Material Safety Data Sheet

MSDS Revision Date: 06-03-2011

BRENNTAG

1. Product and Company Identification

Product Identity: Sodium Hydroxide 50% Chemical Formula: NaOH in solution Molecular Weight: 40.00	**Technical Information: 270-830-1200** **Emergency Number: 800-424-9300 (CHEMTREC)** **Emergency Number: 703-5273887 (International)**
Synonyms: Caustic soda solution; Lye solution; sodium hydroxide liquid; sodium hydrate solution, sodium hydroxide concentrate solution, Sodium lye	
Company: DISTRIBUTED BY BRENNTAG	

Brenntag Great Lakes, LLC. 4420 N. Harley Davidson Ave. Wauwatosa, WI 53225	Brenntag Mid-South, Inc. 1405 Hwy 136 W Henderson, KY 42420	Brenntag Northeast, Inc. 81 West Huller Lane Reading, PA 19605	Brenntag Specialties, Inc. 1000 Coolidge Street South Plainfield, NJ 07080
Brenntag Southeast, Inc. 2000 East Pettigrew Street Durham, NC 27703	Brenntag Southwest, Inc. 610 Fisher Road Longview, TX 75604	Brenntag Pacific, Inc. 10747 Patterson Place Santa Fe Springs, CA 90670	Coastal Chemical Co., LLC PO Box 820 Abbeville, LA 70511

2. Hazards Identification

Emergency Overview

WARNING!

DANGER!

POISON!

CORROSIVE, CAUSES SEVERE BURNS TO SKIN, EYES, RESPIRATORY TRACT, AND GASTROINTESTINAL TRACT. MATERIAL IS EXTREMELY DESTRUCTIVE TO ALL BODY TISSUES. CAUSES PERMANENT EYE DAMAGE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED

Potential Health Effects

Inhalation: Severe irritant. Effects from inhalation of mist vary from mild irritation to serious damage of the upper respiratory tract, depending on the severity of exposure. Symptoms may include sneezing, sore throat and runny nose. Severe pneumonitis may occur.

Ingestion: Toxic! Corrosive to mucous membranes and may cause perforation of the esophagus and stomach. Abdominal pain, nausea, vomiting, general gastro-intestinal upset can be expected.

BRENNTAG

Skin Contact: Corrosive! Swallowing may cause severe burns of mouth, throat, and stomach. Severe scarring of tissue and death may occur. Symptoms may include bleeding, vomiting, diarrhea, fall in blood pressure. Damage may appear days after exposure.

Eye Contact: Corrosive! Irritant, possibly corrosive to eye tissue. Causes irritation of eyes with tearing, redness, and impaired vision are symptoms. Greater exposures cause severe burns with possible blindness resulting.

3. Composition/Information on Ingredients

CAS#	Chemical Name	Percent by Weight
1310-73-2	Sodium Hydroxide	50%
7732-18-5	Water	50%

4. First Aid Measures

Inhalation: If a person breathes in chemical, remove exposed person promptly to fresh air. If breathing has stopped, clear the victim's airway and perform artificial respiration which may be supplemented by the use of a bag-mask respirator, or a manually-triggered, oxygen supply. Oxygen should be provided for a person having difficulty breathing (but only administered by an authorized individual) until the person is able to breath easily by themselves. Keep the affected person warm and at rest. Get medical attention as soon as possible.

Ingestion: If swallowed, wash out mouth with water and give large amounts of water to drink. Do not induce vomiting immediately, but only by a qualified person. If vomiting occurs spontaneously, keep airway open. Give more water when vomiting stops. Get medical attention immediately. Never give anything by mouth to an unconscious person.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing and shoes before reuse. Get medical attention immediately.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

NOTE TO PHYSICIAN: Perform endosocopy in all cases of suspected sodium hydroxide ingestion. In cases of severe esophageal corrosion, the use of therapeutic doses of steroids should be considered. General supportive measures with continual monitoring of gas exchange, acid-base balance, electrolytes, and fluid intake are also required.

Material Safety Data Sheet

MSDS Revision Date: 06-03-2011

BRENNTAG

5. Fire Fighting Measures

Fire: Not considered to be a fire hazard.

Explosion: May be a fire and explosion hazard when in contact with incompatible materials.

Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire. Avoid direct contact of liquid with water because it will generate large amounts of heat and may cause splattering.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Move containers out of fire area if you can do so without danger.

6. Accidental Release Measures

Ventilate area of leak or spill. Keep unnecessary and unprotected personnel from entering. Isolate hazard area. Wear appropriate personal protective equipment. Isolate and ventilate the area and prevent entry to unnecessary and unprotected workers. Contain and collect liquid in an appropriate container or absorb with an inert material. Do not flush to a sewer. Residues from spills can be diluted with water, neutralized with dilute acid such as acetic, hydrochloric or sulfuric. Residues from spills can be diluted with water. Do not use combustible materials, such as saw dust. Do not flush to a sewer. Wear appropriate personal protective equipment. Prevent exposure to the environment. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Store above 16C (60F) to prevent freezing. Always add the caustic to water while stirring; never the reverse. Do not store in aluminum containers or use aluminum fittings or transfer lines, as flammable gas may be generated. Keep separated from incompatible. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product. Avoid breathing mist or vapors. Do not get on skin, eyes or on clothing. Wash thoroughly after handling.
Containers of this material may be hazardous when empty since they retain product residue (vapor, liquid); observe all warnings and precautions listed for the product. Transfer and fill area should have a safety shower and eye wash.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits: NIOSH Recommended Exposure Limit (REL): 2 mg/m^3 Ceiling
ACGIH Threshold Limit Value (TLV): 2 mg/m^3 Ceiling

BRENNTAG

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, a Manual of Recommended Practices*, most recent edition, for details. Personal Respirators (NIOSH Approved): If the exposure limit is exceeded and engineering controls are not feasible, a half face piece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.. A full-face piece particulate respirator (NIOSH type NI00 filters) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerin, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Use impervious gloves (butyl rubber, natural rubber, neoprene, nitrile, polyvinyl chloride (PVC), clothing, boots, and equipment to prevent contact with this material. Consult your industrial hygienist.

Eye Protection:

Splash-proof goggles should be worn when there is danger of material dust or material splash from solution containing chemical. Protection against splash or mist from solution containing chemical with 8-inch minimum face shield is recommended. Eye protection should be worn in presence of solution containing chemical, at all times. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance: Clear to opaque solution

Odor: Odorless

Physical State: liquid

PH: 14.0 (10%, 35% and 50% solution)

Melting Point: For 10% solution= 105C (14F); for 35% solution= 1C (34F); for 50%solution=140C (248f)

Boiling Point: For 10% solution= 105C (14F); for 35% solution= 115C (239F); for 50%solution=140C (230-291F)

Auto-ignition Temperature: No Information Found

Flash Point: Not Applicable

Material Safety Data Sheet

MSDS Revision Date: 06-03-2011
Page 5 of 8

BRENNTAG

Upper Explosive Limit:	Not Applicable
Lower Explosive Limit:	Not Applicable
Vapor Pressure:	13@ 60C (140F) (50% SOLUTION)
Density:	10% solution=1.11; 35% solution=1.34; 50% solution=1.53
Specific Gravity:	1.11 - 1.45 @ 15.6C
Solubility in Water:	Completely miscible in water 100%
Evaporation Rate:	Not Applicable
Coefficient of water/oil:	Not Applicable

10. Stability and Reactivity

Chemical Stability: Stable under normal use, handling and storage.

Conditions to Avoid: Heat, moisture, and incompatibles. Carbon monoxide gas may form upon contact with reducing sugars or food and beverage products in enclosed spaces.

Incompatible Materials: Sodium hydroxide in contact with acids and organics halogen compounds, especially trichloroethylene, may causes violent reactions. Contact with nitromethane and other similar nitro compounds cause formation of shock-sensitive salts. Contact with metals such as aluminum, magnesium, tin, and zinc cause formation of flammable hydrogen gas. Sodium hydroxide, even in fairly dilute solutions, reacts readily with various sugars to produce carbon monoxide. Precautions should be taken including monitoring the tank atmosphere for carbon monoxide to ensure safety of personnel before vessel entry.

Hazardous Decomposition Products: May emit Sodium oxides. Decomposition by reaction with certain metals releases flammable and explosive hydrogen gas.

11. Toxicological Information

TOXICITY DATA: Acute Oral/Dermal/Inhalation Effects

Investigated as a mutagen
Skin Irritation Data (STD Draize, 500 mg/24 H): Rabbit, Severe. Eye Irritation Data (Rabbit, non-std test, 50 mg/24 H, rinse): severe.

BRENNTAG

WARNING!
DANGER!

POISON!

CORROSIVE, CAUSES SEVERE BURNS TO SKIN, EYES, RESPIRATORY TRACT, AND GASTROINTESTINAL TRACT. MATERIAL IS EXTREMELY DESTRUCTIVE TO ALL BODY TISSUES. CAUSES PERMANENT EYE DAMAGE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED

Potential Health Effects

Inhalation: Severe irritant. Effects from inhalation of mist vary from mild irritation to serious damage of the upper respiratory tract, depending on the severity of exposure. Symptoms may include sneezing, sore throat and runny nose. Severe pneumonitis may occur.

Ingestion: Toxic! Corrosive to mucous membranes and may cause perforation of the esophagus and stomach. Abdominal pain, nausea, vomiting, general gastro-intestinal upset can be expected.

Skin Contact: Corrosive! Swallowing may cause severe burns of mouth, throat, and stomach. Severe scarring of tissue and death may occur. Symptoms may include bleeding, vomiting, diarrhea, fall in blood pressure. Damage may appear days after exposure.

Eye Contact: Corrosive! Irritant, possibly corrosive to eye tissue. Causes irritation of eyes with tearing, redness, and impaired vision are symptoms. Greater exposures cause severe burns with possible blindness resulting.

12. Ecological Information

ENVIRONMENTAL FATE:

No information found.

ENVIRONMENTAL TOXICITY:

FISH TOXICITY: This material has exhibited moderate toxicity to aquatic organisms. For sodium hydroxide: 100ppm LC50 Daphnia; 25ppm 24 hours LC50 Brook trout; 48ppm LC50 King salmon; 33 – 100ppm 48 hours LC50 Shrimp; 330 – 1000ppm 48 hours LC50 Cockle.

FATE AND TRANSPORT: This material is inorganic and not subject to biodegradation.

PERSISTENCE: This material is alkaline and may raise the PH of surface waters with low buffering capacity. This material is believed to exist in the disassociated state in the environment.

BRENNTAG

BIOCONCENTRATION: This material is believed not to bioaccumulation.

OTHER ECOLOGICAL INFORMATION: This material has exhibited slight toxicity to terrestrial organisms.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

US DOT (ground)
Proper Shipping Name: Sodium Hydroxide, Solution
Hazard Class: 8
UN/NA: UN1824
Packing Group: II
Marine Pollutant: No
RQ Amount: 1000 lb.

IMDG (water)
Proper Shipping Name: Sodium Hydroxide, Solution
Hazard Class: 8
UN/NA: UN1824
Packing Group: II
Marine Pollutant: No
RQ Amount: 1000 lb.

15. Regulatory Information

Name	CAS	TSCA	SARA 302	SARA 304	SARA 313	CERCLA
Sodium Hydroxide	1310-73-2	Yes	No	No	No	1000 lbs.

California Proposition 65
Not Listed

Material Safety Data Sheet

MSDS Revision Date: 06-03-2011

BRENNTAG

16. Other Information

This MSDS is provided as an information resource only. It should not be taken as a warranty or representation for which Brenntag assumes legal liability. While Brenntag believes the information contained herein is accurate and compiled from sources believed to be reliable, it is the responsibility of the user to investigate and verify its identity. The buyer assumes all responsibility for using and handling the product in accordance with applicable federal, state, and local regulations.

Distributed by Brenntag

Brenntag Great Lakes, LLC. 4420 N. Harley Davidson Ave. Wauwatosa, WI 53225	Brenntag Mid-South, Inc. 1405 Hwy 136 W Henderson, KY 42420	Brenntag Northeast, Inc. 81 West Huller Lane Reading, PA 19605	Brenntag Specialties, Inc. 1000 Coolidge Street South Plainfield, NJ 07080
Brenntag Southeast, Inc. 2000 East Pettigrew Street Durham, NC 27703	Brenntag Southwest, Inc. 610 Fisher Road Longview, TX 75604	Brenntag Pacific, Inc. 10747 Patterson Place Santa Fe Springs, CA 90670	Coastal Chemical Co., LLC PO Box 820 Abbeville, LA 70511