



## Material Safety Data Sheet

Creation Date 11-Feb-2010

Revision Date 11-Feb-2010

Revision Number 1

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name** Sodium Hydroxide Solutions, 40 to 50%

**Cat No.** RP-254-43F; SS254-1; SS254-4; SS254-20; SS254-200; SS254-500; SS410-4; SS410-20; SS411-4; SS411-10

**Synonyms** Caustic soda solution; Lye solution (Certified)

**Recommended Use** Laboratory chemicals

**Company** Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

**Emergency Telephone Number**  
CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 703-527-3887

### 2. HAZARDS IDENTIFICATION

**DANGER!**

#### Emergency Overview

Causes severe burns by all exposure routes.

**Appearance** Clear

**Physical State** Liquid

**odor** odorless

**Target Organs** Eyes, Respiratory system, Skin, Gastrointestinal tract (GI)

#### Potential Health Effects

##### Acute Effects

##### Principle Routes of Exposure

**Eyes**

Causes severe burns. May cause blindness or permanent eye damage.

**Skin**

Causes severe burns. May be harmful in contact with skin.

**Inhalation**

Causes severe burns. May be harmful if inhaled.

**Ingestion**

Causes severe burns. May be harmful if swallowed.

##### **Chronic Effects**

Prolonged skin contact may defat the skin and produce dermatitis.

See Section 11 for additional Toxicological information.

##### **Aggravated Medical Conditions**

Preexisting eye disorders. Skin disorders.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Haz/Non-haz**

Component	CAS-No	Weight %
Water	7732-18-5	50 - 60
Sodium hydroxide	1310-73-2	40 - 50

### 4. FIRST AID MEASURES

<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
<b>Inhalation</b>	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.
<b>Ingestion</b>	Do not induce vomiting. Call a physician or Poison Control Center immediately.
<b>Notes to Physician</b>	Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

<b>Flash Point</b>	Not applicable
<b>Method</b>	No information available.
<b>Autoignition Temperature</b>	No information available.
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Suitable Extinguishing Media</b>	Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..
<b>Unsuitable Extinguishing Media</b>	Carbon dioxide (CO2).
<b>Hazardous Combustion Products</b>	No information available.
<b>Sensitivity to mechanical impact</b>	No information available.
<b>Sensitivity to static discharge</b>	No information available.

**Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors. Corrosive Material. Causes severe burns by all exposure routes.

**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

**NFPA**                      **Health** 3                      **Flammability** 0                      **Instability** 1                      **Physical hazards** N/A

## 6. ACCIDENTAL RELEASE MEASURES

- Personal Precautions** Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing.
- Environmental Precautions** Should not be released into the environment.
- Methods for Containment and Clean Up** Soak up with inert absorbent material. Keep in suitable and closed containers for disposal.

## 7. HANDLING AND STORAGE

- Handling** Use only under a chemical fume hood. Wear personal protective equipment. Ensure adequate ventilation. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing.
- Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Engineering Measures** Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

**Exposure Guidelines**

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium hydroxide	Ceiling: 2 mg/m <sup>3</sup>	(Vacated) Ceiling: 2 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> Ceiling: 2 mg/m <sup>3</sup>

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Sodium hydroxide	Ceiling: 2 mg/m <sup>3</sup>	Peak: 2 mg/m <sup>3</sup>	CEV: 2 mg/m <sup>3</sup>

**NIOSH IDLH:** Immediately Dangerous to Life or Health

**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 and 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

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- |                       |                           |
|-----------------------|---------------------------|
| <b>Physical State</b> | Liquid                    |
| <b>Appearance</b>     | Clear                     |
| <b>odor</b>           | odorless                  |
| <b>Odor Threshold</b> | No information available. |
| <b>pH</b>             | 12.0 Alkaline             |
| <b>Vapor Pressure</b> | 3 mmHg @ 37 °C            |
| <b>Vapor Density</b>  | > 1.0                     |
| <b>Viscosity</b>      | No information available. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Boiling Point/Range</b>	141.7°C / 287.1°F
<b>Melting Point/Range</b>	5 - 10.6°C / 41 - 51.1°F
<b>Decomposition temperature °C</b>	No information available.
<b>Flash Point</b>	Not applicable
<b>Evaporation Rate</b>	No information available.
<b>Specific Gravity</b>	1.530 @ 15.6°C
<b>Solubility</b>	Soluble in water
<b>log Pow</b>	No data available

## 10. STABILITY AND REACTIVITY

<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Incompatible products. Excess heat.
<b>Incompatible Materials</b>	Acids, Metals
<b>Hazardous Decomposition Products</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Sodium oxides
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur
<b>Hazardous Reactions .</b>	None under normal processing.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	90 mL/kg ( Rat )	Not listed	Not listed
Sodium hydroxide	Not listed	1350 mg/kg ( Rabbit )	Not listed

<b>Irritation</b>	Causes severe burns by all exposure routes
<b>Toxicologically Synergistic Products</b>	No information available.
<b>Chronic Toxicity</b>	
<b>Carcinogenicity</b>	There are no known carcinogenic chemicals in this product
<b>Sensitization</b>	No information available.
<b>Mutagenic Effects</b>	Mutagenic effects have occurred in experimental animals.
<b>Reproductive Effects</b>	No information available.

---

<b>Developmental Effects</b>	No information available.
<b>Teratogenicity</b>	No information available.
<b>Other Adverse Effects</b>	See actual entry in RTECS for complete information.
<b>Endocrine Disruptor Information</b>	No information available

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Do not empty into drains.

<b>Persistence and Degradability</b>	No information available
<b>Bioaccumulation/ Accumulation</b>	No information available
<b>Mobility</b>	No information available

## 13. DISPOSAL CONSIDERATIONS

<b>Waste Disposal Methods</b>	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
-------------------------------	--

## 14. TRANSPORT INFORMATION

### DOT

<b>UN-No</b>	UN1824
<b>Proper Shipping Name</b>	SODIUM HYDROXIDE SOLUTION
<b>Hazard Class</b>	8
<b>Packing Group</b>	II

### TDG

<b>UN-No</b>	UN1824
<b>Proper Shipping Name</b>	SODIUM HYDROXIDE SOLUTION
<b>Hazard Class</b>	8
<b>Packing Group</b>	II

### IATA

<b>UN-No</b>	UN1824
<b>Proper Shipping Name</b>	SODIUM HYDROXIDE SOLUTION
<b>Hazard Class</b>	8
<b>Packing Group</b>	II

14. TRANSPORT INFORMATION

IMDG/IMO

UN-No UN1824  
 Proper Shipping Name SODIUM HYDROXIDE SOLUTION  
 Hazard Class 8  
 Packing Group II

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Water	X	X	-	231-791-2	-		X	-	X	X	KE-35400 X
Sodium hydroxide	X	X	-	215-185-5	-		X	X	X	X	KE-31487 X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard No  
 Chronic Health Hazard No  
 Fire Hazard No  
 Sudden Release of Pressure Hazard No  
 Reactive Hazard No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Sodium hydroxide	X	1000 lb	-	-

**Clean Air Act**  
Not applicable

**OSHA**  
Not applicable

**CERCLA**  
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Sodium hydroxide	1000 lb	-

**California Proposition 65**  
This product does not contain any Proposition 65 chemicals.

**State Right-to-Know**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Sodium hydroxide	X	X	X	-	X

**U.S. Department of Transportation**  
Reportable Quantity (RQ): Y  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**  
This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**WHMIS Hazard Class**  
E Corrosive material



---

## 16. OTHER INFORMATION

**Prepared By** Regulatory Affairs  
Thermo Fisher Scientific  
Tel: (412) 490-8929

**Creation Date** 11-Feb-2010

**Print Date** 11-Feb-2010

**Revision Summary** "\*\*\*\*", and red text indicates revision

**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.

**End of MSDS**