

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name Sodium Hydroxide
CAS number 1310-73-2
Synonyms Caustic soda; Lye

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses Laboratory chemicals.

1.3 Details of the supplier of the safety data sheet

Company Lab Alley, LLC
12501 Pauls Valley Road
Austin, Texas 78737
U.S.A.
Telephone 512-668-9918
Fax 512-886-4008

1.4 Emergency telephone

Emergency Phone # US & Canada: 1-800-535-5053 INFOTRAC
International 1-352-323-3500 INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Corrosive to Metals	Category 1
Skin Corrosion	Category 1A
Serious Eye Damage	Category 1
Specific Target Organ Toxicity - (single exposure)	Category 3
Target Organ(s) - Respiratory system.	

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

Hazard statements

May be corrosive to metals.
Causes severe skin burns and eye damage.
May cause respiratory irritation.

Precautionary statements

Prevention: Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands, and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Keep only in original container.

Response: Immediately call a POISON CENTER or doctor/physician.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting.

Spills: Absorb spillage to prevent material damage.

Storage: Store locked up. Store in a well-ventilated place. Keep container tightly closed. Store in corrosive-resistant polypropylene container with a resistant liner. Store in a dry place.

Disposal: Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None identified.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Sodium hydroxide	Caustic soda; Lye	1310-73-2	95-100%
Sodium carbonate	Washing soda; Soda ash	497-19-8	<3%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.
In case of skin contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
In case of eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
If swallowed	Do not induce vomiting. Call a physician or Poison Control Center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. Product is a corrosive material. Ingestion causes severe swelling, severe damage to the delicate tissue, and danger of perforation.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	Carbon dioxide (CO ₂).

5.2 Specific hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. Water reactive. Corrosive material. Causes severe burns by all exposure routes. Hazardous Combustion Products: Carbon monoxide, Carbon dioxide, Sodium oxides.

5.3 Special protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

5.4 Further information

Flash Point No information available.

Autoignition Temperature No information available.

Explosion limits

Upper No data available.

Lower No data available.

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

NFPA

Health	Flammability	Instability	Physical hazards
3	0	1	COR

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid dust formation. Do not get in eyes, on skin, or on clothing.

6.2 Environmental precautions

Should not be released into the environment.

6.3 Methods and materials for containment and cleaning up

Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal.

6.4 Reference to other sections

See Section 2 for full list of hazard and precaution statements. See Section 12 for additional Ecological Information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Do not breathe mist/vapors/spray. Avoid dust formation.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities**Storage conditions**

Keep containers tightly closed in a dry, cool, and well-ventilated place. Corrosives area.

Incompatibilities

Water, Metals, Acids.

SECTION 8: Exposure controls/personal protection**8.1 Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Component	Type	Value
Sodium hydroxide	TWA	2 mg/m3
	Ceiling	2 mg/m3

US. ACGIH Threshold Limit Values

Component	Type	Value
Sodium hydroxide	Ceiling	2 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value
Sodium hydroxide	IDLH	10 mg/m3
	Ceiling	2 mg/m3

Biological occupational exposure limits

No information available.

8.2 Exposure controls**Appropriate engineering controls**

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment**Eye/face protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Body Protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Control of environmental exposure

No information available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Solid
Appearance	White pellets
Odor	Odorless
Odor Threshold	No information available
pH	14 (5%)
Melting Point/Range	318 °C / 604.4 °F
Boiling Point/Range	1390 °C / 2534 °F @ 760 mmHg
Evaporation Rate	No information available
Flammability (solid)	Not applicable
Flammability or explosive limit	No data available
Upper	
Lower	
Vapor Pressure	1 mmHg @ 739 °C
Vapor Density	1.38 (Air - 1.0)
Density	2.13 g/cm ³
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temp	No information available
Decomposition Temp	No information available
Viscosity	No information available
Molecular Formula	NaOH
Molecular Weight	39.997 g/mol
VOC Content(%)	No information available
Oxidizing properties	Not oxidizing

9.2 Other safety information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

Reacts violently with strong acids. May be corrosive to metals.

10.2 Chemical stability

Water reactive, hygroscopic.

10.3 Possibility of hazardous reactions

None under normal processing.

10.4 Conditions to avoid

Dust formation. Incompatible products. Excess heat. Exposure to moist air or water.

10.5 Incompatible materials

Water, Metals, Acids.

10.6 Hazardous decomposition products

Carbon monoxide. Carbon dioxide. Sodium oxides.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium hydroxide	-	1350 mg/kg (Rabbit)	-
Sodium carbonate	2800 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	2.3 mg/L 2h (Rat)

Skin corrosion/irritation

Causes severe burns.

Serious eye damage/eye irritation

Risk of serious damage to eyes.

Respiratory or skin sensitization

No information available.

Germ cell mutagenicity

Mutagenic effects have occurred in experimental animals.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Sodium hydroxide	1310-73-2	Not listed	Not listed	Not listed	Not listed	Not listed

Sodium carbonate	497-19-8	Not listed	Not listed	Not listed	Not listed	Not listed
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Specific target organ toxicity - single exposure

Respiratory system.

Specific target organ toxicity - repeated exposure

None known.

Reproductive toxicity

No information available.

Chronic effects

Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

11.2 Additional Information

The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

SECTION 12: Ecological information

12.1 Toxicity

Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

Product		Species	Test Results
Sodium hydroxide	LC50	Freshwater Fish	45.4 mg/L, 96h
	LC50	Gambusia affinis	125 mg/L, 96h
	EC50	Ceriodaphnia (Water Flea)	40.4 mg/L, 48h
	EC50	Photobacterium phosphoreum	22 mg/L, 15min
Sodium carbonate	EC50	Freshwater Algae	242 mg/L, 120h
	LC50	Lepomic macrochirus	300 mg/L, 96h
	LC50	Gambusia affinis	740 mg/L, 96h
	EC50	Water Flea	265 mg/L, 48h

12.2 Persistence and degradability

No data is available on the degradability of this substance.

12.3 Bio accumulative potential

No information available.

12.4 Mobility in soil

This product is water soluble and may disperse in soil. Expected to be mobile in soil.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

UN-no	UN1823
Proper Shipping Name	SODIUM HYDROXIDE SOLID
Hazard Class	8
Packing Group	II

IMDG

UN-no	UN1823
Proper Shipping Name	SODIUM HYDROXIDE SOLID
Hazard Class	8
Packing Group	II

IATA

UN-no	UN1823
Proper Shipping Name	SODIUM HYDROXIDE SOLID
Hazard Class	8
Packing Group	II

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not applicable.

CERCLA Hazardous Substance List (40 CFR 302.4)

Listed, Sodium hydroxide (CAS #1310-73-2), RQ: 1000 lb.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

Acute Health Hazard.

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Listed, Sodium hydroxide (CAS #1310-73-2), 1000 lb.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed.

US state regulations

US. Massachusetts RTK - Substance List

Listed, Sodium hydroxide (CAS #1310-73-2).

US. New Jersey Worker and Community Right-to-Know Act

Listed, Sodium hydroxide (CAS #1310-73-2).

US. Pennsylvania Worker and Community Right-to-Know Law

Listed, Sodium hydroxide (CAS #1310-73-2).

California Proposition 65

Not listed.

SECTION 16: Other information

Issue date: 02/11/2010

Revision 1: 10/28/2019

Revision 2: 08/28/2024

Revision 3: 10/14/2024

SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.