

Section 1: Identification

1.1 Identification

Product Name: Sodium Hydroxide

Product Form: Solid

Chemical Name/Synonyms: Sodium Hydroxide, Lye, Caustic Soda

Chemical Formula: NaOH

Chemical Family: Inorganic

1.2 Recommended use and restrictions on use

Use of the Substance: Industrial

Recommended Use: Laboratory chemicals

Restrictions on use: Not for food, drug, or household use

1.3 Supplier

Company: Farayand Sood Engineering and Chemical Co.

Address: 7th floor, Khorshid Complex, Valiasr Street, Vanak SQ, Tehran, Iran.

Telephone: +98 21 8865 4236

Fax: +98 21 8865 4286

Email: info@farayandsood.com

Website: farayandsood.com

In case of emergency call Poison Control Center/doctor.

Section 2: Hazard(s) Identification

Hazard Classification in accordance with GHS:

Hazard Statement	Hazard Category	Hazard Class
H290	1	Substance or mixture corrosive with metals
H314	1A	Causes skin corrosion/irritation
H318	1	Causes serious eye damage/eye irritation
H402	3	Harmful to aquatic life

Signal Words: Danger

Hazard Pictograms:



Hazard Statements:

H290 May be corrosive to metals

H314 Causes severe skin burns and eye damage

Precautionary Statements:

P260 Do not breathe dust, vapors.

P264 Wash exposed skin thoroughly after handling.

P273 Avoid release to the environment.

P280 Wear eye protection, face protection, protective clothing, protective gloves.

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P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor

Description of other hazards: None/no additional information

Section 3: Composition/ Information on Ingredients

Substance Name	CAS#	EC#	Index#	Conc.	Molar Mass
Sodium Hydroxide	1310-73-2	215-185-5	011-002-00-6	≥98 %	40 g/mol

Section 4: First-Aid Measures

4.1 Description of first aid measures

General first aid measures: Check vital signs. Remove and discard all contaminated clothing. Caustic soda must be removed as quickly as possible by washing with water only. Do not attempt to neutralize the caustic soda with chemicals. For severe cases, call emergency services immediately.

After skin contact: Wipe product off skin and wash immediately with plenty of water. Do not treat with chemical neutralizing agents. Remove contaminated clothing immediately (exception: if clothing sticks to skin, avoid removing). Cover affected area with sterile bandage. Seek immediate medical treatment for corrosive injuries.

After eye contact: Immediately remove contact lenses (if present). Flush eyes with plenty of water for at least 15 minutes, while keeping eyelids open. Protect unaffected eye. Consult ophthalmologist.

After inhalation: Transfer victim to fresh air. If respiratory symptoms worsen, contact emergency services immediately.

After swallowing: Rinse mouth repeatedly with water. Drink plenty of water. Do not administer chemical antidote. Contact poison control center or emergency services immediately. If large amounts are ingested: abdominal and esophageal perforation may occur, take victim to hospital immediately.

4.2 Most important symptoms and effects (acute and delayed)

Irritation after inhalation: Breathing the dust can irritate the mouth, nose, and throat. Dry cough and sore throat may occur.

Contact with eyes and skin: Caustic burns/corrosion of skin. Risk of permanent eye damage.

Continuous contact: Breathing difficulties

Delayed Symptoms: Nausea, abdominal pain, slow-healing wound, blisters, bleeding of gastrointestinal tract, bloody vomit, swallowing difficulties, intestinal and abdominal burns and perforation.

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Section 5: Fire-Fighting Measures

Suitable extinguishing agents: For large fire use dry extinguishing powder, foam extinguishing agents, water spray, or carbon dioxide. Avoid dispersing water if possible. Note: Adding water to caustic soda generates large amounts of heat and steam.

Unsuitable extinguishing agents: Large quantities of water/water jets.

Exposure Hazards: Non-combustible. May cause reactions involving a fire hazard. For more information refer below: Reactivity Hazards.

Explosion Hazards: Heat generation from contact with moisture or water can cause reaction with explosion hazards. For more information refer below: Reactivity Hazards.

Reactivity Hazards: Can cause metal corrosion. Reacts violently with certain acids. Generates flammable hydrogen gas upon reaction with certain metals such as aluminum and zinc. Absorbs moisture and atmospheric carbon dioxide. Contact with water/moisture results in highly exothermic reaction and releases corrosive mist.

Precautionary measures for personnel: In case of exposure to fire and heat, stay upwind of the fumes. Evacuate non-necessary personnel. Notify employees and neighbors. Close doors and windows of unaffected neighboring areas.

Special protective equipment for firefighters: Firefighters must wear appropriate protective gear and self-contained breathing apparatus (SCBA). Clothing must protect against chemicals.

Firefighting instructions: Transfer unaffected tanks to safe area. Do not extinguish affected areas with water jets. Cooling must be done with moderate amounts of water, or preferably using other alternatives. Factors influencing rapid spread of fire must be considered.

Section 6: Accidental Release Measures

General precautions: Avoid inhaling dust, and contact with eyes, skin, and clothes. Wear personal protective equipment. Ventilate affected spill/leak area. Remove nearby sources of ignition. Use appropriate spill dikes to absorb spillage.

For non-emergency personnel: Wear personal protective equipment in conjunction with breathing apparatus. Use compressed air/oxygen apparatus and corrosion-proof clothing when dealing with caustic dust. Breathing apparatus and gas-tight suit must be worn prior to water/moisture exposure. See Section 2: Precautionary statements for more information.

Emergency procedures: Flag danger zones. Notify employees immediately. Decontaminate affected personnel. Prevent dust formation and corrosion with other substances. Keep chemical lids tightly closed and block entrance of moisture/water. Depending on severity of the emergency, consider evacuation.

Measures for environmental protection: Prevent spillage from contaminating drains, surface, and ground water.

Measures for cleaning/collecting: Cover drains in spillage areas. Control dust and clean mechanically. Mix spill residues with water and neutralize with diluted acid in clay, sand, vermiculite or other absorbent material. Discard chemical waste in appropriate containers.

Section 7: Handling and Storage

Handling: Ensure personnel are trained in safe handling of chemicals and first aid measures. Pay special attention when handling and opening container. Avoid raising dust. Appropriate ventilation, protective clothing, and respiratory protection must be in place when carrying operations. Keep substance free from contamination and exposure to moisture and water. Avoid discharging waste into drain and sewers.

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Storage: Store at ambient temperature in a dry and well-ventilated area. Keep containers tightly closed. Keep only in the original container. Do not store near explosion hazards, oxidizing agents, (strong) acids, metals, organic compounds, water/moisture, or heat sources. Untrained staff must not access containers.

Section 8: Exposure Controls/Personal Protection

General protective and hygienic measures: After handling or leaving work, wash hands and other skin areas in contact with the substance prior to eating, drinking, or smoking. Ensure contaminated clothing have been properly washed before reuse (launder separately). Work clothes must be kept apart from clothes pre- and post-work. Safety showers and emergency eye wash fountains must be in vicinity of work areas. Workplace must be adequately ventilated.

Breathing equipment: Dust mask with filter type P3 must be used for when exposed to dust. High dust production: self-contained breathing apparatus.

Protection of hands: Use gloves.

Eye protection: Face shield. Wear safety goggles when working with dust.

Skin/body protection: Clothing must be corrosion-proof. Head and neck must be protected from dust exposure.



Section 9: Physical and Chemical Properties

Form: Solid

Appearance: Flakes, Prills, Crystalline solid, Crystalline powder, Lumps, Scales.

Odor: Odorless

Color: White

pH: 14 (alkaline)

Melting point/melting range: 319 – 323°C

Boiling point/boiling range: 1390 °C

Flash point: N/A

Evaporation rate: N/A

Flammability: No information available

Upper/lower flammability or explosive limits: No information available

Danger of explosion: Not classified as explosive

Oxidizing properties: None

Relative density: 213 g/cm³

Solubility in/Miscibility with water: >1.000 g/L at 20°C, highly exothermic

Solubility in other substances: Soluble in ethanol, methanol, and glycerol

Other properties: Translucent, hygroscopic. Strong base.

Section 10: Stability and Reactivity

Reactivity: Corrosive to metals: aluminum, tin, zinc, copper, brass, and bronze. Corrosive to steel at temperatures above 40°C. Not corrosive to nickel.

Violent reaction with: Acetone, Chloroform, Maleic anhydride, Acids, Phosphorus, Nitrile, Peroxides,

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Bromine, Nitro compound, Nitrate, Magnesium, Calcium, Metal powder.

Chemical stability: Stable under normal ambient and proper storage/handling conditions. Unstable when exposed to air and moisture.

Conditions to avoid: Humidity, incompatible agents.

Incompatible materials: Water, strong oxidizers, strong acids, metals, combustible materials.

Hazardous decomposition products: Sodium oxide

Section 11: Toxicological Information

Acute toxicity: Not classified as acutely toxic.

Animal toxicity data:

LD 50/oral-rabbit	500 mg/kg
LD 50//dermal-rabbit	1350 mg/kg
LD 50 / intraperitoneal -rat	40 mg /kg

Potential routes of exposure/potential health effects

Target organs: skin and eyes (most likely), respiratory tract, gastrointestinal tract

Skin: Severe burns

Eye: Irritation or permanent eye damage

Inhalation: Effects vary from mild irritation to serious damage of the upper respiratory tract, depending on severity of exposure. Symptoms may include sneezing, sore throat, or runny nose. Severe pneumonia may occur.

Sensitization: Not classified

Ingestion: Dry/sore throat. Nausea. Abdominal pain. Blood in vomit. Difficulty in swallowing. Possible esophageal perforation. Burns to the gastric/intestinal mucosa. Bleeding of the gastrointestinal tract. Shock.

Carcinogenic effects: In cases of ingestion, esophagus cancer may occur.

Mutagenic effects: No information available

Reproductive toxicity: No information available

Section 12: Ecological Information (non-mandatory)

Ecotoxicity - general: Not classified as environmentally dangerous.

Aquatic toxicity: Acute. Harmful to fishes, crustacea. Causes pH shift. Groundwater pollutant.

Mobility: Highly soluble in water. No information available on mobility in soil.

Biodegradation: N/A for inorganic chemicals

Bioaccumulation: No information available

Section 13: Disposal Considerations (non-mandatory)

Waste treatment: Do not dispose in drains, sewers, or groundwater. Remove waste in accordance with local and/or national regulations. Avoid mixing waste with other hazards. All responsible waste management facilities must take appropriate measures to prevent environmental contamination and damage to people/animals. Must not be disposed in household waste landfills.

Additional information: Please seek local or national waste management guidelines.

Section 14: Transport Information (non-mandatory)

DOT regulations:

- **UN Number:** 1823
- **Transport document description:** UN 1823 Sodium hydroxide, solid, 8, II

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- **Proper Shipping Name:** Sodium hydroxide, solid
- **Hazard class:** 8 - Class 8 - Corrosive material 49 CFR 173.136
- **Hazard Labels:**



- **Packing group:** II - Medium danger
- **Classification code:** C6
- **Max. Quantity Passenger:** 15 kg
- **Max. Quantity Cargo:** 60 kg
- **Vessel Stowage Location:** A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
- **Vessel Stowage Other:** 52 - Stow "separated from" acids

Section 15: Other Information

SDS date of preparation/update: 11/16/2021

Disclaimer: The provided SDS solely refers to the safety requirements of the purchased product and is based on available knowledge. The purpose of this SDS is to notify the customer about the safe handling, storage, transport, and disposal of the product. The information is only valid for the product and should not be used for new made-up material. Farayand Sood Engineering and Chemical Company disclaims responsibility and shall have no liability for any damage and injury sustained by inappropriate product mixing, handling, and misuse. The safety information on this SDS is provided as an information resource only and should not be exclusively used for diagnostic and treatment purposes.