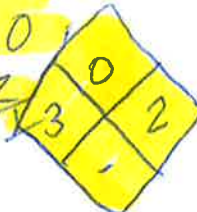


HYDR 27
HYDRITE CHEMICAL CO.
CAUSTIC SODA LIQUID 50%
AL-0050
05/94

HEALTH : 3
FLAMMABILITY: 0
REACTIVITY : 2



MATERIAL SAFETY DATA SHEET

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PRODUCT NAME: CAUSTIC SODA LIQUID 50%

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DISTRIBUTED BY: HYDRITE CHEMICAL CO.
300 N. PATRICK BLVD.
BROOKFIELD, WI 530080948
(414) 792-1450
24 HOUR EMERGENCY # - (414) 277-1311
CHEMTREC EMERGENCY # - (800) 424-9300

MSDS#: HY941AL0050XX
PREPARED BY: SMJ/NAO
04/25/94

MANUFACTURED BY: OCCIDENTAL, PPG, AND VULCAN

SECTION I - PRODUCT INFORMATION

TRADE NAME: CAUSTIC SODA LIQUID 50%
CHEMICAL NAME SYNONYMS: Sodium Hydroxide
Lye

C.A.S. REGISTRY #: 1310-73-2
CHEMICAL FAMILY: Alkali

FORMULA: 50% NaOH

DOT PROPER SHIPPING NAME: SODIUM HYDROXIDE SOLUTION

D.O.T. HAZARD CLASS: 8 (CORROSIVE MATERIAL)

D.O.T. IDENTIFICATION #: UN1824 D.O.T. LABEL: CORROSIVE

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	TLV LEVEL	PEL LEVEL
Sodium Hydroxide	50%	C 2 mg/m ³	C 2 mg/m ³

NOTE :C denotes Ceiling Limit.



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SECTION III - PHYSICAL DATA

BOILING POINT (DEG. F): 293 SPECIFIC GRAVITY: 1.53 @ 60F
FREEZING POINT (DEG.F): 41 - 51 PERCENT VOLATILE
VAPOR PRESSURE (MM HG): 6.3 @ 104F BY VOLUME%: N.A.
VAPOR DENSITY (AIR=1) : N.A. EVAPORATION RATE(N.A.): N.A.
SOLUBILITY IN WATER: Complete

APPEARANCE AND ODOR: Clear, colorless to slightly turbid liquid. No odor.

SECTION IV - FIRE EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): None.

FLAMMABLE LIMITS LEL: N.A. UEL: N.A.

EXTINGUISHING MEDIA: For fires in area use appropriate media.
For example: Water spray. Dry Chemical. Carbon Dioxide. Alcohol Foam.

SPECIAL FIRE FIGHTING PROCEDURES: Evacuate area of unprotected personnel. Wear protective clothing, chemical safety goggles and face shield. Cool fire-exposed containers with water spray. Product generates heat upon addition of water, with possible spattering. Run-off from fire control may cause pollution.

UNUSUAL FIRE EXPLOSION HAZARDS: Product may react with some metals (ex.: Aluminum, Zinc, Tin, etc.) to release flammable Hydrogen gas.

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: C 2 mg/m3 (OSHA 29 CFR 1910.Z-1-A)
C 2 mg/m3 (ACGIH 1993-94)

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SECTION V - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE

EYE CONTACT: CORROSIVE - Causes severe burns and destruction of tissues. Small quantities can result in permanent damage and loss of vision.

SKIN CONTACT: CORROSIVE - Irritating to skin. Corrosive action causes burns and frequently deep ulceration with ultimate scarring.

INHALATION: CORROSIVE - Causes burns to respiratory tract. Inhalation of dust or mists can cause damage to the upper respiratory tract and to the lung tissue depending upon the extent of exposure.

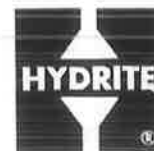
INGESTION: CORROSIVE - Ingestion can cause very serious damage to the mouth, esophagus, stomach, and other tissues with which contact is made, and may be fatal.

OTHER: ROUTES OF EXPOSURE: Product can affect the body if it is inhaled, comes in contact with the eyes or skin, or is swallowed. TARGET ORGANS: Eyes. Skin. Respiratory System. MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Preexisting eye and skin disorders may be aggravated by exposure.

EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during this flushing with water. Call a physician immediately.

SKIN CONTACT :Flush area with water while removing contaminated clothing and shoes. Follow by washing with soap and water. Do not reuse clothing or shoes until cleaned. If irritation



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SECTION V - HEALTH HAZARD DATA

persists, get medical attention. Do not apply oils or ointments unless ordered by the physician. If skin feels slippery, caustic may still be present in sufficient quantities to cause rash or burn. Continue washing skin until slick skin feeling is gone.

INGESTION: If conscious, drink a quart of water. DO NOT induce vomiting. CALL A PHYSICIAN immediately. If unconscious or in convulsions, take immediately to a hospital or a physician. NEVER induce vomiting or give anything by mouth to an unconscious victim. After dilution with water, fruit juice or diluted vinegar may be administered to accomplish neutralization. Several glasses of milk or several ounces of milk of magnesia may be given for their soothing effect.

INHALATION: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. CALL A PHYSICIAN.

SECTION VI - REACTIVITY DATA

STABILITY: X STABLE UNSTABLE

CONDITIONS TO AVOID: Contact with water may cause violent reaction with evolution of heat. To dilute: Add product slowly to lukewarm water; not water to product.

INCOMPATIBILITY: Acids. Metals such as Aluminum, Zinc, Tin, etc. Organic Nitro Compounds. Chlorinated and Fluorinated Hydrocarbons, acetaldehyde, chlorine trifluoride, hydroquinone, maleic anhydride, phosphorous pentoxide, and tetrahydrofuran. Organic materials. Acrolein. Phosphorus. Trichloroethylene. Food sugars. Deadly carbon monoxide gas can form in enclosed or poorly ventilated areas or tanks when alkaline products contact food, beverage, or dairy products. Do not enter such areas until they have been well ventilated and carbon monoxide and oxygen levels have been determined to be within OSHA acceptable limits. If carbon monoxide and oxygen levels cannot be measured, wear NIOSH-approved,



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SECTION VI - REACTIVITY DATA

self-contained breathing apparatus.

HAZARDOUS DECOMPOSITION PRODUCTS: May react with certain metals to produce flammable Hydrogen Gas. May react with various food sugars to form Carbon Monoxide. Reacts with Phosphorus to form spontaneously flammable Phosphine. Reacts with Trichlorethylene to form spontaneously flammable Dichloroacetylene.

HAZARDOUS POLYMERIZATION: MAY OCCUR X WILL NOT OCCUR

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

CORROSIVE MATERIAL. Evacuate unprotected personnel from area. Maintain adequate ventilation. Use proper Safety Equipment. Contain spill, place into drums for proper disposal. Neutralize remaining residue with dilute Hydrochloric Acid solution and dispose of properly. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs. CAUTION: Caustic Soda may react violently with acids and water.

WASTE DISPOSAL METHOD: Observe all Local, State, and Federal Regulations. Dispose of at approved Waste Treatment Facility. If approved, neutralize material and flush to sewer. DO NOT pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition.

SECTION VIII - SPECIAL PROTECTION INFORMATION

CONSULT SAFETY EQUIPMENT DISTRIBUTOR

RESPIRATORY PROTECTION: If recommended Exposure Limits are exceeded wear: NIOSH-Approved respirator for dusts and mists. NIOSH-Approved self-contained breathing apparatus. Do not exceed limits established by the respirator manufacturer. Respiratory



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SECTION VIII - SPECIAL PROTECTION INFORMATION

protection programs must comply with 29 CFR 1910.134.

VENTILATION: Maintain adequate ventilation. Do not use in closed or confined space. Keep levels below recommended Exposure Limits. To determine exposure levels, monitoring should be performed regularly. Avoid mist formation.

PROTECTIVE GLOVES: Rubber (Latex). Neoprene. Polyvinyl Chloride.

EYE PROTECTION: Chemical Safety Goggles. Face shield. Do not wear contact lenses.

OTHER PROTECTIVE EQUIPMENT: Eye-wash station. Safety shower. Rubber apron. Chemical safety shoes. Rubber boots. Protective clothing.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

CORROSIVE MATERIAL. Store in cool, well-ventilated area, out of direct sunlight. Do not freeze. Keep containers tightly closed. Highly corrosive to most metals with evolution of Hydrogen Gas. Store away from incompatible materials. Do not store in unlabeled or mislabeled containers. *** ANSI/NSF Standard 60 Maximum Use Level = 100 mg/l ***

OTHER PRECAUTIONS: Avoid contact with skin and eyes. Do not swallow. Avoid dust or mist formation. Use with adequate ventilation. Avoid breathing mists or dusts. Wash thoroughly after handling. Do not eat, drink, or smoke in work area.

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SECTION X - SUPPLEMENTAL HEALTH INFORMATION

CARCINOGEN CONTENT

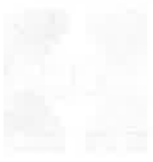
% PPM	INGREDIENT	IARC	NTP	OSHA
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NOTE : This product does not contain greater than 0.1% of the known or potential carcinogens listed in NTP, IARC, or OSHA.

LD50 ORAL : Rabbit: 1350 mg/kg (Oxy Chem)
LD50 SKIN : Rabbit 50 mg/24 H (Anhydrous NaOH)
LC50 INHALATION : No Data

** ** * * * * * * * * * * * * * *

The data in this Material Safety Data Sheet relates only to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as a warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.



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