

SECTION 1: Identification

1.1. Identification

Product form	: Substance
Substance name	: Sodium Hydroxide
CAS-No.	: 1310-73-2
Product code	: LC23900
Formula	: NaOH
Synonyms	: anhydrous caustic soda / caustic alkali / caustic flake / caustic soda, solid / caustic white / caustic, flaked / hydrate of soda / hydroxide of soda / LEWIS red devil lye / soda lye / sodium hydrate / sodium hydroxide, pellets
BIG No	: 10037

1.2. Recommended use and restrictions on use

Use of the substance/mixture	: Industrial use
Recommended use	: Laboratory chemicals
Restrictions on use	: Not for food, drug or household use

1.3. Supplier

LabChem, Inc.
1010 Jackson's Pointe Ct.
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number	: CHEMTREC: 1-800-424-9300 or +1-703-741-5970
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SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Skin corrosion/irritation Category 1A	H314	Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1	H318	Causes serious eye damage
Hazardous to the aquatic environment – Acute Hazard Category 3	H402	Harmful to aquatic life
Full text of H statements : see section 16		

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US)



Signal word (GHS US)

: Danger

Hazard statements (GHS US)

: H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H402 - Harmful to aquatic life

Precautionary statements (GHS US)

: P260 - Do not breathe dust, vapors.
P264 - Wash exposed skin thoroughly after handling.
P273 - Avoid release to the environment.

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P280 - Wear eye protection, face protection, protective clothing, protective gloves.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a poison center or doctor/physician.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P363 - Wash contaminated clothing before reuse.
P405 - Store locked up.
P501 - Dispose of contents/container to Comply with applicable regulations.

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : None under normal conditions.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	GHS US classification
Sodium Hydroxide (Main constituent)	CAS-No.: 1310-73-2	100	Skin Corr. 1A, H314 Eye Dam. 1, H318 Aquatic Acute 3, H402

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Observe (own) safety. If possible, approach victim and check vital functions. In case of injury and/or intoxication, call the European emergency number 112. Treat symptoms starting with most life-threatening injuries and disorders. Keep victim under observation, possibility of delayed symptoms.

First-aid measures after inhalation : Remove victim into fresh air. In case of respiratory problems, consult a doctor/medical service.

First-aid measures after skin contact : If possible, wipe up/dry remove chemical. Then rinse/shower immediately for 30 minutes with (lukewarm) water. Cut clothing; never remove burnt clothing from the wound. Do not give any pain medication. Consult a doctor/medical service.

First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult a doctor/medical service.

First-aid measures after ingestion : Rinse mouth with water. Immediately consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms : Causes severe skin burns. Causes serious eye damage.

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Symptoms/effects after inhalation	: ON CONTINUOUS EXPOSURE/CONTACT: Respiratory difficulties. Corrosion of the upper respiratory tract. Coughing. Dry/sore throat. FOLLOWING SYMPTOMS MAY APPEAR LATER: Risk of lung edema. Possible laryngeal spasm/oedema. Possible oedema of the upper respiratory tract.
Symptoms/effects after skin contact	: Caustic burns/corrosion of the skin. Blisters. Slow-healing wounds.
Symptoms/effects after eye contact	: Corrosion of the eye tissue. Permanent eye damage.
Symptoms/effects after ingestion	: Nausea. Dry/sore throat. Abdominal pain. Burns to the gastric/intestinal mucosa. Possible esophageal perforation. Shock. Blood in vomit. Difficulty in swallowing. Bleeding of the gastrointestinal tract.
Chronic symptoms	: Skin rash/inflammation. Dry skin. Gastrointestinal complaints. Possible inflammation of the respiratory tract.

4.3. Immediate medical attention and special treatment, if necessary

Obtain medical assistance.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Adapt extinguishing media to the environment for surrounding fires.

5.2. Specific hazards arising from the chemical

Fire hazard : DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard : DIRECT EXPLOSION HAZARD. No direct explosion hazard. INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions : Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

Protection during firefighting : Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Absorb spillage to prevent material-damage. Dike and contain spill.

6.1.1. For non-emergency personnel

Protective equipment : Gloves (EN 374). Face shield (EN 166). Corrosion-proof suit (EN 14605). Dust cloud production: self-contained breathing apparatus (EN 136 + EN 137). Contact with moisture/water: self-contained breathing apparatus (EN 136 + EN 137). Contact with moisture/water: gas-tight suit (EN 943).

Emergency procedures : Mark the danger area. Prevent dust cloud formation. No naked flames. Corrosion-proof appliances. Avoid ingress of water in the containers. Wash contaminated clothes. On contact with moisture/water: keep upwind. On contact with moisture/water: consider evacuation. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.

Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Do not breathe dust.

Emergency procedures : Stop release.

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6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

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| For containment | : Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. Hazardous reaction: measure explosive gas-air mixture. If reacting: dilute combustible/toxic gases/vapours. Take account of toxic/corrosive precipitation water. |
| Methods for cleaning up | : Collect the spill only if it is in a dry state. Wetted substance: cover with powdered limestone or dry sand, earth, vermiculite. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Under controlled conditions: neutralize leftovers with dilute acid solution. Possible violent reaction if you neutralize. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling. |

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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| Precautions for safe handling | : Avoid raising dust. Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Keep container tightly closed. Use corrosionproof equipment. Thoroughly clean/dry the installation before use. Avoid contact of substance with water. Do not discharge the waste into the drain. |
| Hygiene measures | : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse. Separate working clothes from town clothes. Launder separately. |

7.2. Conditions for safe storage, including any incompatibilities

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| Incompatible products | : combustible materials. metals. Strong acids. Strong oxidizers. Protect from moisture. |
| Incompatible materials | : incompatible materials. Moisture. Heat sources. |
| Storage temperature | : 20 °C |
| Heat-ignition | : KEEP SUBSTANCE AWAY FROM: heat sources. |
| Prohibitions on mixed storage | : KEEP SUBSTANCE AWAY FROM: combustible materials. oxidizing agents. strong acids. metals. organic materials. water/moisture. |
| Storage area | : Meet the legal requirements. Store at ambient temperature. Store in a dry area. Keep locked up. Unauthorized persons are not admitted. |
| Special rules on packaging | : SPECIAL REQUIREMENTS: closing, watertight, corrosion-proof, clean, dry, correctly labelled, meet the legal requirements. Secure fragile packagings in solid containers. |
| Packaging materials | : SUITABLE MATERIAL: stainless steel, nickel, polyethylene, paper. MATERIAL TO AVOID: lead, aluminium, copper, tin, zinc, bronze, textile. |

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

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| Appropriate engineering controls | : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate general and local exhaust ventilation. |
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8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Safety glasses. Protective clothing. Gloves.

Materials for protective clothing:

GIVE EXCELLENT RESISTANCE: nitrile rubber. PVC. GIVE GOOD RESISTANCE: natural rubber. neoprene (chloroprene rubber). GIVE LESS RESISTANCE: butyl rubber. polyethylene. PVA. GIVE POOR RESISTANCE: natural fibres

Hand protection:

Protective gloves against chemicals (EN 374)

Eye protection:

In case of dust production: protective goggles (EN 166). Face shield (EN 166)

Skin and body protection:

Corrosion-proof clothing (EN 14605)

Respiratory protection:

Dust production: dust mask with filter type P3. High dust production: self-contained breathing apparatus (EN 136 + EN 137)

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid. Crystalline powder. Little spheres. Lumps. Needles. Scales. Flakes.
Color	: White
Odor	: Odorless
Odor threshold	: No data available
pH	: 14 (5 %)
Melting point	: 323 °C (1013 hPa)
Freezing point	: No data available
Boiling point	: 1388 °C (1013 hPa)
Flash point	: Not applicable (solid)
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: < 0.01 hPa (25 °C)
Relative vapor density at 20°C	: Not applicable (solid)
Particle size	: No data available in the literature
Relative density	: 2.13 (20 °C)
Density	: 2130 kg/m ³ (20 °C)
Molecular mass	: 40 g/mol
Solubility	: Exothermically soluble in water. Soluble in ethanol. Soluble in methanol. Soluble in glycerol. Water: 100 g/100ml (25 °C) Ethanol: soluble
Log Pow	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available in the literature

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Viscosity, kinematic	: No data available in the literature
Viscosity, dynamic	: 0.997 mPa.s (25 °C, Test data, 0.5 mol/l)
Explosion limits	: No data available
Explosive properties	: Not applicable.
Oxidizing properties	: None.

9.2. Other information

Minimum ignition energy	: Not applicable
Saturation concentration	: 671 g/m ³
VOC content	: Not applicable (inorganic)
Other properties	: Translucent. Hygroscopic. Basic reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

May be corrosive to metals. Absorbs the atmospheric CO₂. Violent to explosive reaction with (some) acids. Reacts violently with many compounds: heat release resulting in increased fire or explosion risk. Reacts exothermically on exposure to water (moisture) with combustible materials: risk of spontaneous ignition. Violent exothermic reaction with water (moisture): release of corrosive mist. Reacts exothermically on exposure to water (moisture) with combustible materials: risk of spontaneous ignition.

10.2. Chemical stability

Hygroscopic. Unstable on exposure to air.

10.3. Possibility of hazardous reactions

Reacts violently with acids. Reacts violently with water.

10.4. Conditions to avoid

Moisture. Incompatible materials.

10.5. Incompatible materials

Water. Strong oxidizers. Strong acids. metals. combustible materials.

10.6. Hazardous decomposition products

Sodium oxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Causes severe skin burns. pH: 14 (5 %)
Serious eye damage/irritation	: Causes serious eye damage. pH: 14 (5 %)
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified

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Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available in the literature
Likely routes of exposure	: Skin and eye contact.
Potential Adverse human health effects and symptoms	: Causes severe skin burns. Causes serious eye damage.
Symptoms/effects after inhalation	: ON CONTINUOUS EXPOSURE/CONTACT: Respiratory difficulties. Corrosion of the upper respiratory tract. Coughing. Dry/sore throat. FOLLOWING SYMPTOMS MAY APPEAR LATER: Risk of lung edema. Possible laryngeal spasm/oedema. Possible oedema of the upper respiratory tract.
Symptoms/effects after skin contact	: Caustic burns/corrosion of the skin. Blisters. Slow-healing wounds.
Symptoms/effects after eye contact	: Corrosion of the eye tissue. Permanent eye damage.
Symptoms/effects after ingestion	: Nausea. Dry/sore throat. Abdominal pain. Burns to the gastric/intestinal mucosa. Possible esophageal perforation. Shock. Blood in vomit. Difficulty in swallowing. Bleeding of the gastrointestinal tract.
Chronic symptoms	: Skin rash/inflammation. Dry skin. Gastrointestinal complaints. Possible inflammation of the respiratory tract.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air	: Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	: Harmful to crustacea (Daphnia). Slightly harmful to fishes. Groundwater pollutant. pH shift.

Sodium Hydroxide (1310-73-2)

LC50 fish 1	189 mg/l (48 h, Leuciscus idus, Fresh water, Experimental value)
EC50 Daphnia 1	40.4 mg/l (48 h, Ceriodaphnia sp., Experimental value, Locomotor effect)

12.2. Persistence and degradability

Sodium Hydroxide (1310-73-2)

Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

12.3. Bioaccumulative potential

Sodium Hydroxide (1310-73-2)

Bioaccumulative potential	Not bioaccumulative.
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12.4. Mobility in soil

Sodium Hydroxide (1310-73-2)

Surface tension	No data available in the literature
Ecology - soil	No (test)data on mobility of the substance available.

12.5. Other adverse effects

No additional information available

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SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Do not discharge into drains or the environment. Dispose of at authorized waste collection point. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Should not be landfilled with household waste.

Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

SECTION 14: Transport information

14.1. UN number

DOT NA No : UN1823

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Sodium hydroxide, solid

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : 8

Hazard labels (DOT) : 8



14.4. Packing group

Packing group (DOT) : II

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

UN-No.(DOT) : UN1823

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DOT Special Provisions (49 CFR 172.102)	: IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2). IP2 - When IBCs other than metal or rigid plastics IBCs are used, they must be offered for transportation in a closed freight container or a closed transport vehicle. IP4 - Flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner. T3 - 2.65 178.274(d)(2) Normal..... 178.275(d)(2) TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 154
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 212
DOT Packaging Bulk (49 CFR 173.xxx)	: 240
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 15 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 50 kg
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other	: 52 - Stow "separated from" acids

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Sodium Hydroxide (1310-73-2)

Not subject to reporting requirements of the United States SARA Section 313

RQ (Reportable quantity, section 304 of EPA's List of Lists)	1000 lb
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

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

15.2. International regulations

CANADA

Sodium Hydroxide (1310-73-2)

Listed on the Canadian DSL (Domestic Substances List)

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EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

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

Revision date : 07/10/2023

Full text of H- and EUH-statements: see section 16

H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H402	Harmful to aquatic life

NFPA health hazard

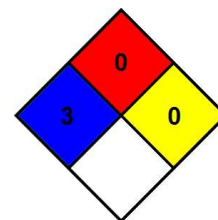
: 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard

: 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity

: 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Personal protection : F - Safety glasses, Gloves, Synthetic apron, Dust respirator

Safety Data Sheet (SDS), USA

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