

SAFETY DATA SHEET

CAUSTIC SODA LIQUID 50%

Product ID: AL0050

Revised: 03-11-2022

Replaces: 06-25-2014

1. IDENTIFICATION

Product Identifier Used on the Label: CAUSTIC SODA LIQUID 50%

Other Identifiers: Lye; Sodium Hydroxide Solution; Alkali; Caustic; Sodium Hydrate

Product ID: MIXTURE

Recommended Use: No data available.

Restrictions on Use: No data available.

Hydrite Chemical Co.
17385 Golf Parkway
Brookfield, WI 53045
(262) 792-1450

EMERGENCY RESPONSE NUMBERS:
24 Hour Emergency #: (414) 277-1311
CHEMTREC Emergency #: (800) 424-9300

2. HAZARD(S) IDENTIFICATION

GHS Classification(s): Substance or mixture corrosive to metals Category 1
Skin Corrosion/Irritation Category 1B
Serious Eye Damage/Eye Irritation Category 1
Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 3
Acute Toxicity - Oral Category 4

GHS Label Elements:

GHS Hazard Symbols:



Signal Word: Danger

Hazard Statements: May be corrosive to metals.
Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause respiratory irritation.

Precautionary Statements:

Prevention: Keep only in original container.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
Specific treatment (see First Aid on SDS or on this label).

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Wash contaminated clothing before reuse.
Absorb spillage to prevent material damage.

Storage: Store in a well-ventilated place. Keep container tightly closed.
Store in a secure manner.
Store in corrosive resistant container with a resistant inner liner.

Disposal: Dispose of in accordance with local, regional and international regulations.

Hazards not otherwise classified: Reacts with most metals to form explosive/flammable hydrogen gas. May react violently with water. May react with various food sugars to form carbon monoxide. Reacts vigorously, violently or explosively with many organic and inorganic chemicals, such as strong acids, acid chlorides, acid anhydrides, ketones, glycols and organic peroxides. Chronic skin contact with low concentrations may cause dermatitis.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances/Mixtures:

Chemical or Common Name/Synonyms	CAS Number	% by Wt.
Sodium Hydroxide	1310-73-2	~ 50 %

Note: Any chemical identity and/or exact percentage not expressly stated is being withheld as a trade secret or is due to batch variation.

4. FIRST-AID MEASURES

Description of Necessary Measures:

Eye Contact: If in eyes: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention. Washing eyes within several seconds is essential to achieve maximum effectiveness. Do not attempt to neutralize with chemical agents. Oils or ointments should not be used at this time. Remove contact lenses after the first 5 minutes and continue flushing.

Skin Contact: If on skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Do not reuse clothing and shoes until cleaned. If skin feels slippery, caustic may still be present in sufficient quantities to cause rash or burn. Continue washing skin until slick feeling is gone. Do not apply oils or ointments unless ordered by the physician. Discard footwear which cannot be decontaminated. Discard contaminated leather articles such as shoes and belt.

Inhalation: If inhaled: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure.

Ingestion: If swallowed: If fully 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. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. If vomiting occurs spontaneously, keep airway clear and give more water.

Most Important Symptoms/Effects, Acute and Delayed:

Eye Contact: CORROSIVE-Causes severe irritation and burns. Small amounts may cause: blistering. disintegration. scarring. clouding. ulcerations. permanent eye damage. blindness. corneal damage. Mist may cause: irritation. High mist concentrations may cause: tissue destruction. Glaucoma and cataracts are possible late developments. Effects may vary depending on length of exposure, solution concentration and first aid measures.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Corrosive action causes burns and frequently deep ulceration with ultimate scarring. Note that irritation may follow an initial latency. The latency may vary as much as hours for dilute solutions to minutes for more concentrated solutions. Prolonged contact, even with

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dilute concentrations, can cause tissue destruction and permanent skin damage. Repeated exposure may cause: dermatitis (inflammation of the skin).

Skin Absorption: No absorption hazard expected under normal use.

Inhalation: CORROSIVE-Causes severe irritation and burns. Dusts or mists may irritate: nose. mouth. throat. respiratory tract. Dusts or mists may cause damage to the: upper respiratory tract. lungs. May cause: coughing. sneezing. running nose. sore throat. shortness of breath. wheezing. tightness of the chest. chest pain. choking. impaired lung function. pneumonitis. pulmonary edema. Effects may be delayed.

Ingestion: CORROSIVE-Causes severe irritation and burns. May cause damage to the: mouth. throat. stomach. esophagus. gastrointestinal tract. Ingestion can cause severe burns and complete tissue perforation of the mucous membranes of the mouth, throat and stomach. May be fatal if swallowed. May cause: abdominal pain. nausea. vomiting. diarrhea. bleeding. fall in blood pressure. shock. collapse. gastrointestinal ulceration. Damage may appear days after exposure. Aspiration into the lungs may occur during ingestion or vomiting resulting in mild to severe pulmonary injury and possibly death.

Indication of Immediate Medical Attention and Special Treatment Needed: The absence of visible signs or symptoms of burns does not reliably exclude the presence of actual tissue damage. All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. There is no antidote. Treatment is supportive care. Follow normal parameters for airway, breathing, and circulation. Surgical intervention may be required. Medical observation and assessment is recommended for all ingestions, all eye exposures, and symptomatic inhalation and dermal exposures. For symptomatic ingestion, do not administer oral fluids and consider investigation by endoscopy, X-ray, or CT scan. Esophageal perforation, airway compromise, hypotension, and shock are possible. For prolonged exposures and significant exposures, consider delayed injury to exposed tissues. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. If burn is present, treat as any thermal burn, after decontamination. Material is a strong alkali. Eye irrigation may be necessary for an extended period of time to remove as much caustic as possible. Duration of irrigation and treatment is at the discretion of medical personnel. Maintain adequate ventilation and oxygenation of the patient.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Not combustible. For fires in area use appropriate media. For example: Water fog. Dry chemical. Alcohol resistant foam. Use water with caution. Contact with water will generate considerable heat and cause spattering if applied directly to potassium hydroxide.

Specific Hazards Arising from the Chemical:

Fire and Explosion Hazards: Product may react with some metals (ex.: Aluminum, Zinc, Tin, etc.) to release flammable hydrogen gas. Fire or intense heat may cause violent rupture of packages. Contact with acids may generate sufficient heat to ignite nearby combustible material.

Hazardous Combustion Products: Corrosive vapors. Toxic fumes. Sodium oxides. Metal oxides. Halogenated compounds.

Special Protective Equipment and Precautions for Fire-Fighters: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers. Move containers from fire area if possible without hazard. Use water spray to cool fire-exposed containers, but avoid getting water into containers.

6. ACCIDENTAL RELEASE MEASURES

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Personal Precautions, Protective Equipment, Emergency Procedures: CORROSIVE MATERIAL. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit.

Methods and Materials for Containment and Clean Up: Contain spill, place into drums for proper disposal. Dilute acid, preferably acetic acid, may be used to neutralize the final traces after flushing. Flush remaining area with water to remove trace residue and dispose of properly. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs. CAUTION: This product may react violently with acids and water.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. CORROSIVE MATERIAL. Avoid dust or mist formation. Add product very slowly while stirring constantly. If product 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 possible immediate violent irruption of highly caustic solution.

Conditions for Safe Storage, Including any Incompatibilities: CORROSIVE MATERIAL. Store in a cool, well ventilated area, out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Highly corrosive to most metals with evolution of hydrogen gas. Do not freeze. Do not expose sealed containers to temperatures above 104 Deg. F. 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, self-contained breathing apparatus.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA Exposure Guidelines:

Component	Limits
Sodium Hydroxide	2 mg/m ³ TWA

ACGIH Exposure Guidelines:

Component	Limits
Sodium Hydroxide	2 mg/m ³ Ceiling

Appropriate Engineering Controls: General room ventilation is required. To keep exposure below established limits, local exhaust may be necessary. Avoid creating dust or mist. Maintain adequate ventilation. Do not use in closed or confined spaces. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly. NOTE: Where carbon monoxide may be generated, special ventilation may be required.

Individual Protection Measures:

Eye/Face Protection: Wear chemical safety goggles and a full face shield while handling this product. Do not wear contact lenses.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Chemical-resistant. Impervious.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. If exposure limits are exceeded, wear: NIOSH-Approved respirator for dusts and mists. NIOSH-Approved Supplied Air Respirator (SAR). NIOSH-Approved self-contained breathing apparatus. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Rubber apron. Rubber boots. Protective clothing.

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General Hygiene Conditions: Wash with soap and water before meal times and at the end of each work shift. Food, beverages, and tobacco products should not be carried, stored or consumed where this material is in use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Color: Clear to slightly turbid. Colorless to slightly colored.

Odor: No odor.

Odor Threshold: N.D.

pH: 14

Freezing Point (deg. F): < 60

Melting Point (deg. F): ~50-58

Initial Boiling Point or Boiling Range: ~ 284 - 293 °F

Flash Point: N.A.

Flash Point Method: N.A.

Evaporation Rate (nBuAc = 1): N.D.

Flammability (solid, gas): N.D.

Lower Explosion Limit: N.A.

Upper Explosion Limit: N.A.

Vapor Pressure (mm Hg): ~1-1.5 @ 20C

Vapor Density (air=1): N.D.

Specific Gravity or Relative Density: 1.528 @ 25C

Solubility in Water: Complete

Partition Coefficient (n-octanol/water): N.D.

Auto-ignition Temperature: No Data

Decomposition Temperature: N.D.

Viscosity: N.D.

% Volatile (wt%): N.D.

VOC (wt%): 0

VOC (lbs/gal): 0

Fire Point: N.D.

10. STABILITY AND REACTIVITY

Reactivity: No data available.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions. Sodium hydroxide can induce hazardous polymerization of acetaldehyde, acrolein, and acrylonitrile. Contact with water may cause violent reaction with evolution of heat. To dilute: Add product slowly to lukewarm water; not water to product. Contact with acid or incompatible materials may cause a violent reaction with evolution of heat. May react with certain metals to produce flammable hydrogen gas. Contact with acids, halogenated organics, organic nitro compounds, glycols, or sodium tetrahydroborate may produce flammable hydrogen gas. Contact with 1,2-dichloroethylene, trichloroethylene, tetrachloroethane, or phosphorous can form spontaneously flammable chemicals. Reactions with various food sugars may form carbon monoxide.

Conditions to Avoid (e.g., static discharge, shock, or vibration): Avoid moisture. Avoid extreme temperatures. Keep away from incompatibles.

Incompatible Materials: Acids. Metals such as aluminum, zinc, tin, etc. Magnesium. Chromium. Brass. Bronze. Copper. Lead. Other alkali sensitive metals or alloys. Organic materials. Organic nitro compounds. Chlorinated hydrocarbons. Fluorinated hydrocarbons. Acetaldehyde. Chlorine trifluoride. Hydroquinone. Maleic anhydride. Tetrahydrofuran. Acrolein. Phosphorous. Trichloroethylene. Leather. Wool. Phosphorous pentoxide. Halogenated compounds. Glycols. Explosives. Acrylonitrile. 1,2-Dichloroethylene. Tetrachloroethane. Organic peroxides. Sodium tetrahydroborate. Food sugars. Silver nitrate. Ammonia. Chloroform. Methanol. Zirconium. Strong oxidizing agents.

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Hazardous Decomposition Products: Hydrogen gas. Carbon monoxide. Flammable dichloroacetylene. Phosphine. Thermal decomposition may release: Sodium oxide.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure: Eyes. Skin. Inhalation. Ingestion.

Symptoms/Effects: Acute, Delayed and Chronic:

Eye Contact: CORROSIVE-Causes severe irritation and burns. Small amounts may cause: blistering. disintegration. scarring. clouding. ulcerations. permanent eye damage. blindness. corneal damage. Mist may cause: irritation. High mist concentrations may cause: tissue destruction. Glaucoma and cataracts are possible late developments. Effects may vary depending on length of exposure, solution concentration and first aid measures.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Corrosive action causes burns and frequently deep ulceration with ultimate scarring. Note that irritation may follow an initial latency. The latency may vary as much as hours for dilute solutions to minutes for more concentrated solutions. Prolonged contact, even with dilute concentrations, can cause tissue destruction and permanent skin damage. Repeated exposure may cause: dermatitis (inflammation of the skin).

Skin Absorption: No absorption hazard expected under normal use.

Inhalation: CORROSIVE-Causes severe irritation and burns. Dusts or mists may irritate: nose. mouth. throat. respiratory tract. Dusts or mists may cause damage to the: upper respiratory tract. lungs. May cause: coughing. sneezing. running nose. sore throat. shortness of breath. wheezing. tightness of the chest. chest pain. choking. impaired lung function. pneumonitis. pulmonary edema. Effects may be delayed.

Ingestion: CORROSIVE-Causes severe irritation and burns. May cause damage to the: mouth. throat. stomach. esophagus. gastrointestinal tract. Ingestion can cause severe burns and complete tissue perforation of the mucous membranes of the mouth, throat and stomach. May be fatal if swallowed. May cause: abdominal pain. nausea. vomiting. diarrhea. bleeding. fall in blood pressure. shock. collapse. gastrointestinal ulceration. Damage may appear days after exposure. Aspiration into the lungs may occur during ingestion or vomiting resulting in mild to severe pulmonary injury and possibly death.

Numerical Measures of Toxicity:

Component	Oral LD50	Dermal LD50	Inhalation LC50
Sodium Hydroxide	Rat: 325 mg/kg	Rabbit: 1350 mg/kg	No Data

Acute Toxicity Estimates (ATE):

Dermal: 2700 mg/kg

Cancer Information:

This product does not contain 0.1% or more of the known or potential carcinogens listed in NTP, IARC, or OSHA.

Medical Conditions Aggravated by Exposure to Product: Skin disorders. Lung disorders. Cardiovascular disorders. Eye disorders. Respiratory system disorders.

Other: None known.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: No data available.

Chemical Fate Information: No data available.

13. DISPOSAL CONSIDERATIONS

Hazardous Waste Number: D002

Disposal Method: Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame,

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sparks or other sources of ignition. Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORTATION INFORMATION

DOT (Department of Transportation):

Identification Number: UN1824
Proper Shipping Name: Sodium Hydroxide Solution
Hazard class: 8
Packing Group: II
Label Required: CORROSIVE
Reportable Quantity (RQ): 1000# (Sodium Hydroxide).

15. REGULATORY INFORMATION

TSCA Inventory Status: This product or all components of this product are listed on the EPA/TSCA Inventory of Chemical Substances.

SARA Title III Section 311/312 Category Hazards: Please see Section 2 of this SDS.

<u>Regulated Components:</u> <u>Component</u>	<u>CAS</u> <u>Number</u>	<u>CERCLA</u> <u>RQ</u>	<u>SARA</u> <u>EHS</u>	<u>SARA</u> <u>313</u>	<u>U.S.</u> <u>HAP</u>	<u>WI</u> <u>HAP</u>	<u>Prop</u> <u>65</u>
Sodium Hydroxide	1310-73-2	Yes	No	No	No	Yes	No

16. OTHER INFORMATION

Hazard Rating System

Health: 4
Flammability: 0
Reactivity: 2

* = Chronic Health Hazard

NFPA Rating System

Health: 3
Flammability: 0
Reactivity: 1
Special Hazard: None

SDS Abbreviations

N.A. = Not Applicable
N.D. = Not Determined
HAP = Hazardous Air Pollutant
VOC = Volatile Organic Compound
C = Ceiling Limit
N.E./Not Estab. = Not Established

SDS Prepared by: JAK

Reason for Revision: Changes made throughout the SDS. New format.

Revised: 03-11-2022

Replaces: 06-25-2014

The data in this Safety Data Sheet relates 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 warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your

consideration, investigation, and verification.