1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Sodium hydroxide

Product Number: S8045
Brand: Sigma-Aldrich
Company: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5052
Emergency Phone #: (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: NaOH
Molecular Weight: 40.00 g/mol

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>1310-73-2</td>
<td>215-185-5</td>
<td>011-002-00-6</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Emergency Overview
OSHA Hazards
Severe eye irritant

HMIS Classification
Health Hazard: 3
Flammability: 0
Physical hazards: 1

NFPA Rating
Health Hazard: 3
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

- Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
- Skin: May be harmful if absorbed through skin. May cause skin irritation.
- Eyes: Causes serious eye irritation.
- Ingestion: May be harmful if swallowed.
4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Continue rinsing eyes during transport to hospital. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties
闪光点 not applicable
点燃温度 no data available

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Further information
The product itself does not burn.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Do not let product enter drains.

Methods for cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>1310-73-2</td>
<td>CEIL</td>
<td>2 mg/m3</td>
<td>1994-09-01</td>
<td>US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for</td>
</tr>
</tbody>
</table>
### Chemical Substances in the Work Environment; Annual Reports for the Year 2004: Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)

<table>
<thead>
<tr>
<th></th>
<th>CEIL</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure Level</td>
<td>2 mg/m³</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>Date</td>
<td>1989-03-01</td>
<td>1993-06-30</td>
</tr>
</tbody>
</table>

US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A

US. Department of Labor - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) 29 CFR 1910.1000 Air Contaminants.

### Personal Protective Equipment

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**
Handle with gloves.

**Eye protection**
Safety glasses

**Skin and body protection**
Choose body protection according to the amount and concentration of the dangerous substance at the workplace.

**Hygiene measures**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>pellets</td>
</tr>
<tr>
<td>Colour</td>
<td>white</td>
</tr>
</tbody>
</table>

**Safety data**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>13.0 - 14</td>
</tr>
<tr>
<td>Melting point</td>
<td>318 °C (604 °F)</td>
</tr>
<tr>
<td>Boiling point</td>
<td>1,390 °C (2,534 °F)</td>
</tr>
<tr>
<td>Flash point</td>
<td>not applicable</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>no data available</td>
</tr>
</tbody>
</table>
Upper explosion limit  no data available
Vapour pressure  
< 24.00 hPa (< 18.00 mmHg) at 20 °C (68 °F)  
4.00 hPa (3.00 mmHg) at 37 °C (99 °F)
Density  2.1300 g/cm³
Water solubility  no data available

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Materials to avoid
Strong oxidizing agents, Strong acids, Organic materials

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions.
Sodium/sodium oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity
no data available

Irritation and corrosion
Skin - rabbit - Severe skin irritation - 24 h
Eyes - rabbit - Severe eye irritation - 24 h

Sensitization
no data available

Chronic exposure
no data available

Signs and Symptoms of Exposure
spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Potential Health Effects

Inhalation  May be harmful if inhaled. May cause respiratory tract irritation.
Skin  May be harmful if absorbed through skin. May cause skin irritation.
Eyes  Causes serious eye irritation.
Ingestion  May be harmful if swallowed.

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)
no data available

Ecotoxicity effects
Toxicity to fish  LC50 - Gambusia affinis (Mosquito fish) - 125 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.

Further information on ecology
no data available

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-No.: 1823 Class: 8 Packing group: II
Proper shipping name: Sodium hydroxide, solid

IMDG
UN-No.: 1823 Class: 8 Packing group: II EMS-No: F-A, S-B
Proper shipping name: SODIUM HYDROXIDE, SOLID
Marine pollutant: No

IATA
UN-No.: 1823 Class: 8 Packing group: II
Proper shipping name: Sodium hydroxide, solid

15. REGULATORY INFORMATION

OSHA Hazards
Severe eye irritant

TSCA Status
On TSCA Inventory

DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components
Sodium hydroxide CAS-No. 1310-73-2 Revision Date 1989-12-01

Pennsylvania Right To Know Components
Sodium hydroxide CAS-No. 1310-73-2 Revision Date 1989-12-01

New Jersey Right To Know Components
Sodium hydroxide CAS-No. 1310-73-2 Revision Date 1989-12-01
California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information
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