

**Material Safety Data Sheet**

Version 3.2  
Revision Date 10/26/2007  
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**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Sodium hydroxide

Product Number : 221465  
Brand : Sigma-Aldrich

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +18003255832  
Fax : +18003255052  
Emergency Phone # : (314) 776-6555

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula : NaOH  
Molecular Weight : 40.00 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>Sodium hydroxide</b>			
1310-73-2	215-185-5	011-002-00-6	-

**3. HAZARDS IDENTIFICATION**

**Emergency Overview**  
**OSHA Hazards**  
Corrosive

**HMIS Classification**  
**Health Hazard:** 3  
**Flammability:** 0  
**Physical hazards:** 2

**NFPA Rating**  
**Health Hazard:** 3  
**Fire :** 0  
**Reactivity Hazard:** 2  
**Special hazard.:** W

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

**Skin** May be harmful if absorbed through skin. Causes skin burns.

**Eyes** Causes eye burns.

**Ingestion**

May be harmful if swallowed. Causes burns.

**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**

Flash point not applicable

Ignition temperature 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**

Components	CAS-No.	Value	Control parameters	Update	Basis
Sodium hydroxide	1310-73-2	CEIL	2 mg/m <sup>3</sup>	1994-09-01	US. American Conference of Governmental and

					Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004:Committees on Threshold Limit Values (TLVs ) and Biological Exposure Indices (BEIs)
		CEIL	2 mg/m3	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
		TWA	2 mg/m3	1993-06-30	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 work place.

##### 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

Form	pellets
Colour	white

### Safety data

pH	13.0 - 14
Melting point	318 °C (604 °F)
<b>Boiling point</b>	<b>1,390 °C (2,534 °F)</b>
Flash point	not applicable
Ignition temperature	no data available

Lower explosion limit	no data available
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

### Sensitisation

no data available

### Chronic exposure

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### 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. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	May be harmful if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.
Ingestion	May be harmful if swallowed. Causes burns.

## 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. Immobilization EC50 - *Daphnia* - 40.38 mg/l - 48 h

### 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-Number: 1823 Class: 8 Packing group: II

Proper shipping name: Sodium hydroxide, solid

### IMDG

UN-Number: 1823 Class: 8 Packing group: II EMS-No: F-A, S-B

Proper shipping name: SODIUM HYDROXIDE, SOLID

Marine pollutant: No

### IATA

UN-Number: 1823 Class: 8 Packing group: II

Proper shipping name: Sodium hydroxide, solid

## 15. REGULATORY INFORMATION

### OSHA Hazards

Corrosive

### 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.  
1310-73-2Revision Date  
1989-12-01**Pennsylvania Right To Know Components**

Sodium hydroxide

CAS-No.  
1310-73-2Revision Date  
1989-12-01**New Jersey Right To Know Components**

Sodium hydroxide

CAS-No.  
1310-73-2Revision 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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