



SAFETY DATA SHEET FOR CHEMICALS  
MSDS

**CAUSTIC SODA SOLUTION 49/50%**

REVISION DATE: 5/17/2018

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

**Product name:** Sodium hydroxide solution 49/ 50%.

**Internal Code of product identification:** 127.01.0.

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

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

**Company telephone** (11) 3821-7000 (PBX system) - (11) 2481-3355.

**Emergency call numbers:** SUATRANS - COTEC - Environmental Emergency.

DDG (0800) 0111-767 - (0800) 7071-767 - 24 HOURS.

193 - Firefighters.

**Main recommended uses for the substance:** Industries of paper/ cardboard, soap and detergents, adhesives, beverages, food, pharmaceuticals, oils and greases, ceramics, rubber, tannery, electroplating, laundries, mining the chemical industry in general.

**2. - HAZARDS IDENTIFICATION**

**Substances classification**

Corrosive to metals, Category 1,

Acute toxicity - Oral, Category 3,

Acute toxicity - Dermal, category 4, Skin corrosion / irritation,  
category 1A,

Serious eye damage / eye irritation - Category 1,


Sensitization to the skin, Category 1,

Aspiration hazard, Category 2,

Dangerous to the aquatic environment- Acute, Category 3,

Toxicity to organs - specific targets - Single Exposure - Category 1,

**GHS labeling elements, including precautionary phrases:**

LABELING ELEMENTS	DATA
Product identification and supplier emergency phone.	Commercial Name: CAUSTIC SODA SOLUTION 49/50%. Synonym: SODIUM HYDROXIDE, 49/50% SOLUTION. Emergency call number: SUATRANS - COTEC - Environmental Emergency. DDG (0800) 0111-767 - (0800) 7071-767 - 24 HOURS.
Chemical composition	49/50% NaOH.
Hazard pictogram	
Warning words	DANGER
Hazard phrase	H290 - May be corrosive to metals. H301 - Toxic if swallowed. H305- Can be harmful if swallowed and penetrate into the respiratory tracts. H312 - harmful in contact with skin. H314 - Causes severe skin burn and eye damage. H317 - May cause allergic skin reactions. H318 - Causes serious eye damage. H370 - Causes damage to the organs of the respiratory system. H402 - Harmful to aquatic organisms.
Caution Phrases	P260 - No inhaling dusts, fumes, gases, vapors/fumes and aerosols. P261 - Avoid inhaling vapors and mists. P273 - Avoid to release for the environment. P280 - Use protective gloves/protective clothing/eye protection/face shield. P301 + P310- IN CASE OF INGESTION: Please Immediately contact a TOXICOLOGICAL INFORMATION CENTER/physician.



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	<p>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.</p> <p>P304 + P340- 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.</p> <p>P305 + P351 + P338 - IN CASE OF EYE CONTACT: Rinse thoroughly with a water for several minutes. If contact lenses are used, remove them if it is easy. Continue rinsing.</p> <p>P405 - Store in a place locked with a key.</p> <p>P501 - discarding the contents and/ or container in accordance with the local regulatory.</p>
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**Other hazards which do not result in classification:** Reacts violently with acids strong.

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

**Substance:** NaOH (sodium hydroxide), 49/50% solution.

**Chemical or common name:** caustic soda solution.

**Synonym:** Caustic soda (NaOH).

**Composition:** Caustic soda at 49/50% (mass / mass).

**CAS Registration No.:** 1310-73-2

**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. Please contact a TOXICOLOGICAL INFORMATION CENTER/physician. Take this MSDS.

**Skin contact:** Remove immediately all contaminated clothing. Rinsing the skin with water in abundance. Please contact a TOXICOLOGICAL INFORMATION CENTER/physician. Take this MSDS.

**Eye contact:** Rinse thoroughly with water for several minutes. If using contact lenses, remove them if possible. Continue rinsing. Please Immediately contact a TOXICOLOGICAL INFORMATION CENTER/physician. Take this MSDS.

**Ingestion:** Corrosive product. If swallowed, do not induce vomiting. Dilute immediately, providing the victim with large quantities of water. If spontaneous vomiting occurs, provide additional water and keep the victim in ventilated area. Please Immediately contact a TOXICOLOGICAL INFORMATION CENTER/physician. Take this MSDS.

**Symptoms and effects most important , acute or delay:** Toxic If ingested. Ingestion causes severe burns in the mucous membranes of the mouth, throat, esophagus and stomach. Harmful in contact with the skin. Causes severe skin burns with the possibility of tissue destruction. They cause serious eye injuries with pain, lacrimation, and can lead to blindness. It can cause itching and dermatitis. It can cause coughing and even chemical pneumonia.

**Notes to the physician:** Avoid contact with the product to help the victim. If necessary, symptomatic treatment should include, above all, supportive measures such as correction of hydro electrolytic, metabolic disorders, as well as respiratory assistance. In case of contact with the skin and/or eyes, do not rub the affected parts.

### 5. - FIRE FIGHTING MEASURES

**Extinguishing measures appropriate:** CO<sub>2</sub> or dry chemical powder compatible.

**Not recommended:** Direct water jet.

**Specific mixture or substance hazards:** Combustion of the chemical product or its packaging may form irritating and toxic gases. Produces toxic and / or corrosive fumes when heated.

**Firefighting team protection measures:** Special protective equipment for personnel deployed for firefighting. Do not stay in the danger zone without self-contained breathing apparatus suitable for breathing independently of the environment. To avoid contact with the skin, keep a safe distance and wear suitable protective clothing. Refresh closed containers exposed to fire with sprayable water. Suppress (throw) with water jets (fog) the gases, vapors and mists. Avoid to contamination of surface water and groundwater with water to fire fighting.



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

**Personal precautions, protective equipment and emergency procedures:**

**For the staff that is not part of the emergency services:** Isolate leakage and ignition sources preventively. Do not smoke. Do not touch damaged containers or spilled material without using appropriate clothing. Use personal protective equipment as described in section 8.

**For staff of the emergency department:** Use full PPE, splash protection gloves, appropriate protective gloves, PVC or rubber apron, antacid protective clothing (PVC or similar material), rubber or PVC boots and under normal conditions, there is no need, however in special situations, use a mask (semi facial) with a filter against vapors or mists, a full face mask with an airline, or even an autonomous set of breathable air.

**Precautions to the environment:** Avoid to spilled product from reaching water courses and sewage system.

**Methods and materials for containment and cleaning:** Use water fog or vapor suppressing foam to reduce dispersion of vapors. Use natural or spill containment barriers. Collect the spilled product and place in proper containers.

**Disposal:** The waste must be disposed in according with the current environmental legislation. Keep chemicals in their original containers. Do not mix with other wastes. The handling of dirty containers must be conducted in the same way as the product itself. An MSDS must be generated from the generated waste.

**Methods and materials for containment and cleaning:** Neutralize the spilled product with diluted acid or dilute it with plenty of water. Absorb the product with earth, dry sand or other non-combustible material to avoid material damage. Place the absorbed material in appropriate containers and remove them to a safe place. Dispose of the adsorbent material used in the spill in a suitable landfill. For final disposal, proceed according a Section 13 of this MSDS.

**Differences in the measures of large and small leaks**

There is no distinction between the actions of large and small leaks for this product.

#### **7. - HANDLING AND STORAGE**

**Precautions for safe handling:** Handle in a ventilated area or with a general local ventilation / exhaust system. Avoid to formation of vapors or mists. Avoid inhaling the product in case of formation of vapors or mists. Avoid contact with incompatible materials. Using protective gloves/protective clothing/eye protection/face shield as indicated in Section 8.

**Hygiene measures:** Wash the hands and face carefully after handling and before eating, drinking, smoking or using the bathroom. Contaminated clothing must be changed and washed before reuse. Remove contaminated clothing and protective equipment before entering eating areas.

**Conditions for safe storage, including any incompatibilities:**

**Remediation of fire and explosion:** The product is not expected to present a fire or explosion hazard.

**Adequate conditions:** Store in a well-ventilated place, away from sunlight. Keep the container sealed. This product may react, in a dangerous manner, with some incompatible materials as outlined in Section 10.

**Neutralization:** Absorbing spilled product as quickly as possible with inert solids, such as clay or diatomaceous earth. Small spills: To dilute with water in abundance. Wetting the affected area with water for at least 15 minutes. Large quantities: contain large spills with sand or earth. Collecting all the waste in appropriate, labeled containers and dispose of it in accordance with local legislation. Neutralizing the spill carefully with diluted acid (hydrochloric, sulfuric, nitric, phosphoric or acetic) taking precautions regarding the risks of the reaction that may be violent. The area must be washed with plenty of water

**Packaging materials**

**Recommended:** Carbon steel or stainless steel tanks, horizontal or vertical, when their temperature is below 60 ° C.

**Not recommended:** Metals (aluminum, zinc, tin and their alloys), acids, aldehydes and other organic products.

#### **8. - EXPOSURE CONTROLS AND INDIVIDUAL PROTECTION**

**Control parameters.**

**Occupational exposure limits**

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

TLV - C (ACGIH, 2012)

2 mg/m<sup>3</sup> - C:Ceiling.



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**Biological indicators:** Not established.

**Measures of engineering control:** 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. Keeping the concentrations of the substance or mixture in the air below the indicated occupational exposure limits.

**Personal protection measures: Protection for the eyes/face:** Splash protective glasses.

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

**Respiratory protection:** Under normal conditions, there is no need, but in special situations, use a mask (semi facial) with a filter against vapors or mists, a full face mask with an airline, or even an autonomous set of breathable air.

**Thermal hazards:** Using personal protection when handling the heated substance and follow work and break procedures in hot environments.

## 9. - PHYSICAL AND CHEMICAL PROPERTIES

**Aspect (physical condition, shape and color):** Liquid, transparent to off-white cloudy color.

**Odor and odor limit:** Odorless.

**pH:** 14 (0.5% solution).

**Melting point / freezing point:** Not applicable.

**Initial boiling point and boiling temperature range:** 140 °C.

**Flash point:** Not available.

**Evaporation rate:** Not available.

**Flammability (solid; gas):** Not applicable.

**Lower and upper flammability or explosiveness limit:** Non-flammable.

**Vapor pressure:** 13 mmHg at 60° C.

**Vapor density:** Not available.

**Relative density:** 1.5 g/cm<sup>3</sup>

**Solubility:** Completely miscible in water. Soluble in alcohols (ethanol, methanol and glycerol). Insoluble in acetone and ether.

**Partition coefficient - n-octanol / water:** Not available.

**Autoignition temperature:** Not available.

**Decomposition temperature:** Not available.

**Viscosity:** Not available.

**Other information:** Density: 1.520 g / cm<sup>3</sup> at 20 ° C \* \* Information regarding 50% NaOH solution by weight.

## 10. - STABILITY AND REACTIVITY

**Stability and reactivity:** Product stable in normal conditions of temperature and pressure.

**Possibility of hazardous reactions:** Reacts violently with acids, aldehydes, metals and other organic products. Reacts with aluminum, zinc, tin and copper, with corrosion and hydrogen generation, which can form explosive mixtures with air. Consider the existence of an exothermic reaction when diluted in water, alcohol and glycerol.

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

**Incompatible materials:** Aluminum, zinc, tin, copper acids, aldehydes, organic products and water.

**Hazardous decomposition products:** Not dangerous decomposition products are known.

## 11. - TOXICOLOGICAL INFORMATION

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

**Acute Toxicity:**

Toxic if ingested. Harmful in contact with the skin. DL<sub>50</sub> (oral, rats): 140 - 340 mg/kg.

DL<sub>50</sub> (dermal, rabbits): 1350 mg/kg.

**Corrosion/irritation of skin:** Causes severe skin burns with the possibility of tissue destruction.

**Severe ocular lesions/eye irritation:** Causes serious eye damage with pain, tearing, and can lead to blindness.

**Respiratory or skin sensitization:** The product is not expected to present respiratory the potential sensitization.



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May cause allergic skin reactions with itching and dermatitis.

**Germ cell mutagenicity:** The product is not expected to present germ cell skin.

**Carcinogenicity:** The product is not expected to present carcinogenicity.

**Reproductive toxicity:** The product is not expected to present toxicity to reproduction.

**Toxicity to organs - specific targets - single exposure:** Ingestion of the product may cause perforations in the tissues of the mouth, throat, esophagus and stomach.

**Toxicity to organs - specific targets - repeated exposure:** The product is not expected to present toxicity to the specific target organ through repeated or prolonged exposure.

**Aspiration hazard:** It can be harmful if swallowed and can cause perforations in the tissues of the mouth, throat, esophagus and stomach, and harmful if it penetrates the respiratory tract and can cause coughing and even chemical pneumonia.

## 12. - ECOLOGICAL INFORMATION

### Environmental effects, behaviors and product impacts

**Ecotoxicity:** Harmful to aquatic organisms. CE<sub>50</sub> (Ceriodaphnia dubia, 48h): 40.4 mg/L.

**Persistence and degradability:** Due to the lack of data, it is expected that the product will persist and not be quickly degraded.

**Bio accumulative potential:** Accumulation in organisms is not expected aquatic.

**Mobility in soil:** Not determined.

**Other adverse effects:** Caustic soda is harmful to aquatic life by increasing the pH. Most aquatic species cannot tolerate pH in the range of 12 to 14 regardless of time. This increase in pH can also cause the release of metal salts, such as aluminum, which may also contribute to the exposed toxicity.

## 13. - CONSIDERATION ON THE 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 PPE's 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).

### 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 December 14, 2016 of the National Land Transportation Agency (ANTT), *Approves the Complementary Instructions to the Regulation of Land Transportation of Dangerous Products and its amendments.*

**ONU number:** 1824

**Appropriate name for shipment:** SODIUM HYDROXIDE, SOLUTION

**Risk class:** 8

**Risk subclass:** -

**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

**ONU number:** 1823



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**Risk class:** 8

**Risk subclass:** -

**Risk number:** 80

**Packaging group:** II

**EmS:** F-A, S-B

**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)

**ONU number:** 1823

**Appropriate name for shipment:** SODIUM HYDROXIDE, SOLUTION

**Risk class:** 8

**Risk subclass:** -

**Risk number:** 80

**Packaging group:** II

**Dangerous to the Environment:** The product is not considered a marine pollutant. The extreme pH of the product can cause changes in the environmental compartments causing damage to the organisms.

## 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:**

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIALS HYGIENISTS. TLVs® and BEIs®: Based on the "Documentation" dos Limites de Exposição Ocupacional (TLVs®) for Chemical Substances and Physical Agents & Biological Exposure Indices (BEIs®). Brazilian Association of Occupational Hygienists Translation. São Paulo, 2016.

BRAZIL. MINISTRY OF LABOR AND EMPLOYMENT (MTE) Regulatory Standard (NR) No. 7: Programa de controle médico de saúde ocupacional. Brasília, DF. Jun. 1978.

BRAZIL. MINISTRY OF LABOR AND EMPLOYMENT (MTE) Regulatory Standard (NR) No. 15: Atividades e operações insalubres. Brasília, DF. Jun. 1978.

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< <http://www.epa.gov/oppt/exposure/pubs/episuite.htm>>. Access on: January, 2018

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NITE-GHS JAPAN - NATIONAL INSTITUTE OF TECHNOLOGY AND EVALUATION. Available at: [http://www.safe.nite.go.jp/english/ghs\\_index.html](http://www.safe.nite.go.jp/english/ghs_index.html)>. Access on: January, 2018

U.S. ENVIRONMENTAL PROTECTION AGENCY. ECOSAR - Ecological Structure-Activity Relationships. Versão 1.11. Available at: <http://www.epa.gov/oppt/newchems/tools/21ecosar.htm>>. Access on: January, 2018