Fisher Scientific

Part of Thermo Fisher Scientific

# 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**

**Cat No.** **BP359-212; BP359-500; S318-1; S318-3; S318-3LC; S318-5; S318-10; S318-10LC; S318-50; S318-50LC; S318-100; S318-500; S320-1; S320-3; S320-10; S320-50; S320-500; S392-12; S392-50; S392-212; S392SAM-1; S392SAM-2; S392SAM-3; S399-1; S399-1LC; S399-50; S399-212; S399-500; S612-3; S612-50; S612-500LB; S612-3500LB; S613-3; S613-10; S613-50; S613-500LB**

**Synonyms** Caustic soda; Lye (Pellets/Granular/Beads/NF/FCC/EP/BP/JP/Certified ACS)

**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. Water reactive. Hygroscopic.

**Appearance** White **Physical State** Solid **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 % |
|---|---|---|
| Sodium hydroxide | 1310-73-2 | > 95 |
| Sodium carbonate | 497-19-8 | < 3 |

## 4. FIRST AID MEASURES

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**Inhalation** 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.

**Ingestion** Do not induce vomiting. Call a physician or Poison Control Center immediately.

**Notes to Physician** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Flash Point** Not applicable
**Method** No information available.

**Autoignition Temperature** No information available.

**Explosion Limits**
**Upper** No data available
**Lower** No data available

**Suitable Extinguishing Media** Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..

**Unsuitable Extinguishing Media** Carbon dioxide (CO2).

**Hazardous Combustion Products** No information available.

**Sensitivity to mechanical impact** No information available.
**Sensitivity to static discharge** No information available.

**Specific Hazards Arising from the Chemical**
Thermal decomposition can lead to release of irritating gases and vapors. Water reactive. 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. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid dust formation. 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** Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal.

## 7. HANDLING AND STORAGE

**Handling** Use only under a chemical fume hood. Wear personal protective equipment. Avoid dust formation. Do not breathe dust. 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 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$^3$ | (Vacated) Ceiling: 2 mg/m$^3$<br>TWA: 2 mg/m$^3$ | IDLH: 10 mg/m$^3$<br>Ceiling: 2 mg/m$^3$ |

| Component | Quebec | Mexico OEL (TWA) | Ontario TWAEV |
|---|---|---|---|
| Sodium hydroxide | Ceiling: 2 mg/m$^3$ | Peak: 2 mg/m$^3$ | CEV: 2 mg/m$^3$ |

***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

**Physical State** Solid
**Appearance** White

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **odor** | odorless |
| **Odor Threshold** | No information available. |
| **pH** | 14 (5 % Solution) |
| **Vapor Pressure** | 1 mmHg @ 739 °C |
| **Vapor Density** | No information available. |
| **Viscosity** | No information available. |
| **Boiling Point/Range** | 1390°C / 2534°F@ 760 mmHg |
| **Melting Point/Range** | 318°C / 604.4°F |
| **Decomposition temperature** | No information available. |
| **Flash Point** | Not applicable |
| **Evaporation Rate** | No information available. |
| **Specific Gravity** | 2.13 |
| **Solubility** | Soluble in water |
| **log Pow** | No data available |
| **Molecular Weight** | 40 |
| **Molecular Formula** | NaOH |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability** | Hygroscopic. Water reactive. |
| **Conditions to Avoid** | Avoid dust formation. Incompatible products. Excess heat. Exposure to air or moisture over prolonged periods. |
| **Incompatible Materials** | Water, Metals, Acids |
| **Hazardous Decomposition Products** | Carbon monoxide (CO), Carbon dioxide ($CO_2$), Sodium oxides |
| **Hazardous Polymerization** | Hazardous polymerization does not occur |
| **Hazardous Reactions .** | None under normal processing. |

## 11. TOXICOLOGICAL INFORMATION

**Acute Toxicity**

**Component Information**

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium hydroxide | Not listed | 1350 mg/kg ( Rabbit ) | Not listed |
| Sodium carbonate | 4090 mg/kg ( Rat ) | Not listed | Not listed |

| | |
|---|---|
| **Irritation** | Causes severe burns by all exposure routes |
| **Toxicologically Synergistic Products** | No information available. |

**Chronic Toxicity**

| | |
|---|---|
| **Carcinogenicity** | There are no known carcinogenic chemicals in this product |

**Sensitization** No information available.

**Mutagenic Effects** Mutagenic effects have occurred in experimental animals.

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**Other Adverse Effects** See actual entry in RTECS for complete information.

**Endocrine Disruptor Information** No information available

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Do not empty into drains.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|---|---|---|---|---|
| Sodium carbonate | EC50 120 h 242 mg/L | Lepomis macrochirus: LC50: 300 mg/L/96h<br>Gambusia affinis: LC50: 740 mg/L/96h | Not listed | EC50 48 h 265 mg/L |

**Persistence and Degradability** No information available

**Bioaccumulation/ Accumulation** No information available

**Mobility** No information available

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Methods** 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**

**UN-No** UN1823
**Proper Shipping Name** Sodium hydroxide, solid
**Hazard Class** 8
**Packing Group** II

**TDG**

## 14. TRANSPORT INFORMATION

**UN-No** UN1823
**Proper Shipping Name** SODIUM HYDROXIDE, SOLID
**Hazard Class** 8
**Packing Group** II

**IATA**

**UN-No** UN1823
**Proper Shipping Name** SODIUM HYDROXIDE, SOLID
**Hazard Class** 8
**Packing Group** II

**IMDG/IMO**

**UN-No** UN1823
**Proper Shipping Name** SODIUM HYDROXIDE, SOLID
**Hazard Class** 8
**Packing Group** II

## 15. REGULATORY INFORMATION

**International Inventories**

| Component | TSCA | DSL | NDSL | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | CHINA | KECL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sodium hydroxide | X | X | - | 215-185-5 | - | | X | X | X | X | KE-31487 X |
| Sodium carbonate | X | X | - | 207-838-8 | - | | X | X | X | X | KE-31380 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<br>Thermo Fisher Scientific<br>Tel: (412) 490-8929 |
| **Creation Date** | 11-Feb-2010 |
| **Print Date** | 11-Feb-2010 |
| **Revision Summary** | "***", and red text indicates revision |

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**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**