SCIENCE Company

SDS

Safety Data Sheet

1. IDENTIFICATION

Product Identifier: **Sodium Hydroxide**

Product Code(s): NC-0874, NC-2091, S1013, S1101, CF1131

Synonyms: Caustic Soda; Soda Lye; White Caustic.

Recommended Use: For manufacturing, industrial, and laboratory use only.

Uses Advised Against: Not for household use.

Supplier:
The Science Company
7625 W Hampden Ave #14, Lakewood CO 80227
Phone: (303) 777-3777 Fax: (303) 777-3331

Emergency Phone Number: (800) 255-3924 (CHEM-TEL)

2. HAZARDS IDENTIFICATION

Hazard Classifications:

Acute Toxicity – Dermal:	Category 4
Skin Corrosion/Irritation:	Category 1A
Eye Damage/Irritation:	Category 1
Corrosive to Metals:	Category 1

Signal Word: DANGER

Hazard Statements:
Harmful in contact with skin.
Causes severe skin burns and serious eye damage.
May be corrosive to metals.

Pictograms:

Precautionary Statements:

Prevention:
Wear protective gloves, protective clothing, eye protection, and face protection.
Do not breathe dusts.
Wash thoroughly after handling.
Keep only in original container.

Response: Immediately call a poison center or doctor.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Absorb spillage to prevent material damage.

Storage: Store locked up.
Store in a corrosive resistant container with a resistant inner liner.

Disposal: Dispose of contents and container in accordance with local, regional, national, and international regulations.

Hazards Not Otherwise Classified: This product is harmful to aquatic life. Avoid release to the environment.

Toxicity Statement: Not applicable.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Component	Common Name / Synonyms	CAS#	Chemical Formula	% by Weight
Sodium Hydroxide	Caustic Soda; Soda Lye	1310-73-2	NaOH	≥ 96.0

Trade Secret Statement: Not applicable.

4. FIRST AID MEASURES

First Aid Procedures:

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediately call a poison center or doctor.

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Rinse mouth with water. If vomiting occurs, keep head low so that vomit does not enter lungs. Never give anything by mouth to an unconscious person. Immediately call a poison center or doctor.

Skin Contact: Remove contaminated clothing and shoes immediately. Wash skin with plenty of water for at least 15 minutes. Wash clothing before reuse. Immediately call a poison center or doctor.

Eye Contact: Check for and remove contact lenses, if present and easy to do. Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Immediately call a poison center or doctor.

General Advice: Poison information centers in each state can provide additional assistance for scheduled poisons. Ensure that those providing first aid and medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Symptoms and Effects: Irritation, burning, coughing, sneezing, choking sensation, hoarseness, difficulty breathing, shock, nausea, vomiting, diarrhea. Causes burns to the eyes, skin, respiratory tract, and gastrointestinal tract. May cause tissue damage. Prolonged or repeated exposure may cause tissue destruction and mutagenic effects.

Immediate Medical Care/ Special Treatment: Immediate medical attention is required. Call a poison center or physician immediately. Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media: Water spray, dry powder, alcohol resistant foam, carbon dioxide.

Unsuitable Extinguishing Media: Do not use a solid (straight) water stream, as it may scatter and spread fire.

Hazardous Combustion Products: Sodium oxides, hydrogen.

Specific Hazards: Highly caustic. Excessive thermal conditions may cause decomposition and yield sodium oxides. Contact with metals may yield hazardous hydrogen gas. Contact with water may cause violent exothermic reaction.

Special Protective Equipment/ Precautions for Firefighters: As in any fire, wear MSHA/NIOSH-approved (or equivalent) self-contained, positive-pressure or pressure-demand breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment: Isolate hazard area and keep unnecessary and unprotected personnel away from the area of the leak or spill. Keep upwind. Wear appropriate personal protective equipment (see Section 8). Avoid contact with eyes, skin, and clothing.

Emergency Procedures: In case of chemical emergency, or if unsure how to address an accidental release, consult a professional (see Section 1).

Methods for Containment: Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements, or confined areas. Dike the spilled material, where this is possible. Product should not be released to the environment. Contain and recover solid when possible.

Methods for Cleanup: Absorb spill with an inert material (e.g. vermiculite, dry sand, earth, cloth, or fleece) and place in a non-combustible container for reclamation or disposal. Do not flush to sewer. Clean contaminated surface thoroughly. Residues from spills can be diluted with water and neutralized with a dilute acidic material. Never return spills in original containers for reuse. Clean up in accordance with all applicable regulations.

7. HANDLING AND STORAGE

Handling: Wear personal protective equipment (see Section 8). Provide sufficient air exchange and/or exhaust in work rooms. Avoid contact with skin, eyes, and clothing. Limit exposure to air and moisture. Avoid generation of product dust. Do not ingest. When using, do not eat, drink, or smoke. Keep away from incompatible materials (see Section 10). Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Containers of this material may be hazardous when empty, as they retain product residues. Observe all warnings and precautions listed for this product. As with all bases, never add water directly to this product. Instead, add bases to water to prevent violent eruption of the solution.

Storage: Store in a cool, dry, ventilated area. Store in a segregated and approved area away from heat and incompatible materials (see section 10). Store in original container. Do not store in metallic containers. Keep containers tightly closed and upright. Keep away from food, drink, and animal foodstuffs. Keep out of the reach of children. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of this product.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: OSHA (PEL): 2 mg/m^3
ACGIH (TLV): 2 mg/m^3

Engineering Controls: Ensure adequate ventilation. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Measures:

Eye/Face Protection: Wear safety glasses with side shields or goggles and a face shield. Maintain approved eye wash station and accessible rinse facilities in work area.

Skin Protection: Wear appropriate chemical resistant clothing (with long sleeves) and appropriate chemical resistant gloves.

Respiratory Protection: An air-purifying, NIOSH-approved respirator with appropriate cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a positive-pressure, air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are unknown, or if any other circumstances exist where air-purifying respirators may not provide adequate protection.

Specific Requirements for Personal Protective Equipment: Ensure that glove material is compatible with this product. This information is available from glove manufacturers. If respiratory protection is required, use full face protection as well.

9. PHYSICAL AND CHEMICAL PROPERTIES

Unless otherwise indicated, all properties are given at 25 °C and standard pressure.

Appearance: Colorless to white, translucent solid.

Odor: Odorless.

Odor Threshold: No information found.

Formula Weight: 40.00

pH: 13 (0.5% w/v aqueous)

Melting/Freezing Point: 323 °C

Boiling Point/Range: 1388 °C

Decomposition Temperature: No information found.

Flash Point: Not applicable.

Auto-ignition Temperature: Not applicable.

Flammability: Not flammable.

Flammability/Explosive Limits: Not applicable.

Solubility: 1110 g/L aqueous; soluble in alcohol.

Vapor Pressure: 3 mmHg at 37 °C

Vapor Density: 1.38 (Air = 1)

Specific Gravity: 2.13 (Water = 1)

Evaporation Rate: No information found.

Viscosity:	No information found.
Partition Coefficient (n-octanol/water):	No information found.

10. STABILITY AND REACTIVITY

Reactivity Data:	Corrosive. See Section 11.
Chemical Stability:	Stable under normal conditions. Sensitive to air. Hygroscopic.
Conditions to Avoid:	Heat, excessive ambient moisture, exposure to air, incompatible materials.
Incompatible Materials:	Acids, oxidizers, metals.
Hazardous Decomposition Products:	Sodium oxides, hydrogen.
Possibility of Hazardous Reactions:	May react vigorously or violently with the incompatible materials listed above. Excessive thermal conditions may cause decomposition and yield sodium oxides. Contact with metals may yield hazardous hydrogen gas. Contact with moisture may cause violent exothermic reaction.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure:	Inhalation, ingestion, skin contact, eye contact.
Acute Effects:	Causes burns to the eyes, skin, respiratory tract, and gastrointestinal tract. May cause tissue damage.
Chronic Effects:	Prolonged or repeated exposure may cause tissue destruction and mutagenic effects.
Toxicological Data:	LD_{50} Dermal, Rabbit: 1350 mg/kg Corrosive. Causes severe burns to eyes and skin based on animal data.
Symptoms of Exposure:	Irritation, burning, coughing, sneezing, choking sensation, hoarseness, difficulty breathing, shock, nausea, vomiting, diarrhea.
Carcinogenic Effects:	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicological Data:	LC_{50}, Western Mosquitofish (Gambusia affinis): 125 mg/L 96 h EC_{50}, Water Flea (Ceriodaphnia dubia): 34.59 - 47.13 mg/L 48 h
Persistence and Degradability:	Expected to be readily biodegradable.
Environmental Effects:	Harmful to aquatic organisms. May adversely affect pH of aquatic ecosystems. Avoid exposure to the environment.

13. DISPOSAL INFORMATION

Disposal Instructions: All wastes must be handled in accordance with local, state, and federal regulations. Minimize exposure to product waste (see Section 8). Do not dispose unused waste down drains or into sewers.

Contaminated Packaging: Because emptied containers may retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

Waste Codes: D002: Waste Corrosive Material (pH ≤ 2 or pH ≥12.5 or corrosive to steel)

14. TRANSPORT INFORMATION

DOT:

UN Number: UN1823

Proper Shipping Name: Sodium hydroxide, solid

Hazard Class: 8

Packing Group: II

ERG Number: 154

Environmental Hazard Regulations: No information found.

Other Transport Precautions: DOT Reportable Quantity: 1000 lb

15. REGULATORY INFORMATION

U.S. Federal Regulations:

OSHA: This product is considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Inventory: All components of this product are on the U.S. TSCA Inventory.

U.S. EPCRA (SARA Title III):

Section 302: No information found.

Sections 311/312:

Hazard Category	List (Yes/No)
Section 311 – Hazardous Chemical	Yes
Immediate Hazard	Yes
Delayed Hazard	No
Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No

Section 313: No information found.

CERCLA Reportable Quantities: Sodium Hydroxide: 1000 lb

International Inventories:

Country or Region	Inventory Name	On Inventory (Yes/No)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*A "Yes" indicates that the listed component(s) of this product comply with the inventory requirements administered by the governing country(s).

16. OTHER INFORMATION

Disclaimer: The Science Company provides the information in this Safety Data Sheet in the belief that it is reliable but assumes no responsibility for its completeness or accuracy. The physical properties reported in this SDS are obtained from literature and do not constitute product specifications. The Science Company makes and gives no representations or warranties with respect to the information contained herein or the product to which it refers, whether express, implied, or statutory, including without limitation, warranties of accuracy, completeness, merchantability, non-infringement, performance, safety, suitability, stability, and fitness for a particular purpose. No warranty against infringement of any patent, copyright or trademark is made or implied. This SDS is intended only as a guide to the appropriate handling of the material by a properly trained person. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. Accordingly, The Science Company assumes no liability whatsoever for the use of or reliance upon this information including results obtained, incidental or consequential damages, or lost profits.

Issue Date: May 19, 2016

Reason for Revision: Update of Section 9 over 05/28/2015 version.