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

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
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
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 011-703-527-3887

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 labelling
Hazard pictograms (GHS-US) : GHS05

Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H314 - Causes severe skin burns and eye damage.
H402 - Harmful to aquatic life

Precautionary statements (GHS-US) : P260 - Do not breathe dust, vapours.
P264 - Wash exposed skin thoroughly after handling.
P273 - Avoid release to the environment.
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): 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/doctor
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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Hydroxide (Main constituent)</td>
<td>(CAS-No.) 1310-73-2</td>
<td>100</td>
<td>Skin Corr. 1A, H314</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1, H318</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 3, H402</td>
</tr>
</tbody>
</table>

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 after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Wipe off dry product from skin. Remove clothing before washing. Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

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. Do not apply neutralizing agents. Take victim to an ophthalmologist.


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


Symptoms/effects after skin contact : Blisters. Caustic burns/corrosion of the skin. Slow-healing wounds.

Symptoms/effects after eye contact : Corrosion of the eye tissue. Permanent eye damage.


Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin. Skin rash/inflammation. Possible inflammation of the respiratory tract. Gastrointestinal complaints.

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: INDIRECT EXPLOSION HAZARD: Reactions with explosion hazards: see "Reactivity Hazard".

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. Violent exothermic reaction with water (moisture): release of corrosive mist. Reacts exothermically on exposure to water (moisture) with combustible materials: risk of spontaneous ignition.

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: Cool tanks/drum with water spray/remove them into safety. When cooling/extinguishing: no water in the substance. Use water moderately and if possible collect or contain it.


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


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.

6.2 Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3 Methods and material for containment and cleaning up

For containment: Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain.

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. Under controlled conditions: neutralize leftovers with dilute acid solution. Possible violent reaction if you neutralize. Carefully collect the spill/leftovers. 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

Precautions for safe handling: Avoid raising dust. Avoid contact of substance with water. 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 the substance free from contamination. Use corrosionproof equipment. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain.
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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


Storage temperature: 20 °C

Heat and ignition sources: KEEP SUBSTANCE AWAY FROM: heat sources.


Storage area: Store in a dry area. Keep container in a well-ventilated place. Keep locked up. Unauthorized persons are not admitted. Store at ambient temperature. Keep only in the original container. Meet the legal requirements.

Special rules on packaging: SPECIAL REQUIREMENTS: hermetical. watertight. corrosion-proof. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.


SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Sodium Hydroxide (1310-73-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
</tr>
<tr>
<td>OSHA</td>
</tr>
<tr>
<td>IDLH</td>
</tr>
<tr>
<td>NIOSH</td>
</tr>
</tbody>
</table>

8.2. 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.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Materials for protective clothing:
GIVE GOOD RESISTANCE: natural rubber. neoprene. nitrile rubber. GIVE LESS RESISTANCE: butyl rubber. polyethylene. PVA. GIVE POOR RESISTANCE: natural fibres

Hand protection:
Gloves

Eye protection:
Face shield. In case of dust production: protective goggles

Skin and body protection:
Corrosion-proof clothing. In case of dust production: head/neck protection

Respiratory protection:
Dust production: dust mask with filter type P3. High dust production: self-contained breathing apparatus
## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

**Physical state:** Solid  
**Colour:** White  
**Odour:** Odourless  
**Odour threshold:** No data available  
**pH:** 14 (5 %)  
**Melting point:** 323 °C  
**Freezing point:** No data available  
**Boiling point:** 1388 °C (1013.25 hPa)  
**Flash point:** Not applicable  
**Relative evaporation rate (butylacetate=1):** No data available  
**Flammability (solid, gas):** No data available  
**Vapour pressure:** < 0.1 hPa (20 °C)  
**Relative vapour density at 20 °C:** No data available  
**Relative density:** 2.13 (20 °C)  
**Density:** 2130 kg/m³  
**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  
**Viscosity, kinematic:** 0.53 mm²/s (25 °C, 1 mol/l)  
**Viscosity, dynamic:** 0.997 mPa.s (25 °C, Test data)  
**Explosive limits:** No data available  
**Explosive properties:** Not applicable.  
**Oxidising properties:** None.

### 9.2. Other information

**Minimum ignition energy:** Not applicable  
**Saturation concentration:** 671 g/m³  
**VOC content:** Not applicable (inorganic)  
**Other properties:** Translucent. Hygroscopic. Substance has 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. 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


### 10.6. Hazardous decomposition products

Sodium oxide.
SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure: Skin and eyes contact
Acute toxicity: Not classified
Skin corrosion/irritation: Causes severe skin burns and eye damage.
  pH: 14 (5 %)
Serious eye damage/irritation: Causes serious eye damage.
  pH: 14 (5 %)
Respiratory or skin sensitisation: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
  (Based on available data, the classification criteria are not met)
Reproductive toxicity: Not classified
Specific target organ toxicity (single exposure): Not classified
Specific target organ toxicity (repeated exposure): Not classified
Aspiration hazard: Not classified
Potential adverse human health effects and symptoms: Causes severe skin burns. Causes serious eye damage.
Symptoms/effects after skin contact: Blisters. Caustic burns/corrosion of the skin. Slow-healing wounds.
Symptoms/effects after eye contact: Corrosion of the eye tissue. Permanent eye damage.
Chronic symptoms: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin. Skin rash/inflammation. Possible inflammation of the respiratory tract. Gastrointestinal complaints.

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.

Sodium Hydroxide (1310-73-2)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>45.4 mg/l (Other, 96 h, Salmo gairdneri, Static system, Fresh water, Experimental value)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>40.4 mg/l (Other, 48 h, Ceriodaphnia sp., Experimental value)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

Sodium Hydroxide (1310-73-2)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability: not applicable.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable (inorganic)</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable (inorganic)</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable (inorganic)</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

Sodium Hydroxide (1310-73-2)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>
12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Sodium Hydroxide (1310-73-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology - soil</td>
</tr>
</tbody>
</table>

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

| Waste disposal recommendations | Do not discharge into drains or the environment. 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. Recycle/reuse. Dilute. Neutralize. |


SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

| Transport document description | UN1823 Sodium hydroxide, solid, 8, II |
| UN-No.(DOT) | UN1823 |
| Proper Shipping Name (DOT) | Sodium hydroxide, solid |
| Transport hazard class(es) (DOT) | 8 - Class 8 - Corrosive material 49 CFR 173.136 |
| Packing group (DOT) | II - Medium Danger |
| Hazard labels (DOT) | 8 - Corrosive |

| DOT Packaging Non Bulk (49 CFR 173.xxx) | 212 |
| DOT Packaging Bulk (49 CFR 173.xxx) | 240 |
| 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). |
| DOT Packaging Exceptions (49 CFR 173.xxx) | 154 |
| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | 15 kg |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) | 50 kg |
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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

Other information: No supplementary information available.

SECTION 15: Regulatory information

15.1. US Federal regulations

**Sodium Hydroxide (1310-73-2)**

- Listed on the United States TSCA (Toxic Substances Control Act) inventory
- 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 listed, or excluded from listing, 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)

**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

Revision date: 02/21/2018

Full text of H-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 dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
| NFPA reactivity | 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.

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

- F - Safety glasses, Gloves, Synthetic apron, Dust respirator
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Information in this SDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and LabChem Inc assumes no liability resulting from the use of this SDS. The user must determine suitability of this information for his application.