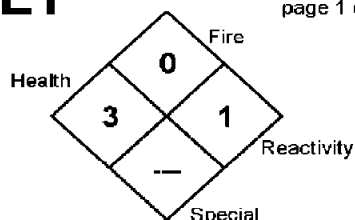


MATERIAL SAFETY DATA SHEET**BRENNTAG**NFPA 704 DESIGNATION
HAZARD RATING4=Extreme
3=High
2=Moderate
1=Slight
0=Insignificant

Brenntag MSDS #:	BPI-00182
MSDS Revision/Issue Date:	07/31/07
Supersedes Revision Date:	New

1. CHEMICAL PRODUCT IDENTIFICATION & COMPANY IDENTIFICATION**PRODUCT IDENTIFIER: Sodium Hydroxide 50% Solution (All Grades)****GENERAL USE:** Used in industry to neutralize acids; to precipitate alkaloids; in metal finishing; in cleaners; and to precipitate most metals (as hydroxides) from aqueous solutions.**PRODUCT DESCRIPTION:** An aqueous solution of Sodium Hydroxide. Synonyms for Sodium Hydroxide include: caustic soda, lye soda, sodium hydrate and white caustic.**INFORMATION PROVIDED BY:** Brenntag Pacific, Inc.
5700 N.W. Front Avenue
Portland, OR 97210**EMERGENCY PHONE NUMBERS****BRENNTAG:** 503-699-7055
CHEMTREC: 800-424-9300
CANUTEC: 613-996-6666For MSDS call: **PHONE: 503-242-0200****2. COMPOSITION & INFORMATION ON INGREDIENTS**

COMPONENT	CAS #	OSHA HAZARD	WT %	ACGIH		OSHA	
				TLV _(TWA)	STEL	PEL _(TWA)	STEL
Sodium Hydroxide	1310-73-2	Corrosive; Lung Toxin	50 ± 1	None Ceiling: 2 mg/m ³	None	2 mg/m ³	None

NDA = No Data Available

N/A = Not Applicable

3. HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW:** A clear to slightly turbid, colorless liquid having no characteristic odor. The mists and liquid are corrosive to all tissues contacted. Inhalation of mists may cause permanent lung damage. This material reacts with water to release a large amount of heat and can react violently with acids and other substances. **The NIOSH I.D.L.H. for Sodium Hydroxide is: 10 mg/m³.****POTENTIAL HEALTH EFFECTS****INHALATION:** Inhalation of mists or an aerosol can cause severe irritation or burns to the nose, mouth, throat, mucous membranes and lungs. Symptoms of exposure can include coughing, sneezing, choking, shortness of breath, chest pain and impairment of lung function. Inhalation of a high mist concentration may result in permanent lung damage.**EYE CONTACT:** Exposure to the mists or liquid can cause severe eye irritation and/or burns. Symptoms of exposure can include tearing, redness, swelling, pain and possible mucous discharge. Exposure may cause corneal damage and/or visual impairment even when prompt treatment is provided.**SKIN CONTACT:** Exposure to the mists or liquid can cause severe skin irritation and/or burns. Symptoms of exposure may include redness, swelling, pain and possible ulceration. Prolonged skin exposure to this material may cause destruction of the dermis with impairment of the skin, at site of contact, to regenerate. No published data indicates this material is absorbed through the skin.**INGESTION:** Ingestion can cause severe irritation and/or burns to the entire gastrointestinal tract, including the stomach and intestines characterized by nausea, vomiting, abdominal pain, bleeding, tissue ulceration and possible diarrhea.**CHRONIC:** The chronic health effects of exposure to this material are expected to be the same as for acute exposure.

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4. FIRST AID MEASURES

- INHALATION:** If inhaled, immediately move to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; use the Holger Nielsen method (back pressure-arm lift) or proper respiratory device. If breathing is difficult, give oxygen. Call a physician.
- EYE CONTACT:** In case of contact, immediately flush eyes with plenty of clean running water for at least 15 minutes, lifting the upper and lower lids occasionally. Remove contact lenses, if worn. Get medical attention immediately.
- SKIN CONTACT:** In case of contact, immediately flush skin with plenty of clean running water for at least 15 minutes, while removing contaminated clothing and shoes. If burn or irritation occurs, call a physician.
- INGESTION:** If swallowed, DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give plenty of water to drink. Never give anything by mouth to an unconscious person.
- NOTE TO PHYSICIANS:** Sodium Hydroxide has a relatively low oral toxicity, but it can be corrosive to the eyes, skin and mucous membranes. If ingested, consideration should be given to careful endoscopy as stomach or esophageal burns, perforations or strictures may occur. Careful gastric lavage with an endotracheal tube in place should be considered. Treat exposure symptomatically.

5. FIRE FIGHTING MEASURES

- Flashpoint and Method:** This material does not flash.
- Flammable Limits (in air, % by volume)** **Lower:** Not applicable **Upper:** Not applicable
- Autoignition Temperature:** Not applicable
- GENERAL HAZARD:** The Uniform Fire Code physical hazard classification for this material is: **Water Reactive, Class I**. Direct contact with water causes an exothermic reaction (generation of heat). The Uniform Fire Code health hazard classification for this material is: **Corrosive (Alkaline)**. This material may generate flammable / explosive Hydrogen gas on contact with some soft metals (i.e. Aluminum). This material may produce hazardous decomposition products.
- FIRE FIGHTING INSTRUCTIONS:** **EXTINGUISHING MEDIA:** Foam, CO₂ or dry chemicals.
If water must be used and it can contact this material, it is best to use a water flood technique.
- FIRE FIGHTING EQUIPMENT:** Fire fighters should wear full protective equipment, including self-contained breathing apparatus.
- HAZARDOUS COMBUSTION PRODUCTS:** When heated to dryness and decomposition, it emits toxic sodium oxide.

6. ACCIDENTAL RELEASE MEASURES

- LAND SPILL:** Wearing recommended protective equipment and clothing, dike the spill and pick up the bulk of liquid using pumps or a vacuum truck, or absorb the liquid in sand or a commercial absorbent. Place in approved containers for recovery, disposal, or satellite accumulation. Neutralize the alkalinity, of the remaining liquid, using a dilute acid solution appropriate for neutralizing alkaline liquids. Liberally cover the spill area with sodium bicarbonate. Flush the spill area with water; collect the rinsates for disposal or sewer, as appropriate.
- WATER SPILL:** Wear recommended protective equipment and clothing if contact with hazardous material can occur. Stop or divert water flow. Dike contaminated water and remove for disposal and/or treatment. As appropriate, notify all downstream users of possible contamination.

PRODUCT IDENTIFIER: **Sodium Hydroxide 50% Solution (All Grades)**

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7. HANDLING AND STORAGE**STORAGE TEMPERATURE:** Ambient**STORAGE PRESSURE:** Ambient

GENERAL: Store in a cool, dry, well-ventilated area away from incompatible materials and products. Do not get this material in eyes, on skin or on clothing. Wear recommended personnel protective equipment. Do not breathe mists or aerosols. Use only with adequate ventilation. Do not take internally. Keep the container tightly closed when not in use. Wash thoroughly after handling.

This material is corrosive to Aluminum, Magnesium, Tin, Zinc and alloys containing these metals, and it will react violently with these metals in powder form.

Considerable heat is generated when this material is mixed with water. Never add water to this material. Always add this material slowly, with constant stirring, to the surface of cool (40 – 50° F.) water. If this material is added too rapidly, or without stirring, and becomes concentrated at the bottom of the mixing vessel, excessive heat may be generated, resulting in dangerous boiling and spattering, and a possible immediate and violent eruption of a highly caustic solution.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL MEASURES: Use a local or general, mechanical exhaust ventilation system capable of maintaining emissions, in the work area, below the OSHA-PEL or ACGIH Ceiling level.

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

RESPIRATOR: For exposure above the OSHA-PEL or ACGIH-TLV, wear a NIOSH-approved full facepiece or half mask air-purifying cartridge respirator equipped with a good particulate filter cartridge or supplied air. For exposure to Sodium Hydroxide above 10 mg/m³, wear a supplied air respirator or a self-contained breathing apparatus (SCBA) operated in the positive pressure mode.

EYES: Wear chemical goggles (recommended by ANSI Z87.1-1979), unless a full facepiece respirator is worn.

GLOVES: Wear Neoprene, Nitrile, Butyl Rubber or Natural Rubber gloves.

CLOTHING & EQUIPMENT: Wear a Neoprene, Nitrile, Butyl Rubber or Natural Rubber apron, or full protective clothing when handling this material. An eye wash station and safety shower should be available in the work area.

FOOTWEAR: Wear Neoprene, Nitrile, Butyl Rubber or Natural Rubber boots.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear to slightly turbid, colorless	Bulk Density (pounds/ft³):	Not applicable
Physical State:	Liquid	Vapor Pressure:	13 mm Hg @ 60° F.
Odor:	No characteristic	Vapor Density (air=1):	No data available
Odor Threshold:	No data available	Evaporation Rate (n-Butyl Acetate=1):	No data available
Molecular Formula:	NaOH (in water)	VOC Content:	Nil
Molecular Weight:	40.00 (in water)	% Volatile:	49 – 51
Boiling Point:	Approximately 142.2° C. (288° F.)	Solubility in H₂O:	Complete
Freezing/Melting Point:	Approximately 12.2° C. (54° F.)	Octanol/Water Partition Coefficient:	No data available
Specific Gravity:	Approximately 1.525 @ 20° C.	pH (as is):	14.0
Density (pounds/gallon):	Approximately 12.72	pH (1% solution):	13.0 to 14.0

10. STABILITY AND REACTIVITY

GENERAL: This product is stable and hazardous polymerization will not occur.

CONDITIONS TO AVOID: Avoid contact with small amounts of water.

INCOMPATIBLE MATERIAL: Acids and acidic salts, chlorinated or fluorinated hydrocarbons, Acetaldehyde, Acrolein, Chlorine trifluoride, Hydroquinone, Maleic anhydride, Phosphorus pentoxide, Tetrahydrofuran, Aluminum, Magnesium, Tin, Zinc and alloys of these metals.

HAZARDOUS DECOMPOSITION PRODUCTS: When heated to decomposition, it emits toxic oxides of sodium.

SENSITIVITY TO MECHANICAL IMPACT: This material is not sensitive to mechanical impact.

SENSITIVITY TO STATIC DISCHARGE: This material is not sensitive to static discharge.

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11. TOXICOLOGICAL INFORMATION

Components: **Sodium Hydroxide**

Eye Contact: Rabbit: 50 ug/24 hours; Severe

Skin Contact: Rabbit: 500 mg/24 hours; Severe

Oral Rat LD₅₀: No data available (Oral Rabbit LD₅₀: 500 mg/kg)

Dermal Rabbit LD₅₀: 1,350 mg/kg

Inhalation Rat LC₅₀: No data available

Human Data: No data available

Other Toxicological Data: Intraperitoneal Mouse LD₅₀: 40 mg/kg

Carcinogenicity: No data available

Teratogenicity: No data available

Mutagenicity: Hamster Cytogenetic Analysis: Lung: 10 mmol/Liter

Synergistic Products: None reported

Target Organs: Eyes, Skin, Mucous membranes & Lungs

Medical Conditions Aggravated By Exposure: Skin or Respiratory disorders

12. ECOLOGICAL INFORMATION**ENVIRONMENTAL FATE:**

This material is completely soluble in water and will significantly affect the pH of water. No specific environmental fate information is available.

ENVIRONMENTAL CONSIDERATIONS:

The aquatic toxicity for this material has not been determined. The aquatic toxicity for pure Sodium Hydroxide is: Cyprinus carpio LC₁₀₀ = 180 ppm/24 hours at 25° C.

13. DISPOSAL CONSIDERATIONS

RCRA 40 CFR 261 CLASSIFICATION: Corrosive Waste

U.S. EPA WASTE NUMBER/DESCRIPTION: D002

If this product is disposed of as shipped, it meets the criteria of a hazardous waste as defined under 40 CFR 261 due to its corrosivity. If this product becomes a waste, it will be a hazardous waste, which is subject to the Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly. As a hazardous liquid waste, it must be disposed of in accordance with local, state, and federal regulations in a permitted hazardous waste treatment, storage, and disposal facility.

14. TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Sodium hydroxide solution

Hazard Class: 8

UN Number: UN1824

Packing Group: II

Primary Label: Corrosive

Subsidiary Label(s): None Required

Primary/Subsidiary Placards: Corrosive

DOT Reportable Quantity (RQ): 1,000 pounds (NaOH)

RQ for Product: 2,000 pounds (157.2 gallons)

Marine Pollutant: No

2004 North American Emergency Response Guidebook No.: 154

TDG PROPER SHIPPING NAME: SODIUM HYDROXIDE SOLUTION

Hazard Class: 8

UN Number: UN1824

Packing Group: II

Primary Label: Corrosive

Subsidiary Label(s): None Required

Primary/Subsidiary Placards: Corrosive

TDG Reportable Quantity (RQ): # At least 5kg or 5 liters.

TDG Schedule XII: Not listed

Regulated Limit (RL): ## 50 kg (NaOH)

RL for Product: 100 kg (65.6 liters)

Other Shipping Information: None

Canadian Transportation of Dangerous Goods Regulations (TDGR), Part IX, Table I, Quantities or levels for Immediate Reporting: releases of reportable quantities, RQ, that meet the definition of a "dangerous occurrence" (a threat to life, health, property, or the environment) must be reported to the appropriate authorities as outlined in TDGR 9.13(1) and 9.14(1).

Reporting to Environment Canada is required for any releases exceeding the regulated limits, RL, of 9.2 materials (primary or secondary). The regulated limits are found in Schedule XIII of the TDGR.

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PRODUCT IDENTIFIER: **Sodium Hydroxide 50% Solution (All Grades)**

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15. REGULATORY INFORMATION

COMPONENTS: Sodium Hydroxide
OSHA Target Organs: Eyes, Skin, Mucous membranes & Lungs

Carcinogenic Potential:

Regulated by OSHA: No
Listed on NTP Report: No
Listed by IARC: No
 IARC Group: Not applicable
ACGIH Appendix A: Not listed
 A1 Confirmed Human: Not applicable
 A2 Suspected Human: Not applicable

U.S. EPA Requirements**Release Reporting**

CERCLA (40 CFR 302)
Listed Substance: Yes
 Reportable Quantity: 1,000 pounds
 Category: C
 RCRA Waste No.: None listed
Unlisted Substance: Not applicable
 Reportable Quantity: Not applicable
 Characteristic: Not applicable
 RCRA Waste No.: Not applicable

SARA TITLE III**Section 302 & 303 (40 CFR 355):**

Listed Substance: Not listed
 Reportable Quantity: Not applicable
 Planning Threshold: Not applicable

Section 311 & 312 (40 CFR 370):

Hazard Categories (product): Fire: N Sudden Release of Pressure: N Reactive: N Acute Health: Y Chronic Health: N
 Planning threshold: 10,000 pounds

Section 313 (40 CFR 372):

Listed Toxic Chemical: Not listed
 Reporting Threshold: Not applicable

U.S. TSCA Status

Listed (40 CFR 710): Yes

State Regulations**State of California: Safe Drinking Water and Toxins Enforcement Act, 1986 (Proposition 65):**

Carcinogen: No
Reproductive Toxin: No

Other Regulations

State Right To Know Laws: MA, NJ, PA, CA

Canadian Regulations**Product Information:**

Controlled Product: Yes
WHMIS Hazard Symbols: Corrosive Material
WHMIS Class & Division: E

Ingredient Information:

IDL Substance: Yes
DSL or NDSL Lists: DSL

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16. OTHER INFORMATION

EPA Registration number: Not applicable
Approved Product Uses: Not applicable

Special Notes:

This product does not contain any material, which the State of California has found to cause cancer and/or birth defects or other reproductive harm.

NOTE: Deadly carbon monoxide gas can form when this material contacts food soil containing sugars. After cleaning operations are completed, thoroughly ventilate enclosed areas before entering. Always monitor oxygen and carbon monoxide levels when personnel are in enclosed areas. For proper tank entry procedures, see ANSI Z117.1-1977.

Special Instructions:

When making solutions, always add this material to cool (40 – 50° F.) water with adequate mixing to prevent overheating and possible spattering of a highly alkaline solution.

Do not allow this product to contact Aluminum, Magnesium, Tin or Zinc surfaces as this causes corrosion of the metal and generation of flammable / explosive Hydrogen gas.

MSDS Revision Information: Information Revised This Issue Date: **New product MSDS.**
Form Revision made 2/03/06

MSDS Distributed by: Brenntag Pacific, Inc.
NW Environmental Department
Phone: 503-242-0200 FAX: 503-412-3390

Prepared By: Edward Doheny	Date Prepared: July 31, 2007
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