


MSDS	Sodium Hydroxide	 Adwan Chemical Industries Co. Ltd.
Issuing Date		

Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME	Sodium Hydroxide Solution
CHEMICAL NAME	Sodium Hydroxide
SYNONYMS	Caustic soda solution; lye solution; sodium hydroxide liquid; sodium hydrate solution, sodium hydroxide volumetric solutions
MANUFACTURED BY	Adwan Chemical Industries Co. Ltd. Riyadh 2nd Industrial City – Al Kharj Road PO Box 355128 Riyadh 11383 Kingdom of Saudi Arabia
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2. HAZARDS IDENTIFICATION

POISON! DANGER! CORROSIVE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. CAUSES BURNS TO ANY AREA OF CONTACT. REACTS WITH WATER, ACIDS AND OTHER MATERIALS.

Health Rating	: 3 Severe (Poison)
Flammability Rating	: 0 None
Reactivity Rating	: 2 Moderate
Contact Rating	: 4 Extreme (Corrosive)
Lab Protective Equip	: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code	: White Stripe (Store Separately)

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 severity of exposure. Symptoms may include sneezing, sore throat or runny nose. Severe pneumonitis may occur.

SKIN

Corrosive! Contact with skin can cause irritation or severe burns and scarring with greater exposures.

EYE

Corrosive! Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness.

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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 appears days after exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Persons with pre existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY

No information found.

CHRONIC EFFECTS

Prolonged contact with dilute solutions or dust has a destructive effect upon tissue.

3. COMPOSITION / INFORMATION INGREDIENTS

CHEMICAL NAME : Sodium Hydroxide
CAS NUMBER : 1310 73 2
% RANGE : 10 - 60 %

4. FIRST AID MEASURES

INHALATION

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN

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.

EYES

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

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.

5. FIRE-FIGHTING MEASURES


FLAMMABLE PROPERTIES

Not considered to be 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. May cause fire and explosions when in contact with incompatible materials.

FLASH POINT None

AUTOIGNITION TEMPERATURE

N/A

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FLAMMABLE LIMITS IN AIR (PERCENT BY VOLUME)

Nonflammable

HAZARDOUS COMBUSTION PRODUCTS

Nonflammable.

EXTINGUISHING MEDIA

Use any means suitable for extinguishing surrounding fire. Adding water to caustic solution generates large amounts of heat.

FIRE FIGHTING INSTRUCTIONS

In the event of a fire, wear full protective clothing and NIOSH approved self contained breathing apparatus with full facepiece 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. Contain and recover liquid when possible. 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. Store above 16C (60F) to prevent freezing. 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 (vapors, liquid); 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

ENGINEERING CONTROLS


VENTILATION

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.

PERSONAL PROTECTIVE EQUIPMENT

EYE AND FACE 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.

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SKIN PROTECTION

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

RESPIRATORY PROTECTION

If the exposure limit is exceeded and engineering controls are not feasible, a half facepiece 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 N100 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, glycerine, 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 facepiece positive pressure, air supplied respirator. **WARNING:** Air purifying respirators do not protect workers in oxygen deficient atmospheres.

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)
% VOLATILES BY VOLUME @ 21C (70F)	: No information found.
BOILING POINT	: For 10% solution on = 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.


10. STABILITY AND REACTIVITY

CHEMICAL STABILITY

Stable under ordinary conditions of use and storage.

CONDITIONS TO AVOID

Heat, moisture, incompatibles.

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INCOMPATIBILITY WITH OTHER MATERIALS

Sodium hydroxide in 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. Sodium hydroxide, even in fairly dilute solution, 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

Sodium oxide. Decomposition by reaction with certain metals releases flammable and explosive hydrogen gas.

HAZARDOUS POLYMERIZATION

Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

ANIMAL TOXICOLOGY

Sodium hydroxide: 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.

ECOTOXICITY

No information found.

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


Domestic (Land, D.O.T.)

Proper Shipping Name: SODIUM HYDROXIDE SOLUTION

Hazard Class: 8

UN/NA: UN1824

Packing Group: II

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Information reported for product/size: 360LB

International (Water, I.M.O.)

Proper Shipping Name: SODIUM HYDROXIDE, SOLUTION

Hazard Class: 8

UN/NA: UN1824

Packing Group: II

Information reported for product/size: 360LB

15. REGULATORY INFORMATION

Chemical Inventory Status

Ingredient	TSCA	EC	Japan	Australia	Korea	DSL	NDSL	Phil
Sodium Hydroxide (7705 08 0)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Federal, State & International Regulations

Ingredient	SARA 302		SARA 313		CERCLA	RCRA 261.33	TSCA 8(d)
	RQ	TPQ	List	Chemical Catg.			
Sodium Hydroxide (1310 73 2)	No	No	No	No	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
 Reactivity: Yes (Mixture / Liquid)

Australian Hazchem Code: 2R
 Poison Schedule: S6

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. OTHER INFORMATION

NFPA RATINGS:


Health: 3 Flammability: 0 Reactivity: 1

LABEL HAZARD WARNING:

POISON! DANGER! CORROSIVE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. 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.

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Do not breathe mist.
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.