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\*\*\*\* MATERIAL SAFETY DATA SHEET \*\*\*\*

Sodium hydroxide, solid  
21300

\*\*\*\* SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION \*\*\*\*

MSDS Name: Sodium hydroxide, solid  
Catalog Numbers:

871990, 871990-1, 871991, 871992, 871993, 871993-1, 871993-2, 871993-3,  
871993-4, 878605, BP359-212, BP359-500, NC9532183, NC9994088, NC9995368,  
8318-1, 8318-10, 8318-100, 8318-3, 8318-3LC, 8318-5, 8318-50, 8318-500,  
8318-50LC, 8320-1, 8320-3, 8320-50, 8320-500, 8392-12, 8392-212,  
8392-50, 8392SAM1, 8392SAM2, 8392SAM3, 8399-1, 8399212, 839950, 8399500,  
8612-3, 8612-50, 8612-500LB, 86123500LB, 8613-10, 8613-3, 8613-50,  
8613-500LB, XX8320FHK50KG

Synonyms:

Caustic soda; Soda lye; Sodium hydrate; Lye.

Company Identification: Fisher Scientific  
1 Reagent Lane  
Fairlawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For international CHEMTREC assistance, call: 703-527-3887

\*\*\*\* SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS \*\*\*\*

CAS#	Chemical Name	%	EINECS#
497-19-8	Sodium carbonate anhydrous	<3	207-838-8
1310-73-2	Sodium hydroxide	95-100	215-185-5

Hazard Symbols: C

Risk Phrases: 35

\*\*\*\* SECTION 3 - HAZARDS IDENTIFICATION \*\*\*\*

EMERGENCY OVERVIEW

Appearance: white solid.

Danger! Hygroscopic (absorbs moisture from the air). Causes eye and

skin burns. Causes digestive and respiratory tract burns.

Target Organs: Eyes, skin, mucous membranes.

Potential Health Effects

Eye:

Causes eye burns. May cause chemical conjunctivitis and corneal damage.

Skin:

Causes skin burns. May cause deep, penetrating ulcers of the skin. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.

Ingestion:

May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. May cause perforation of the digestive tract. Causes severe pain, nausea, vomiting, diarrhea, and shock. May cause corrosion and permanent tissue destruction of the esophagus and digestive tract. May cause systemic effects.

Inhalation:

Irritation may lead to chemical pneumonitis and pulmonary edema. Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. Causes chemical burns to the respiratory tract.

Chronic:

Prolonged or repeated skin contact may cause dermatitis. Effects may be delayed.

\*\*\*\* SECTION 4 - FIRST AID MEASURES \*\*\*\*

Eyes:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

Skin:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

Ingestion:

If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Treat symptomatically and supportively.

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\*\*\*\* SECTION 5 - FIRE FIGHTING MEASURES \*\*\*\*

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Use water spray to keep fire-exposed containers cool. Use water with caution and in flooding amounts. Contact with moisture or water may generate sufficient heat to ignite nearby combustible materials. Contact with metals may evolve flammable hydrogen gas.

Extinguishing Media:

Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. Do NOT get water inside containers.

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 1

\*\*\*\* SECTION 6 - ACCIDENTAL RELEASE MEASURES \*\*\*\*

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Vacuum or sweep up material and place into a suitable disposal container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Do not get water on spilled substances or inside containers.

\*\*\*\* SECTION 7 - HANDLING AND STORAGE \*\*\*\*

Handling:

Wash thoroughly after handling. Do not allow water to get into the container because of violent reaction. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Avoid ingestion and inhalation. Discard contaminated shoes. Use only with adequate ventilation.

Storage:

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from metals. Corrosives area. Keep away from acids. Store protected from moisture. Containers must be tightly closed to prevent the conversion of NaOH to sodium carbonate by the CO<sub>2</sub> in air.

\*\*\*\* SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION \*\*\*\*

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Sodium carbonate anhydrous	none listed	none listed	none listed
Sodium hydroxide	2 mg/m3 Ceiling	10 mg/m3 IDLH	2 mg/m3 TWA

OSHA Vacated PELs:

Sodium carbonate anhydrous:

No OSHA Vacated PELs are listed for this chemical.

Sodium hydroxide:

No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes:

Wear chemical goggles and face shield.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

\*\*\*\* SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES \*\*\*\*

Physical State:

Solid

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Color: white  
 Odor: Odorless  
 pH: 14 (5% aq soln)  
 Vapor Pressure: 1 mm Hg @ 739 deg C  
 Vapor Density: Not available.  
 Evaporation Rate: Not available.  
 Viscosity: Not available.  
 Boiling Point: 1390 deg C @ 760 mm Hg  
 Freezing/Melting Point: 318 deg C  
 Decomposition Temperature:  
 Solubility in water: Soluble.  
 Specific Gravity/Density: 2.13 g/cm3  
 Molecular Formula: NaOH  
 Molecular Weight: 40.00

#### \*\*\*\* SECTION 10 - STABILITY AND REACTIVITY \*\*\*\*

Chemical Stability:  
 Stable at room temperature in closed containers under normal storage and handling conditions.  
 Conditions to Avoid:  
 Moisture, contact with water, exposure to moist air or water, prolonged exposure to air.  
 Incompatibilities with Other Materials:  
 Water, metals, acids, aluminum, zinc, tin, nitromethane, leather, flammable liquids, organic halogens, wool.  
 Hazardous Decomposition Products:  
 Toxic fumes of sodium oxide.  
 Hazardous Polymerization: Will not occur.

#### \*\*\*\* SECTION 11 - TOXICOLOGICAL INFORMATION \*\*\*\*

RTECS#:  
 CAS# 497-19-8: VZ4050000  
 CAS# 1310-73-2: WB4900000  
 LD50/LC50:  
 CAS# 497-19-8: Draize test, rabbit, eye: 100 mg/24H Moderate; Draize test, rabbit, eye: 50 mg Severe; Draize test, rabbit, skin: 500 mg/24H Mild; Inhalation, mouse: LC50 = 1200 mg/m3/2H; Inhalation, rat: LC50 = 2300 mg/m3/2H; Oral, mouse: LD50 = 6600 mg/kg; Oral, mouse: LD50 = 6600 mg/kg; Oral, rat: LD50 = 4090 mg/kg.  
 CAS# 1310-73-2: Draize test, rabbit, eye: 400 ug Mild; Draize test, rabbit, eye: 1% Severe; Draize test, rabbit, eye: 50 ug/24H Severe; Draize test, rabbit, eye: 1 mg/24H Severe; Draize test, rabbit, skin: 500 mg/24H Severe.  
 Carcinogenicity:  
 Sodium carbonate anhydrous -  
 Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
 Sodium hydroxide -  
 Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
 Epidemiology:  
 No information available.  
 Teratogenicity:  
 No information available.  
 Reproductive Effects:  
 No information available.  
 Neurotoxicity:  
 No information available.  
 Mutagenicity:  
 No information available.  
 Other Studies:  
 See actual entry in RTECS for complete information.

#### \*\*\*\* SECTION 12 - ECOLOGICAL INFORMATION \*\*\*\*

#### \*\*\*\* SECTION 13 - DISPOSAL CONSIDERATIONS \*\*\*\*

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.  
 US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.  
 RCRA P-Series: None listed.  
 RCRA U-Series: None listed.

#### \*\*\*\* SECTION 14 - TRANSPORT INFORMATION \*\*\*\*

US DOT  
 Shipping Name: SODIUM HYDROXIDE, SOLID  
 Hazard Class: 8  
 UN Number: UN1823  
 Packing Group: II  
 Canadian TDG  
 Shipping Name: SODIUM HYDROXIDE SOLID  
 Hazard Class: 8  
 UN Number: UN1823

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#### \*\*\*\* SECTION 15 - REGULATORY INFORMATION \*\*\*\*

##### US FEDERAL

TSCA  
 CAS# 497-19-8 is listed on the TSCA inventory.  
 CAS# 1310-73-2 is listed on the TSCA inventory.  
 Health & Safety Reporting List  
 None of the chemicals are on the Health & Safety Reporting List.  
 Chemical Test Rules  
 None of the chemicals in this product are under a Chemical Test Rule.  
 Section 12b  
 None of the chemicals are listed under TSCA Section 12b.  
 TSCA Significant New Use Rule  
 None of the chemicals in this material have a SNUR under TSCA.

##### SARA

CERCLA Hazardous Substances and corresponding RQs  
 CAS# 1310-73-2: 1000 lb final RQ; 454 kg final RQ  
 SARA Section 302 Extremely Hazardous Substances  
 None of the chemicals in this product have a TPO.

##### SARA Codes

CAS # 497-19-8: acute.  
 CAS # 1310-73-2: acute, reactive.

##### Section 313

No chemicals are reportable under Section 313.

##### Clean Air Act:

This material does not contain any hazardous air pollutants.  
 This material does not contain any Class 1 Ozone depleters.  
 This material does not contain any Class 2 Ozone depleters.

##### Clean Water Act:

CAS# 1310-73-2 is listed as a Hazardous Substance under the CWA.  
 None of the chemicals in this product are listed as Priority Pollutants under the CWA.  
 None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

##### OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

##### STATE

Sodium carbonate anhydrous is not present on state lists from CA, PA, MN, MA, FL, or NJ.  
 Sodium hydroxide can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

##### California No Significant Risk Level:

None of the chemicals in this product are listed.

##### European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: C

Risk Phrases:

R 35 Causes severe burns.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 S 37/39 Wear suitable gloves and eye/face protection.  
 S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

##### WGK (Water Danger/Protection)

CAS# 497-19-8: 1

CAS# 1310-73-2: 1

##### United Kingdom Occupational Exposure Limits

CAS# 1310-73-2: OES-United Kingdom, STEL 2 mg/m3 STEL

##### United Kingdom Maximum Exposure Limits

##### Canada

CAS# 497-19-8 is listed on Canada's DSL List.  
 CAS# 1310-73-2 is listed on Canada's DSL List.  
 This product has a WHMIS classification of E.  
 CAS# 497-19-8 is listed on Canada's Ingredient Disclosure List.  
 CAS# 1310-73-2 is listed on Canada's Ingredient Disclosure List.

##### Exposure Limits

CAS# 1310-73-2: OEL-AUSTRALIA:TWA 2 mg/m3  
 OEL-BELGIUM:STEL 2 mg/m3  
 OEL-DENMARK:TWA 2 mg/m3  
 OEL-FINLAND:TWA 2 mg/m3  
 OEL-FRANCE:TWA 2 mg/m3  
 OEL-GERMANY:TWA 2 mg/m3  
 OEL-JAPAN:STEL 2 mg/m3  
 OEL-THE NETHERLANDS:TWA 2 mg/m3  
 OEL-THE PHILIPPINES:TWA 2 mg/m3  
 OEL-SWEDEN:TWA 2 mg/m3  
 OEL-SWITZERLAND:TWA 2 mg/m3;STEL 4 mg/m3  
 OEL-THAILAND:TWA 2 mg/m3  
 OEL-TURKEY:TWA 2 mg/m3  
 OEL-UNITED KINGDOM:TWA 2 mg/m3;STEL 2 mg/m3  
 OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV  
 OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

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\*\*\*\* SECTION 16 - ADDITIONAL INFORMATION \*\*\*\*

MSDS Creation Date: 12/12/1997 Revision #6 Date: 7/14/2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

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