATION REGULATION) - TRANSPORT OF DANGEROUS MATERIALS IN CIVIL AIRCRAFT

IS No. 175-001 - SUPPLEMENTARY INSTRUCTION - IS

ICAO - "International Civil Aviation Organization" - Doc 9284-NA / 905

IATA - "International Air Transport Association" Dangerous Goods Regulation (DGR)

**UN Number:** 1791.

**Appropriate name for shipment:** HYPOCHLORITE, SOLUTION.

**Risk class:** 8.

**Risk number:** 80.

**Packaging group:** II -

## 15. - INFORMATION ON THE REGULATIONS

**Specific regulations for the chemicals:**

Federal Decree No. 2,657, of as July 3, 1998; Standard ABNT-NBR 14725: 2014;

Ordinance No. 229, of as May 24, 2011 - Amends Regulatory Standard No. 26

## 16. - OTHER INFORMATION

The information in this sheet corresponds to the current status of our knowledge and our product experience and is not exhaustive. Applies to the product under the conditions specified, unless mention otherwise. In case of combinations or mixtures, make sure that no new hazards can appear. This information does not exempt, in any case, the user of the product from respecting the all legislative, regulatory and administrative texts related to the product, safety, hygiene and protection of human and environmental health.

**Bibliographical References:**





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