



# 50% SODIUM HYDROXIDE SOLUTION

## Safety Data Sheet

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

**Product/Chemical Name:** Sodium Hydroxide Solution

**Chemical Family:** Inorganic alkalis

**General Use:** Drinking water treatment, papermaking and other manufacturing applications

**Company Information:**

GAC Chemical Corporation

34 Kidder Point Road

Searsport, Maine 04974 U.S.A.

Phone: 207-548-2525    FAX: 207-548-2891    Toll Free: 800-266-5155

**Emergency Phone:**

1-800-424-9300 Chemtrec (USA)

### SECTION 2. HAZARDS IDENTIFICATION



**Signal Word:** DANGER

**Hazard Statements:** Causes severe skin burns and eye damage.  
Harmful if swallowed or inhaled.  
May be corrosive to metals

**Precautionary Statements:** Do not get in eyes, on skin or on clothing.  
Wear gloves, eye and face protection and protective clothing.  
Do not breathe mist, vapors, or spray.  
Avoid release to the environment  
IF SWALLOWED: Rinse mouth. Do not induce vomiting  
IF ON SKIN: Remove immediately all contaminated clothing. Rinse skin with shower.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Get immediate medical attention.  
Collect spillage.

Store in a closed container.

Dispose of container in accordance with local, state, province and federal regulations.

### SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Substance** Sodium Hydroxide Solution

<b>Chemical Name:</b>	Sodium Hydroxide	CAS#: 1310-73-2	(49 - 51%)
	Sodium Chloride	CAS#: 7647-14-5	(<1%)
	Water	CAS#: 7732-18-5	(49 - 51%)

**Synonyms:** Caustic Soda, Caustic Alkali, Lye, Caustic Soda Liquid 50%, Soda Lye, Liquid Caustic, Sodium Hydrate

**Impurities:** NA. No impurities or additives which are themselves classified and which contribute to the classification of the substance.

### SECTION 4. FIRST AID MEASURES

**Inhalation of mist or liquid:**

Remove person from source of exposure to fresh air. If breathing is difficult, administer oxygen. If not breathing, start CPR. Get medical attention immediately.

**Skin contact:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. Get medical attention immediately.

**Eye contact:**

Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention immediately.

**Ingestion:**

If fully conscious, drink as much water as can be tolerated. DO NOT induce vomiting. DO NOT neutralize with acidic juices. Get medical attention immediately.

**Most Important Symptoms/Effects:**

**Inhalation:**

Mists may severely irritate nose, throat, lungs, mucous membranes, respiratory tract. Mists may cause sore throat, coughing, sneezing, labored breathing, burning sensation.

**Skin contact:**

Severely corrosive to the skin. Causes severe burns.

**Eye contact:**

Severely corrosive to the eyes. Causes eye burns. Direct contact with the eyes can cause irreversible damage, including blindness.

**Ingestion:**

Can cause chemical burns of the mouth, throat, gastrointestinal tract. May cause pain, nausea, vomiting.

## SECTION 5. FIRE FIGHTING MEASURES

### **Flammability:**

Product is not flammable and will not burn.

### **Suitable Extinguishing Media:**

For fires in area, use appropriate extinguishing media.

### **Specific Hazards Arising from the Chemical:**

In a fire, dried product can decompose at elevated temperatures and may release toxic fumes/vapors. Exposure to products of decomposition during a fire may be hazardous. Spilled sodium hydroxide solution can cause slippery footing.

### **Special Protective Equipment and Precautions for Firefighters:**

Wear full protective fire fighting clothing including NIOSH approved self contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### **General:**

Site specific procedures to address accidental spills are necessary as dictated by facility design, location, staffing, containment structures, and regulatory requirements. Consult engineers if needed.

### **Personal Precautions, Protective Equipment and Emergency Procedures:**

In the event of a spill, clear unnecessary personnel from spill area. If direct contact with spilled material is likely, use personal protective equipment recommended in Section 8. Maintain adequate ventilation. Spilled material will be slippery.

### **Methods and Materials for Containment and Cleaning Up:**

Shut off source of leak if safe to do so. Manage spill using containment structures or inert materials and collect for reuse. Product not reused can be neutralized using dry citric acid or weak sulfuric acid. Neutralized residue can be swept up or rinsed down with water and captured using absorbent materials for disposal in accordance with local, state, province, and federal regulations. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

## SECTION 7. HANDLING AND STORAGE

### **Incompatible Chemicals:**

Avoid contact with acids and acidic (low pH) materials.

### **Containment:**

To minimize the possibility of a release into the environment and contact with other incompatible chemicals, storage tanks and containers should have a dedicated liquid tight secondary containment system. Consult engineers if needed.

### **General Hygiene:**

Do not eat, drink, take medication or smoke when direct contact is possible.

Always thoroughly wash hands after leaving a work area where contact is possible or has occurred.

**Storage:**

Keep storage tanks and containers closed and contents protected from dust, dirt, and moisture. Clean storage tanks on a regular schedule based on inspection and experience. Have storage tanks, containers, and transfer systems properly labeled for contents. Have procedures for determining product quantity in storage tanks and for accepting deliveries. Use tanks, transfer lines, pumps valves and process instrumentation designed for this material using approved materials of construction. Some materials commonly used are mild steel, stainless steel, some plastics, and FRP. Nonferrous metals and their alloys will be damaged by corrosion. Consult engineers if needed.

**Temperature for Storage:**

Preferred storage temperature range is 20°C-43°C (68°F-110°F). Outside of these temperature ranges optimal product stability and shelf life may be affected.

**Ventilation:**

No special requirements.

**Personal Protection:**

If direct contact with material is likely use personal protective equipment.

<b>SECTION 8. EXPOSURE CONTROL / PERSONAL PROTECTION</b>
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**Exposure Limits****Ingredient:** Sodium Hydroxide Mists/Vapors

<b>OSHA PEL</b>		<b>ACGIH TLV</b>		<b>NIOSH TLV</b>		<b>NIOSH</b>
TWA	STEL	TWA	CEILING	TWA	CEILING	IDLH
2mg/m <sup>3</sup>	none est.	none est.	2mg/m <sup>3</sup>	none est.	2mg/m <sup>3</sup>	10mg/m <sup>3</sup>

**Respiratory - Ventilation:**

Local passive ventilation is typically used. Under normal conditions respiratory protective equipment is not needed. If work requires direct exposure to product mist, use appropriate, NIOSH approved respiratory protection. Consult engineers if necessary.

**Eye - Skin wash:**

Have appropriate eye wash and safety shower stations available in the work area.

**Eyes:**

Use protective eye glasses with side shields/goggles and face shield protection to prevent direct contact.

**Skin:**

Wear impervious pants, jacket, gloves and boots. For spill cleanup, use impervious pants, jacket, gloves, boots, and hardhat. If Sodium Hydroxide mist/vapor are present, wear NIOSH approved respiratory protection.

<b>SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES</b>
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**Appearance:** Liquid, clear to slight haze, colorless to light grey tint.

**Odor:** No odor

**Odor Threshold:** NA

**pH:** 14 as is basis

**Melting/Freeze point-range:** 10°C-12.8°C (50°F-55°F) approx.

**Boiling point-range:** 130°C-143°C (266°F- 289°F) approx.

**Flash point:** NA

**Evaporation rate:** NA

**Flammability:** Not flammable.  
**Upper/lower flammability limits:** NA  
**Vapor pressure:** NA  
**Vapor density:** NA  
**Relative Density (Specific Gravity):** 1.53 S.G. @ 15.6°C (60°F)  
**Water Solubility:** Complete.  
**Partial coefficient: n-octanol/water:** NA  
**Auto ignition:** NA  
**Decomposition temperature:** NA  
**Viscosity:** 75-80 cps @ 20°C (68°F)

## SECTION 10. STABILITY AND REACTIVITY

**Reactivity:**

Reacts violently with strong acids.

**Chemical Stability:**

Product is chemically stable under normal ambient temperature and conditions while stored or used.

**Possibility of Hazardous Reactions:**

Product will not polymerize.

**Conditions to Avoid:**

Avoid freezing. Keep away from incompatibles. Contact with metals (aluminum, zinc, tin) and sodium tetrahydroborate liberates hydrogen gas. Corrosive to aluminum, tin, zinc, copper and most alloys in which they are present including brass and bronze. Corrosive to steels at elevated temperatures above 40°C (104°F).

**Incompatible Materials:**

Oxidizing agents. Acids. Phosphorus. Aluminum. Zinc. Tin. Initiates or catalyzes violent polymerization of acetaldehyde, acrolein or acrylonitrile. Consult engineers if necessary.

**Hazardous Decomposition Products:**

At elevated temperatures toxic fumes/vapors may be released.

## SECTION 11. TOXICOLOGICAL INFORMATION

**Component Analysis - LD50/LC50**

The components of this material have been reviewed in various sources and the following selected endpoints are published:

**Sodium Hydroxide(1310-73-2)**

Oral LD50 Rat 140-340 mg/kg; Dermal LD50 Rabbit 1350 mg/kg

**HEALTH EFFECTS**

**Inhalation - Acute Exposure**

Mists may severely irritate nose, throat, lungs, mucous membranes, respiratory tract. Mists may cause sore throat, coughing, sneezing, labored breathing, burning sensation. Effects will depend on concentration and length of time of exposure.

**Inhalation - Chronic Exposure**

No data available.

**Skin Contact - Acute Exposure**

Severely corrosive to the skin. Causes severe burns.

**Skin Contact - Chronic Exposure**

No data available.

**Eye Contact - Acute Exposure**

Severely corrosive to the eyes. Causes eye burns. Direct contact with the eyes can cause irreversible damage, including blindness.

**Eye Contact - Chronic Exposure**

No data available.

**Ingestion - Acute Exposure**

Can cause chemical burns of the mouth, throat, gastrointestinal tract. May cause pain, nausea, vomiting.

**Ingestion - Chronic Exposure**

No data available.

**Sensitization:**

Not sensitizing

**Carcinogenicity:**

NTP Not listed. IARC Not listed. OSHA Not listed.

**Reproductive Toxicity, Mutagenic or teratogenic effects:**

No known reproductive toxicity, mutagenic or teratogenic effects in animal experiments are known.

<b>SECTION 12. ECOLOGICAL INFORMATION</b>
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**Ecotoxicity (aquatic):****Sodium Hydroxide(1310-73-2)**

**Fish:** 96 Hr LC50 Western Mosquitofish: 125 mg/L; 48 Hr LC50 Bluegill: 99 mg/L

**Invertebrate:** 48 hr EC50 Daphnia magna: 34.59 - 47.13 mg/L

**Persistence and Degradability:**

No information available

**Bioaccumulation Potential:**

This product is not expected to bioaccumulate.

**Mobility in Soil:**

No information available.

**Other Adverse Effects:**

No information available

<b>SECTION 13. DISPOSAL CONSIDERATIONS</b>
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**RCRA Hazardous Waste:** Not listed. Waste product may be D002 under §261.22(a)(2) if the pH >12.5.

**Neutralization:**

Product can be neutralized using dry citric acid or weak sulfuric acid. Neutralized residue can be swept up or rinsed down with water and captured using absorbent materials for reuse or disposal in accordance with local, state, province, and federal regulations.

**Contaminated Packaging:**

Packaging and storage containers that cannot be thoroughly cleaned must be disposed of in accordance with local, state, province, and federal regulations.

#### SECTION 14. TRANSPORTATION INFORMATION

**Land (DOT), Sea (IMDG), Air (ICAO/IATA)**

**Identification Number:** UN1824

**Proper Shipping Name:** Sodium Hydroxide Solution

**Hazard Class:** 8

**Packing Group:** II

**Environmental Hazards:** Marine pollutant: no; Hazardous substance: yes

**Special Precautions:** None known

#### SECTION 15. REGULATORY INFORMATION

**RCRA Hazardous Waste:** Not Listed.

Unused, un-neutralized product may be a Characteristic Waste (D002). Consult engineers if necessary.

**CERCLA Hazardous Substance:** yes

**CERCLA Reportable Quantity (RQ):** 1000 lbs.

**SARA 311/312 Categories:**

**Acute (immediate) health effects:** Yes

**Chronic (delayed) health effects:** No

**Sudden release of pressure hazard:** No

**Reactivity hazard:** Yes

**Fire hazard:** No

**SARA 313 Toxic Chemical Listing:** Not listed

**SARA Extremely Hazardous Substance (EHS):** Not listed

**OSHA Air (29CFR 1910.10000, Table Z-1, Z-1A):** Listed

**OSHA Special Regulated Substance (29CFR 1910):** Not listed

**California Prop 65 Chemical:** No

**United States TSCA Section Inventory Status:** Product exempt or listed on the TSCA Inventory.

**State Regulations:** State specific regulations have not been determined by GAC Chemical Corporation.

Consult engineers if necessary.

#### SECTION 16. OTHER INFORMATION

**NSF/ANSI 60 Drinking Water Treatment Chemicals:**

**Sodium Hydroxide-50%:** Maximum use 100mg/L

**Caustic Soda-50%:** Maximum use 100mg/L

**HMIS Rating:**

Health: 3

Flammability: 0

Reactivity: 1

**NFPA Rating:**

Health: 3

Fire: 0

Reactivity: 1

Special: NA

**Preparatory Statement:**

The information in this Safety Data Sheet (SDS) is correct to the best of our knowledge, information we have available, and belief as of the publication date. The information is designed solely as guidance for handling, storage, transportation, release, and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with other materials or in any process unless specified in the text.

**Date Sources for the SDS:**

Literature, databases, practice, publications, own tests, regulations

**Revision:**

February 2015 replaces all earlier

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