Sodium Hydroxide Solution (50%)

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufacturer:	**Shintech Louisiana, LLC** 3 Greenway Plaza, Suite 1150 Houston, TX 77046 (713) 965-0713
PRODUCT NAME:	**Sodium Hydroxide Solution (50%)**
CAS#:	1310-73-2
Synonyms:	Caustic Soda Liquid 50%, Soda Lye, Lye, Liquid Caustic, Sodium Hydrate
Recommended Use:	Neutralizing agent, industrial cleaner, pulping and bleaching, soap manufacturing
Restrictions on Use:	Restricted to professional users.
CHEMICAL FORMULA:	NaOH

For information regarding a chemical emergency involving a spill or leak, call:

24 — Hour Emergency Contact:

U.S.: 1-800-424-9300 — CHEMTREC
Outside U.S.: 001-703-527-3887

SECTION 2 — HAZARDS IDENTIFICATION

Global Harmonization System (GHS) Classification:

Category 1 Corrosive to Metals

Category 1B Skin corrosion/irritation

Category 1 Serious eye damage/eye irritation

Category 3 Acute toxicity to the aquatic environment

EMERGENCY OVERVIEW

Color:	Colorless
Odor:	Odorless
Physical State:	Liquid
Signal Word:	DANGER

GHS Label Pictograms:

GHS Hazard Statements:

May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. Harmful to aquatic life.

GHS Precautionary Statements:

Prevention: Keep only in original container. Do not breathe dust/fume/gas/mist/vapors/spray. Wash hands and clothing thoroughly after handling. Do not touch eyes. Wear protective gloves/protective clothing/eye protection/face protection.

Response: Absorb spillage to prevent material damage.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF ON SKIN: Take off Immediately all contaminated clothing. Immediately rinse with water for several minutes.

IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

Get emergency medical help immediately.

Specific treatment (see Section 4 on this label).

Wash contaminated clothing before reuse.

Storage: Store in corrosive resistant container with a resistant inner liner. Store locked up.

Disposal: Dispose of contents/container to an approved waste disposal plant in accordance with local, regional, national and international regulations.

POTENTIAL HEALTH EFFECTS:

Inhalation: None identified.

Skin Contact: Brief contact may cause severe skin burns. Symptoms may include pain, severe local redness, and tissue damage.

Eye Contact: Eye contact with Sodium Hydroxide mist or solution usually results in immediate pain and can cause permanent eye damage including blindness.

Ingestion: Ingestion causes immediate, severe pain in the mouth, throat, and stomach as well as diarrhea and vomiting as this product is corrosive to tissue.

SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous ingredients (specific)	Composition wt.%	CAS Number
Water	50	7732-18-5
Sodium Hydroxide	50	1310-73-2

SECTION 4 — FIRST AID MEASURES

GENERAL:	If you feel unwell, seek medical advice (show the label or product container where possible).
INHALATION:	Move to fresh air and keep comfortable for breathing. Get immediate medical assistance.
SKIN CONTACT:	Immediately flush skin with water for at least 30 minutes. Under water remove contaminated clothing, jewelry, and shoes. If irritation persists, repeat flushing. Obtain medical attention immediately. Handle contaminated clothing and shoes in a manner which limits further exposure.
SWALLOWING:	If swallowed, keep respiratory tract clear. Do not induce vomiting. Keep at rest. Obtain medical attention immediately.
EYE CONTACT:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.
MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED	Skin contact may result in irritation, which may not be immediately painful. Eye contact with Sodium Hydroxide mist or solution usually results in immediate pain and can cause permanent eye damage including blindness. Ingestion causes immediate, severe pain in the mouth, throat, and stomach. All tissues which come in contact with this chemical may be damaged.

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point	No data available.
Flammable Limits (Lower)	No data available.
Flammable Limits (Upper)	No data available.
Auto Ignition Temperature	No data available.
Combustion and Thermal Decomposition Products	Not applicable.
Rate of Burning	No data available.
Explosive Power	No data available.
Sensitivity to Mechanical Impact	No data available.

FIRE AND EXPLOSIVE HAZARDS:	Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Containers may explode when heated.
EXTINGUISHING MEDIA and UNSUITABLE MEDIA:	If exposed to fire from another source, use suitable extinguishing agent for that fire. Do not use water jet as this may spread the fire.
HAZARDOUS THERMAL DECOMPOSITION PRODUCTS:	Corrosives in contact with metals may evolve flammable hydrogen gas.
FIRE FIGHTING PROCEDURES:	Keep people away. Isolate fire and deny unnecessary entry. Remove containers from fire, if possible, and cool containers with water. When material comes in contact with water, large amounts of heat may be generated and ignite adjacent combustible materials. This material does not burn. Fight fire for other material that is burning.
FIRE FIGHTING PROTECTIVE EQUIPMENT:	Use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. If protective equipment is not available or not used, fight fire from a protected location or safe distance.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Methods for Cleaning Up:	Contain spilled material if possible. Small spills: Dilute with water and neutralize with dilute acid; absorb and collect. Large spills: Dike the area to contain the spill. Collect in suitable and properly labeled containers. Attempt to neutralize by adding material such as Acetic acid. See Section 13, Disposal Considerations, for additional information.
Personal Precautions:	Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Refer to Section 7, Handling, for additional precautionary measures. Keep upwind of spill. Ventilate area of leak or spill. See Section 10 for more specific information. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions:	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING:

Corrosive to metals. Corrosive to aluminum, zinc, and tin. Contact with some metals may generate hydrogen gas, which is explosive and flammable. Causes serious skin and eye damage. When handling use Wide-brimmed hat; safety goggles with rubber side shields; tightfitting cotton clothing; rubber gloves under shirt cuffs; rubber boots and apron. Slowly absorbs carbon dioxide from the air to give solid products as crusts or precipitates. Water soluble. Dilution with water liberates heat, possibly enough to cause local boiling and spattering. Containers may explode when heated.

PRECAUTIONS TO BE TAKEN IN STORAGE:

Keep container closed. Keep container locked up. Store in corrosive resistant container with a resistant inner liner. Storage class 8A: combustible, corrosive hazardous materials.

OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE:

Use within 24 hours after opening.

Suitable Containers and Packing: Corrosive-resistant containers.
Suitable Materials for Containers:
Unsuitable Materials for Containers: Zinc, Aluminum, Brass, or Tin

SECTION 8 - EXPOSURE CONTROL / PERSONAL PROTECTION

Components with Workplace Control Parameters:

Component	CAS Number	Value Type (Form of Exposure)	Control Parameters/ Permissible Concentration	Basis
Sodium Hydroxide	1310-73-2	TLV TWA	2 mg/m^3	ACGIH
		CEIL	2 mg/m^3	NIOSH
		PEL TWA	2 mg/m^3	OSHA

Biological Occupational Exposure Limits

Component	CAS Number	Control Parameters	Biological Specimen	Sampling Time	Permissible Concentration	Basis
No data available for this material.						

VENTILATION/ENGINEERING CONTROLS:

Local Exhaust: Local exhaust ventilation should be applied wherever there is an incidence of point source emissions or dispersion of regulated contaminants in the work area. Ventilation control of the contaminant as close to its point of generation is both the most economical and safest method to minimize personnel exposure to airborne contaminants. The most effective measures are the total enclosure of processes and the mechanization of handling procedures to prevent all personal contact.

Mechanical (general): See SPECIAL.

Special: Local exhaust ventilation should be applied wherever vapor or mist may be generated, to control airborne levels below the exposure guidelines. The most effective measures are the total enclosure of processes and the mechanization of handling procedures to prevent all personal contact. Smoking should be prohibited in areas in which sodium hydroxide solution is stored or handled.

PERSONAL PROTECTION:

Respiratory Protection: Wear a supplied-air respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a respirator, such as a Full-Face Supplied-Air Respirator, that provides protection when working with this material if exposure to harmful levels of airborne material may occur. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA). When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable).

Skin Protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear flame retardant, anti-static protective

clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots, and gloves. Wear a tightly closed chemical protection suit when appropriate.

Eye Protection: Wear tightly fitting safety goggles. Select in accordance with the current CSA standard Z94.3, "Industrial Eye and Face Protection", and any provincial regulations, local bylaws or guidelines.

Other Protective Equipment: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Alternate Name	Caustic
Chemical Name	Sodium Hydroxide
Chemical Family	Water Solution
Molecular Formula	NaOH
Molecular Weight	40 g/mol
Appearance	Colorless
Odor	Odorless
pH	Strong Basic
% Volatile By Volume	No data available
Vapor Pressure	1.5 mmHg @ 20°C *Literature*
Vapor Density (AIR=1)	Not applicable
Boiling Point	145°C (293°F) *Literature*
Freezing/Melting Point	14°C (57°F) *Literature*
Solubility (WATER) 68°F	Water solution
Specific Gravity	1.52 *Literature*
Critical Temperature	No data available
Viscosity	0.35 St @ 25° *Calculated*
Coefficient Of Oil/Water Distribution	No data available

SECTION 10 – STABILITY AND REACTIVITY

Stability:	The product is stable under normal conditions.
Conditions of Chemical Instability:	Avoid moisture. Product absorbs carbon dioxide from the air. Avoid mixing with strong acids, or other incompatible materials. Will react with some metals and create a flammable hydrogen gas.
Incompatibility (materials to avoid):	Strongly basic. This solution reacts readily with various reducing sugars (i.e. fructose, galactose, maltose, dry whey solids) to produce carbon monoxide (CO). Take precautions including monitoring the tank atmosphere for CO to ensure safety of personnel before vessel entry. Avoid contact with acids, glycols, organic nitro compounds, and halogenated organics. Flammable hydrogen may be generated from contact with metals such as zinc, aluminum, tin, or brass.
Hazardous Decomposition Products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Attacks aluminum and zinc with evolution of hydrogen, a flammable gas.
Hazardous Polymerization:	Under normal conditions of storage and use, hazardous polymerization will not occur. May initiate polymerization in polymerizable organic materials.
Conditions of Reactivity:	Strongly basic. Reacts rapidly and exothermically with organic and inorganic acids, with organic and inorganic acid anhydrides, including oxides of nonmetals such as sulfur dioxide, sulfur trioxide, phosphorus trioxide, phosphorus pentaoxide, and with organic and inorganic acid chlorides.

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute Toxicity: **Very corrosive to skin and eyes. May cause serious eye damage.**

Inhalation:	Inhalation will not likely occur under normal use conditions. No data available for this material.
Ingestion:	Not expected to be hazardous by ingestion. No data available for this material.

Skin Contact: Brief contact may cause severe skin burns.
Symptoms may include pain, severe local redness, and tissue damage.
Test Method: Skin (Rabbit)
Exposure time: 24 hr
Remarks: Causes burns
Method: Regulation (EC) No 1272/2008, Annex VI)

Eye Contact: Eye contact will cause irritation and may cause severe burns and possible blindness.
Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Germ Cell Mutagenicity: Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity: Single-exposure Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity: Repeated-exposure Based on available data, the classification criteria are not met.

Carcinogenicity: **IARC**: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Sodium Hydroxide: (1310-73-2) IDLH: 10 mg/m^3

SECTION 12 – ECOLOGICAL INFORMATION

May be toxic to water organisms in high concentrations. Causes pH change.

Fish Toxicity: LC50, rainbow trout (Oncorhynchus mykiss): 45.5 mg/L/96hr

Invertebrate Toxicity: LC50, water flea Daphnia magna: 40-240 mg/L

Algal Toxicity: EC50 - Photobacterium phosphoreum - 22 mg/l/15 min

Phytotoxicity: EC50 - Photobacterium phosphoreum - 22 mg/l/15 min

Biodegradation: Biodegradation is not applicable.

Persistence: Not applicable.

Bioconcentration: No bioconcentration is expected because of the relatively high water solubility.

Mobility in Soil: Potential for mobility in soil is very high (Koc between 0 and 50).

SECTION 13 – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:

Prevent waste from contaminating the surrounding environment. Keep personnel away. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with federal, provincial, and local regulations. Do not attempt to dispose of residual or unused quantities. This product is NOT suitable for disposal by either landfill or via municipal sewers, drains, natural systems, or rivers. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility. If necessary, call your local supplier for assistance.

SECTION 14 – TRANSPORT INFORMATION

Proper Shipping Name: **Sodium Hydroxide Solution**

Hazard Class:	Identification No.:	Product RQ:
US DOT/ IATA-DGR / TOG / IMO / IMDG: **Class**: Class 8 – Corrosive **Proper Shipping Name**: Sodium Hydroxide Solution **Packing group:** II **Labels:** **Marine Pollutant:** No	UN1824	Sodium Hydroxide (1000 lbs)

Shipping Label(s):

Placard (when required):

Additional Shipping Description:

EMS-No: F-A, S-B

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15 – REGULATORY INFORMATION

The following selected regulatory requirements may apply to this product. Not all such requirements are identified. Users of this product are solely responsible for compliance with all applicable federal, provincial, and local regulations.

USA Classification

United States inventory (TSCA 8b): All components are either listed or exempted.

Clean Air Act (CAA) 112 regulated flammable substances: All components are either listed or exempted.

SARA Title III

Section 302 and 304 of the Act; Extremely Hazardous Substances (40 CFR 355)

Component	CAS No.	TPQ (lbs)	Reportable Quantity (lbs)
No products were found.			

Section 311/312 Hazard Categorization (40 CFR 370)

Immediate (Acute) Health Hazard	**Yes**
Delayed (Chronic) Health Hazard	**No**
Fire Hazard	**No**
Reactive Hazard	**Yes**
Sudden Release of Pressure Hazard	**No**

Section 313 Toxic Chemicals (40 CFR 372.65)

Component	CAS No.	wt%
No products were found.		

CERCLA

Sections 102(a) Hazardous Substances (40 CFR 302.4)

Component	CAS No.	wt%	Reportable Quantity (lbs)
Sodium Hydroxide	1310-73-2	50	1000

USA OSHA

Part 1910 Subpart Z Toxic and Hazardous Substances (29 CFR 1910)

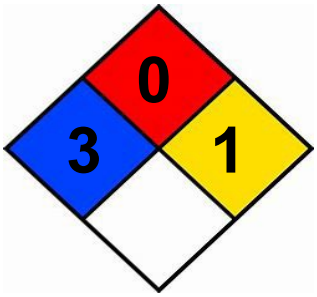
Component	CAS No.	OSHA PEL TWA (PPM)	OSHA PEL STEL (PPM)	Citation
Sodium Hydroxide	1310-73-2	2 mg/m^3		See 29 CFR 1910.1051(c)

California Proposition 65

WARNING! This product and its ingredients are not listed, but it may contain impurities/trace elements of Nickel known to the State of California to cause cancer as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act. For more information go to www.P65Warnings.ca.gov.

SECTION 16 – OTHER INFORMATION

NFPA Classification:



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Shintech Louisiana, LLC urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as to the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product.

Revisions:

- **January 2011 - no information changed in this MSDS. This MSDS was reviewed for accuracy.**
- **April 2014 – The MSDS was updated to follow new Global Harmonization Guidelines. The MSDS are now called Safety Data Sheets (SDS).**
- **January 2016 – Corrections to improve nomenclature and technical data.**
- **February 2020 – No information changed in this SDS. This SDS was reviewed for accuracy.**
- **July 2022 – Section 2 was updated to include the GHS Classification Category 1 – Corrosive to Metals and Category 4 – Acute toxicity - inhalation. Section 2 - GHS Hazard Statements have been revised to indicate that this material is harmful if inhaled.**
- **November 2022 – Section 2 GHS Classifications and Hazard Statements updated.**
- **January 2023 – Removal of health hazard pictogram based on updated hazard statements.**
- **August 2024 - Updated layout, safety, toxicological, and transportation identification.**
- **December 2024 – Updated GHS classification statements, handling and storage, transportation information, and Prop 65 Warning.**

SDS Status: *Revision Date:* *12/05/2024*
Supersedes: *08/21/2024*