### Section 1. Chemical Product and Company Identification

**Common Name/Trade Name**  
Sodium hydroxide, Pellets, Reagent ACS  

**Manufacturer**  
SPECTRUM LABORATORY PRODUCTS INC.  
14422 S. SAN PEDRO STREET  
GARDENA, CA 90248  

**Commercial Name(s)**  
Not available.  

**Synonym**  
Caustic Soda  

**Chemical Name**  
Sodium Hydroxide  

**Chemical Family**  
Not available.  

**Chemical Formula**  
NaOH  

**Catalog Number(s).**  
S1295  

**CAS#**  
1310-73-2  

**RTECS**  
WB4900000  

**TSCA**  
TSCA 8(b) inventory: Sodium hydroxide  

**CI#**  
Not available.  

**IN CASE OF EMERGENCY**  
CHEMTREC (24hr) 800-424-9300  
CALL (310) 516-8000

### Section 2. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
<th>CEIL (mg/m³)</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Sodium hydroxide</td>
<td>1310-73-2</td>
<td></td>
<td>2</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

**Toxicological Data on Ingredients**  
Sodium hydroxide  
LD50: Not available.  
LC50: Not available.

### Section 3. Hazards Identification

**Potential Acute Health Effects**  
Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant, corrosive), of ingestion, of inhalation. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Continued on Next Page
Potential Chronic Health Effects
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.

The substance is toxic to lungs. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Section 4. First Aid Measures

Eye Contact
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Get medical attention immediately.

Serious Skin Contact
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

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

Serious Inhalation
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion
Not available.

Section 5. Fire and Explosion Data

Flammability of the Product
Non-flammable.

Auto-Ignition Temperature
Not applicable.

Flash Points
Not applicable.

Flammable Limits
Not applicable.

Products of Combustion
Not available.

Fire Hazards in Presence of Various Substances
of metals

Explosion Hazards in Presence of Various Substances
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.
Slightly explosive in presence of heat.

Fire Fighting Media and Instructions
Not applicable.

Special Remarks on Fire Hazards
sodium hydroxide + zinc metal dust causes ignition of the latter.
Under proper conditions of temperature, pressure and state of division, it can ignite or react violently with acetaldehyde, allyl alcohol, allyl chloride, benzene-1,4-diol, chlorine trifluoride, 1,2 dichlorethylene, nitroethane, nitromethane, nitroparaffins, nitropropane, cinnamaldehyde, 2,2-dichloro-3,3-dimethylbutane.
Sodium hydroxide in contact with water may generate enough heat to ignite adjacent combustible materials. Phosphorous boiled with NaOH yields mixed phosphines which may ignite spontaneously in air. sodium hydroxide and cinnamaldehyde + heat may cause ignition. Reaction with certain metals releases flammable and explosive hydrogen gas.

Continued on Next Page
Sodium hydroxide reacts to form explosive products with ammonia + silver nitrate. Benzene extract of allyl benzenesulfonate prepared from allyl alcohol, and benzene sulfonyl chloride in presence of aqueous sodium hydroxide, under vacuum distillation, residue darkened and exploded. Sodium hydroxide + impure tetrahydrofuran, which can contain peroxides, can cause serious explosions. Dry mixtures of sodium hydroxide and sodium tetrahydroborate liberate hydrogen explosively at 230-270 deg. C. Sodium Hydroxide reacts with sodium salt of trichlorophenol + methyl alcohol + trichlorobenzene + heat to cause an explosion.

**Section 6. Accidental Release Measures**

<table>
<thead>
<tr>
<th>Small Spill</th>
<th>Large Spill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: <strong>Neutralize the residue with a dilute solution of acetic acid.</strong></td>
<td>Corrosive solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. <strong>Neutralize the residue with a dilute solution of acetic acid.</strong> Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.</td>
</tr>
</tbody>
</table>

**Section 7. Handling and Storage**

<table>
<thead>
<tr>
<th>Precautions</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep container dry. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, metals, acids, alkalis, moisture.</td>
<td>Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 23°C (73.4°F).</td>
</tr>
</tbody>
</table>

**Section 8. Exposure Controls/Personal Protection**

<table>
<thead>
<tr>
<th>Engineering Controls</th>
<th>Personal Protection</th>
<th>Personal Protection in Case of a Large Spill</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.</td>
<td>Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.</td>
<td>Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.</td>
<td>CEIL: 2 from ACGIH (TLV) [United States] [1995]</td>
</tr>
</tbody>
</table>

**Section 9. Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Physical state and appearance</th>
<th>Odor</th>
<th>Odorless.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>40 g/mole</td>
<td>Taste</td>
</tr>
<tr>
<td>pH (1% soln/water)</td>
<td>13.5 [Basic.]</td>
<td>Color</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>1388°C (2530.4°F)</td>
<td></td>
</tr>
<tr>
<td>Melting Point</td>
<td>323°C (613.4°F)</td>
<td></td>
</tr>
<tr>
<td>Critical Temperature</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>2.13 (Water = 1)</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable.</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Volatility</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available.</td>
<td></td>
</tr>
</tbody>
</table>

*Continued on Next Page*
**Section 10. Stability and Reactivity Data**

**Stability**
The product is stable.

**Instability Temperature**
Not available.

**Conditions of Instability**
Not available.

**Incompatibility with various substances**
Highly reactive with metals. Reactive with oxidizing agents, reducing agents, acids, alkalis, moisture.

**Corrosivity**
Not available.

**Special Remarks on Reactivity**
Hygroscopic. Much heat is evolved when solid material is dissolved in water. Therefore cold water and caution must be used for this process. Sodium hydroxide solution and octanol + diborane during a work-up of a reaction mixture of oxime and diborane in tetrahydrofuran is very exothermic, a mild explosion being noted on one occasion. Reactive with water, acids, acid chlorides, strong bases, strong oxidizing agents, strong reducing agents, flammable liquids, organic halogens, metals (i.e. aluminum, tin, zinc), nitromethane, glacial acetic acid, acetic anhydride, acrolein, chlorohydrin, chlorosulfonic acid, ethylene cyanohydrin, glyoxal, hydrochloric acid, sulfuric acid, hydrosulfuric acid, nitric acid, oleum, propiolactone, acrylonitrile, phorosous pentoxide, chloroethanol, chloroform-methanol, tetrahydroborate, cyanogen azide, 1,2,4,5 tetrachlorobenzene, cinnamaldehyde. Reacts with formaldehyde hydroxide to yield formic acid, and hydrogen.

**Special Remarks on Corrosivity**
Very caustic to aluminum and other metals in presence of moisture.

**Polymerization**
Will not occur.

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**Section 11. Toxicological Information**

**Routes of Entry**
Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

**Toxicity to Animals**
LD50: Not available.
LC50: Not available.

**Chronic Effects on Humans**
Causes damage to the following organs: lungs.

**Other Toxic Effects on Humans**
Extremely hazardous in case of inhalation (lung corrosive). Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (corrosive), of ingestion, .

**Special Remarks on Toxicity to Animals**
Lowest Published Lethal Dose:
LDL [Rabbit] - Route: Oral; Dose: 500 mg/kg

**Special Remarks on Chronic Effects on Humans**
May affect genetic material (mutagenic). Investigation as a mutagen (cytogenetic analysis), but no data available.

**Special Remarks on other Toxic Effects on Humans**
Acute Potential Health Effects:
Skin: May be harmful if absorbed through skin. Causes severe skin irritation and burns. May cause deep penetrating ulcers of the skin.
Eyes: Causes severe eye irritation and burns. May cause chemical conjunctivitis and corneal damage.
Inhalation: Harmful if inhaled. Causes severe irritation of the respiratory tract and mucous membranes with coughing, burns, breathing difficulty, and possible coma. Irritation may lead the chemical pneumonitis and pulmonary edema. Causes chemical burns to the respiratory tract and mucous membranes.
Ingestion: May be fatal if swallowed. May cause severe and permanent damage to the digestive tract. Causes severe gastrointestinal tract irritation and burns. May cause perforation of the digestive tract. Causes severe pain, nausea, vomiting, diarrhea, and shock. May cause corrosion and permanent destruction of the esophagus and digestive tract.

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Continued on Next Page
Section 12. Ecological Information

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecotoxicity</td>
<td>Not available.</td>
</tr>
<tr>
<td>BOD5 and COD</td>
<td>Not available.</td>
</tr>
<tr>
<td>Products of Biodegradation</td>
<td>Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.</td>
</tr>
<tr>
<td>Toxicity of the Products of Biodegradation</td>
<td>The product itself and its products of degradation are not toxic.</td>
</tr>
<tr>
<td>Special Remarks on the Products of Biodegradation</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Section 13. Disposal Considerations

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Disposal</td>
<td>Waste must be disposed of in accordance with federal, state and local environmental control regulations.</td>
</tr>
</tbody>
</table>

Section 14. Transport Information

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>Class 8: Corrosive material</td>
</tr>
<tr>
<td>Identification</td>
<td>Sodium hydroxide, solid UNNA: 1823 PG: II</td>
</tr>
<tr>
<td>Special Provisions for Transport</td>
<td>Not available.</td>
</tr>
<tr>
<td>DOT (Pictograms)</td>
<td></td>
</tr>
</tbody>
</table>

Section 15. Other Regulatory Information and Pictograms

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| Federal and State Regulations | Illinois toxic substances disclosure to employee act: Sodium hydroxide  
 Illinois chemical safety act: Sodium hydroxide  
 New York release reporting list: Sodium hydroxide  
 Rhode Island RTK hazardous substances: Sodium hydroxide  
 Pennsylvania RTK: Sodium hydroxide  
 Minnesota: Sodium hydroxide  
 Massachusetts RTK: Sodium hydroxide  
 New Jersey: Sodium hydroxide  
 Louisiana spill reporting: Sodium hydroxide  
 California Director's List of Hazardous Substances: Sodium hydroxide  
 TSCA 8(b) inventory: Sodium hydroxide  
 CERCLA: Hazardous substances.: Sodium hydroxide: 1000 lbs. (453.6 kg) |
| California Proposition 65 Warnings |                           |
 EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances. |
| Other Classifications  | WHMIS (Canada) CLASS E: Corrosive solid.  
 DSCL (EEC) |
### Sodium hydroxide, Pellets, Reagent ACS

<table>
<thead>
<tr>
<th>R35- Causes severe burns.</th>
<th>S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S28- After contact with skin, wash immediately with plenty of [***].</td>
</tr>
<tr>
<td></td>
<td>S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.</td>
</tr>
<tr>
<td></td>
<td>S38- In case of insufficient ventilation, wear suitable respiratory equipment.</td>
</tr>
<tr>
<td></td>
<td>S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).</td>
</tr>
</tbody>
</table>

### HMIS (U.S.A.)

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Hazard</td>
<td>0</td>
</tr>
<tr>
<td>Reactivity</td>
<td>2</td>
</tr>
<tr>
<td>Personal Protection</td>
<td>j</td>
</tr>
</tbody>
</table>

### National Fire Protection Association (U.S.A.)

<table>
<thead>
<tr>
<th>Flammability</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>1</td>
</tr>
</tbody>
</table>

### WHMIS (Canada) (Pictograms)

![Pictogram]

### DSCL (Europe) (Pictograms)

![Pictogram]

### TDG (Canada) (Pictograms)

![Pictogram]

### ADR (Europe) (Pictograms)

![Pictogram]

### Protective Equipment

- Gloves.
- Synthetic apron.
- Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
- Splash goggles.

**Continued on Next Page**
### Section 16. Other Information

<table>
<thead>
<tr>
<th>MSDS Code</th>
<th>S4101</th>
</tr>
</thead>
<tbody>
<tr>
<td>References</td>
<td>Not available.</td>
</tr>
<tr>
<td>Other Special Considerations</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**Validated by Sonia Owen on 11/4/2003.**

**Verified by Sonia Owen.**

**Printed 8/26/2004.**

**CALL (310) 516-8000**

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**Notice to Reader**

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.