Safety Data Sheet

CAUSTIC SODA LIQUID 50%

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
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SECTION 1: Identification

Identification

Product Name	:	CAUSTIC SODA LIQUID 50%
Product code	:	AL0050
CAS-No.	:	MIXTURE
Synonyms	:	Lye, Sodium Hydroxide Solution, Alkali, Caustic, Sodium Hydrate
Recommended use	:	No additional information available
Restrictions on use	:	No additional information available

Supplier

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

Emergency telephone number

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

SECTION 2: Hazard(s) identification

Classification of the substance or mixture

GHS US classification

Corrosive to metals Category 1
Acute toxicity (oral) Category 4
Skin corrosion/irritation Category 1B
Serious eye damage/eye irritation Category 1
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation

GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Danger

Hazard statements (GHS US) : May be corrosive to metals
Harmful if swallowed
Causes severe skin burns and eye damage
May cause respiratory irritation

Precautionary statements (GHS US)

Prevention : Keep only in original container.
Do not breathe dust, mist, spray, vapors.

Wash hands, forearms and face 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: Call a poison center or doctor if you feel unwell.
If swallowed: rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep 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.
Specific treatment (see supplemental first aid instruction on the SDS).
Rinse mouth.
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 contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Hazards not otherwise classified

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.

Unknown acute toxicity (GHS US)

Unknown acute toxicity (GHS US) : 50% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/Information on ingredients

Substances/ Mixtures

Name	Product identifier	%	GHS US classification
SODIUM HYDROXIDE	CAS-No.: 1310-73-2	50 – 75	Met. Corr. 1, H290 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 3, H402

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

SECTION 4: First-aid measures

Description of first aid measures

First-aid measures general : Seek medical attention immediately.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Get immediate medical attention. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. SYMPTOMS MAY BE DELAYED.

First-aid measures after skin contact : Get immediate medical advice/attention. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If skin feels slippery, caustic may still be present in sufficient quantities to cause rash or burn. Continue washing until slick feeling is gone. Do not apply oils, ointments, or creams unless directed by a physician. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

First-aid measures after 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. Remove contact lenses, if present and easy to do. Continue rinsing. Do not attempt to neutralize with chemical agents. Do not apply oils, ointments, or creams unless directed by a physician. Eye irrigation when started within seconds is essential to achieving maximum effectiveness.

First-aid measures after 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.

Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : May cause respiratory irritation. Vapor, dusts, mists or spray may irritate or burn: respiratory tracts, nose, mouth, and throat. . May cause shortness of breath, tightness of the chest, a sore throat and cough. Vapor, dust, mist or spray may cause: coughing, pulmonary edema, chemical pneumonitis, permanent damage. Effects may be delayed.

Symptoms/effects after 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 and inflammation.

Symptoms/effects after eye contact : CORROSIVE-CAUSES SEVERE IRRITATION AND BURNS. Possible effects following exposure: Permanent eye damage. Visual disturbances. blisters. disintegration, scarring, clouding, ulcerations, blindness, corneal damage. Vapor, dusts, mists or spray may irritate or burn: respiratory tracts, nose, mouth, and throat. . At high concentrations: May cause destruction of eye tissue. long term effects. Glaucoma. Cataract.

Symptoms/effects after ingestion : CORROSIVE. Aspiration into the lungs may occur during ingestion or vomiting, resulting in severe pulmonary injury. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain. May be fatal if swallowed. Causes damage to. mouth. throat. stomach. gastrointestinal tract. esophagus. May perforate the esophagus or the digestive tract. May cause gastrointestinal irritation, nausea, vomiting and diarrhea. Effects may be delayed.

Most Important Symptoms/Effects	:	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.
Immediate medical attention and special treatment, if necessary	:	Treat symptomatically.

SECTION 5: Fire-fighting measures

Extinguishing media

Suitable extinguishing media	:	Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	:	Do not use a heavy water stream.

Specific hazards arising from the chemical

Fire hazard	:	No fire hazard.
Explosion hazard	:	No direct explosion hazard.
Reactivity in case of fire	:	On contact with water: On contact with acid: May release heat. Contact with metals could evolve flammable hydrogen gas. Exposure to fire may cause containers to rupture/explode. Do not allow water to enter the vessels, a violent reaction may occur.
Hazardous decomposition products	:	Toxic fumes may be released. Corrosive vapors. metal oxides. sodium oxides. halogenated compounds.
Firefighting instructions	:	Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection. Evacuate personnel to a safe area. Do not approach fire except upwind and only with proper skin and respiratory protection (supplied air only). Use water spray or fog for cooling exposed containers.
Protection during firefighting	:	Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

General measures	:	Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage. Maintain adequate ventilation.
Protective equipment	:	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	:	Evacuate unnecessary personnel. Stop leak if safe to do so.

Environmental precautions

Environmental precautions	:	Avoid release to the environment.

Methods and material for containment and cleaning up

For containment : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk. May react violently with acids. May react violently with water. Flush remaining residue with water and neutralize with dilute acid and dispose of properly.

Methods for cleaning up : Take up liquid spill into absorbent material.

Other information : Dispose of materials or solid residues at an authorized site.

Reference to other sections : For further information refer to section 13.

SECTION 7: Handling and storage

Precautions for safe handling

Additional hazards when processed : 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 eruption of highly caustic solution.

Precautions for safe handling : Avoid contact with skin and eyes. Use only outdoors or in a well-ventilated area. Avoid the formation of mists in the atmosphere. Avoid dust formation.

Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

Conditions for safe storage, including any incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.

Storage conditions : Store in corrosive resistant container with a resistant inner liner. Keep only in original container. Store in a secure manner. 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. Do not freeze. 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.

Incompatible materials : Metals. Keep away from incompatibles. Refer to Section 10 on Incompatible Materials.

Storage temperature : STORE ABOVE 60°F

Packaging materials : Always store product in container of same material as original container.

SECTION 8: Exposure controls/personal protection

Control parameters

Component	ACGIH	OSHA
SODIUM HYDROXIDE	2 mg/m³ Ceiling	2 mg/m³ TWA

Appropriate engineering controls

Appropriate engineering controls : General room ventilation is required. Local exhaust ventilation, process enclosures or other engineering controls may be needed to maintain airborne levels below recommended exposure limits. 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.

Environmental exposure controls : Avoid release to the environment.

Individual protection measures/Personal protective equipment

Personal protective equipment	:	Wear safety footwear. Wear protective gloves. Protective goggles. Face shield. Use protective apron.
Hand protection	:	Protective gloves. Chemical-resistant. Impervious.
Eye protection	:	Do not wear contact lenses. Wear chemical safety goggles and a full face shield while handling this product.
Skin and body protection	:	Prevent contact with this product. Wear gloves and protective clothing depending on condition of use.
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 information	:	Wash with soap and water before meal times and at the end of each work shift. Good manufacturing practices require gross amounts of any chemical be removed from skin as soon as practical, especially before eating or smoking. Food, beverages, and tobacco products should not be carried, stored or consumed where this material is in use. Protective equipment. Eye-wash station. Safety shower. Rubber apron. Rubber boots. Protective clothing.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	Clear to slightly turbid. Colorless to slightly colored.
Odor	:	No odor.
Odor threshold	:	No data available
pH	:	≥ 12
Melting point	:	≈ 50 (50 – 58) °F
Freezing point	:	59 °F
Boiling point	:	≈ 284 (284 – 293) °F
Flash point	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	Not applicable.
Vapor pressure	:	No data available
Relative vapor density at 20°C	:	No data available
Relative density	:	1.528
Solubility	:	Complete.
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
VOC content	:	0 %

SECTION 10: Stability and reactivity

Information on stability and reactivity

Reactivity	:	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	:	Stable under normal conditions.

Possibility of hazardous reactions	:	Contact with water may cause violent reaction with evolution of heat. To Dilute: add product slowly to lukewarm water; not water to product. Exothermic reaction on contact with : Acids. Incompatible materials. May react with certain metals to produce flammable hydrogen gas. Contact with acids, halogenated organics, organic nitro compounds, glycols, or sodium tetraborate may produce flammable hydrogen gas. Contact with,2-dichloroethylene, trichloroethylene, tetrachloroethane, or phosphorous can form spontaneously flammable chemicals. May react with various food sugars to form carbon monoxide.
Conditions to avoid	:	Moisture. Incompatible materials. Extremely high or low temperatures.
Incompatible materials	:	acids. strong oxidizing agents. chloroform. ammonia. glycols. lead. brass. phosphorous pentoxide. organic materials. methanol. copper. metals such as aluminum, zinc, tin, etc. organic nitro compounds. chlorinated hydrocarbons. fluorinated hydrocarbons. acetaldehyde. chlorine trifluoride. hydroquinone. maleic anhydride. tetrahydrofuran. acrolein. phosphorous. trichloroethylene. leather. wool. magnesium. silver nitrate. acrylonitrile. organic peroxides. halogenated compounds. sodium tetrahydroborate. explosives. zirconium. bronze. other alkali sensitive metals or alloys. chromium. 1,2-dichloroethylene. tetrachloroethane. food sugars. metals.
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hydrogen. Carbon monoxide. phosphine. dichloroacetylene.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity (oral)	:	Harmful if swallowed.
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Not classified

Numerical measures of toxicity

Component	Oral LD50	Dermal LD50	Inhalation LC50
SODIUM HYDROXIDE	Rat: 325 mg/kg	Rabbit: 1350 mg/kg	No data available

ATE Values: CAUSTIC SODA LIQUID 50% (MIXTURE)

ATE US (oral)	650 mg/kg body weight

Skin corrosion/irritation	:	Causes severe skin burns.
Serious eye damage/irritation	:	Causes serious eye damage.
Respiratory or skin sensitization	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
STOT-single exposure	:	May cause respiratory irritation.
STOT-repeated exposure	:	Not classified
Aspiration hazard	:	Not classified
Viscosity, kinematic	:	No data available
Symptoms/effects after inhalation	:	May cause respiratory irritation. Vapor, dusts, mists or spray may irritate or burn: respiratory tracts, nose, mouth, and throat. . May cause shortness of breath, tightness of the chest, a sore throat and cough. Vapor, dust, mist or spray may cause: coughing, pulmonary edema, chemical pneumonitis, permanent damage. Effects may be delayed.
Symptoms/effects after 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 and inflammation.

Symptoms/effects after eye contact	:	CORROSIVE-CAUSES SEVERE IRRITATION AND BURNS. Possible effects following exposure: Permanent eye damage. Visual disturbances. blisters. disintegration, scarring, clouding, ulcerations, blindness, corneal damage. Vapor, dusts, mists or spray may irritate or burn: respiratory tracts, nose, mouth, and throat. . At high concentrations: May cause destruction of eye tissue. long term effects. Glaucoma. Cataract.
Symptoms/effects after ingestion	:	CORROSIVE. Aspiration into the lungs may occur during ingestion or vomiting, resulting in severe pulmonary injury. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain. May be fatal if swallowed. Causes damage to. mouth. throat. stomach. gastrointestinal tract. esophagus. May perforate the esophagus or the digestive tract. May cause gastrointestinal irritation, nausea, vomiting and diarrhea. Effects may be delayed.
Most Important Symptoms/Effects	:	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.
Other information	:	No additional information available

SECTION 12: Ecological information

Toxicity

No additional information available

Persistence and degradability

No additional information available

SECTION 13: Disposal considerations

Disposal methods

Regional waste regulation	:	U.S. - RCRA (Resource Conservation Recovery Act) - D Series Wastes - Corrosivity D002.
Waste treatment methods	:	Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information	:	Do not re-use empty containers.

SECTION 14: Transport information

Modes of transport

DOT (Department of Transportation):

Identification Number (DOT)	:	UN1824
Proper Shipping Name (DOT)	:	Sodium hydroxide solution
Hazard Class (DOT)	:	8

Packing group (DOT) : II
Labels Required (DOT) : Corrosive

IMDG (International Maritime Dangerous Goods Code):

Identification Number (IMDG) : UN1824
Proper Shipping Name (IMDG) : SODIUM HYDROXIDE SOLUTION
Hazard Class (IMDG) : 8
Packing group (IMDG) : II
Labels Required (IMDG) : Corrosive substances

IATA (International Air Transport Association):

Identification Number (IATA) : UN1824
Proper Shipping Name (IATA) : Sodium hydroxide solution
Hazard Classes (IATA) : 8
Packing group (IATA) : II
Labels Required (IATA) : Corrosive

Environmental hazards

No additional information available

Other transport information

The transportation classifications provided on this SDS are for informational purposes only and based upon the properties of the product as described in this document. The listed transportation classifications may not address variations due to changes in package size, mode of shipment, regional or country regulations, or other regulatory descriptors.

DOT RQ Table

Name	DOT RQ
SODIUM HYDROXIDE	1000 lbs RQ

SECTION 15: Regulatory information

US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

SODIUM HYDROXIDE (1310-73-2)

CERCLA RQ	1000 lb

International Regulations

No additional information available

US State regulations

Component	CAS No.	State or local regulations
SODIUM HYDROXIDE	1310-73-2	Wisconsin HAP

SECTION 16: Other information

Hazard Rating System

Health: 3
Flammability: 0
Physical: 2

NFPA Rating System

NFPA health hazard: 3
NFPA fire hazard: 0
NFPA reactivity: 1

Abbreviations and acronyms	
HAP	Hazardous Air Pollutant
VOC	Volatile Organic Compound
STEL	Short Term Exposure Limit
TWA	Total Average Weight
RQ	Reportable Quantity

Revision date: 4/15/2024
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Indication of changes: Changes made throughout the SDS.New format.
SDS Prepared by: AF

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