



# Chemical Marketing & Distribution Co. Ltd.

## Material Safety Data Sheets

### SODIUM HYDROXIDE 49%

#### 1 Product Information and Company Identification

Chemical Synonyms	Sodium Hydroxide Caustic soda solution; lye solution; sodium hydroxide liquid; sodium hydrate solution
Chemical Formula	NaOH in H <sub>2</sub> O
CAS No	1310-73-2
Molecular Weight	40.00
Product Number/s	
Supplier Address	Chemical Marketing and Distribution Co. Ltd. (CMDC) P. O. Box 1053 Dammam 31431 Saudi Arabia
Telephone Number	966 03 8472466
Facsimile Number	966 03 8472648
E Mail Address	<a href="mailto:sales@cmdc.com.sa">sales@cmdc.com.sa</a>
Manufacturer	Basic Chemical Industries Ltd. (BCI), Saudi Arabia

#### 2 Composition/Information on Ingredients

<u>Ingredients</u>	<u>CAS No</u>	<u>Percent</u>	<u>Hazardous</u>
Sodium Hydroxide	1310-73-2	49 - 51%	Yes
Water	7732-18-5	49 - 51%	No

#### 3 Hazards Identification

Emergency Overview	Poison! Danger! Corrosive! May be fatal if swallowed. Causes burns to any area of contact. Reacts with water, acids and other materials.
Inhalation	Severe irritant. Effects from inhalation of mist vary from mild irritation to serious damage of the upper respiratory tract, depending on severity of exposure. Symptoms may include sneezing, sore throat or runny nose. Severe pneumonitis may occur.
Ingestion	Corrosive! Swallowing may cause severe burns of mouth, throat, and stomach. Severe scarring of tissue and death may result. Symptoms may include bleeding, vomiting, diarrhea, fall in blood pressure. Damage may appear days after exposure.
Skin Contact	Corrosive! Contact with skin can cause irritation or severe burns and scarring with greater exposures.
Eye Contact	Corrosive! Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness.
Chronic Exposure	Prolonged contact with dilute solutions or dust has a destructive effect upon tissue.
Aggravation of Pre-existing Conditions	Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

## 4 First Aid Measures

Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion	DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician, immediately. Wash clothing before reuse.
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 endoscopy 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.

## 5 Fire Fighting Measures

Fire	Not considered being a fire hazard. Hot or molten material can react violently with water. Can react with certain metals, such as aluminum, to generate flammable hydrogen gas.
Explosion	May cause fire and explosions when in contact with incompatible materials.
Fire Extinguishing Media	Use any means suitable for extinguishing surrounding fire. Adding water to caustic solution generates large amounts of heat.
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.

## 6 Accidental Release Measures

Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. Do not flush caustic residues to the sewer. Residues from spills can be diluted with water, neutralized with dilute acid such as acetic, hydrochloric or sulfuric. Absorb neutralized caustic residue on clay, vermiculite or other inert substance and package in a suitable container for disposal.

## 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. Always add the caustic to water while stirring; never the reverse. 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. Do not store with aluminum or magnesium. Do not mix with acids or organic materials.

## 8 Exposure Controls/Personal Protection

Airborne Exposure Limits	Airborne Exposure Limits ACGIH Threshold Limit Value (TLV) – 2 mg/m <sup>3</sup> Ceiling OSHA Permissible Exposure Limit (PEL) - 2 mg/m <sup>3</sup> Ceiling
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, a half-face dust/mist respirator 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 dust/mist respirator 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. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. <b>WARNING:</b> Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection	Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection	Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

## 9 Physical And Chemical Properties

Appearance	Clear, colorless solution
Odor	Odorless.
Solubility	Completely miscible with water
Specific Gravity	10% solution - 1.11; 30% solution - 1.33; 50% solution - 1.53
pH	14.0 (10%, 30% and 50% solutions)
Boiling Point	For 10% solution = 105C (221F); for 30% solution = 115C (239F); for 50% solution = 140C (284F).
Melting Point	For 10% solution = -10C (14 F); for 30% solution = 1C (34F); for 50% solution = 12C (53.6F).
Vapor Density (Air=1)	No information found.
Vapor Pressure (mm Hg)	13 @ 60C (140F) (50% solution)
Evaporation Rate (BuAc=1)	No information found.
% Volatiles by volume @ 21C (70F)	No information found

## 10 Stability And Reactivity

Stability	Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products	Sodium oxide. Decomposition by reaction with certain metals releases flammable and explosive hydrogen gas.
Hazardous Polymerization Incompatibilities	Will not occur. Contact with acids and organic halogen compounds, especially trichloroethylene, may causes violent reactions. Contact with nitromethane and other similar nitro compounds causes formation of shock-sensitive salts. Contact with metals such as aluminum, magnesium, tin, and zinc cause formation of flammable hydrogen gas. 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.
Conditions to Avoid	Heat, moisture, incompatibles

## 11 Toxicological Information

Irritation data: skin, rabbit: 500 mg/24H severe; eye rabbit: 50 ug/24H severe; investigated as a mutagen.

## 12 Ecological Information

Environmental Fate	No information found.
Environmental Toxicity	No information found.

## 13 Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. 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 containers and unused contents in accordance with federal, state and local requirements.

## 14 Transport Information

Domestic	Proper Shipping Name	Sodium Hydroxide, Solution
	Hazard Class	8
	UN/NA	UN1824
	Packing Group	II
International (Water, I.M.O.)	Proper Shipping Name	Sodium Hydroxide, Solution
	Hazard Class	8
	UN/NA	UN1824
	Packing Group	II

## 15 Regulatory Information

## 16 Other Information

NFPA Ratings	Health: 3 Flammability: 0 Reactivity: 1
Label Hazard Warning	Poison! Danger! Corrosive! May be fatal if swallowed. Causes burns to any area of contact. Reacts with water, acids and other materials.
Label Precautions	Do not get in eyes, on skin, or on clothing. Do not breathe dust. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.
Label First Aid	If swallowed, do not induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. In all cases get medical attention immediately.