



Common Name: **SODIUM HYDROXIDE**

Synonyms: Caustic Soda; Lye; Sodium Hydrate

CAS No: 1310-73-2

Molecular Formula: NaOH

RTK Substance No: 1706

Description: Odorless, white solid that absorbs moisture from the air

### HAZARD DATA

Hazard Rating	Firefighting	Reactivity
<b>3 - Health</b> <b>0 - Fire</b> <b>1 - Reactivity</b>  <b>DOT#:</b> UN 1823 (solid) UN 1824 (solution)  <b>ERG Guide #:</b> 154 <b>Hazard Class:</b> 8 (Corrosive)	Extinguish fire using an agent suitable for type of surrounding fire. <b>Sodium Hydroxide</b> itself does not burn.  POISONOUS GASES ARE PRODUCED IN FIRE. Use water spray to keep fire-exposed containers cool. DO NOT get water inside containers.  <b>Sodium Hydroxide</b> in contact with water or moisture may generate enough heat to ignite combustibles.	<b>Sodium Hydroxide</b> reacts with STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC); WATER; and MOISTURE to rapidly release heat.  <b>Sodium Hydroxide</b> reacts with METALS (such as ALUMINUM, LEAD, TIN and ZINC) to form flammable and explosive <i>Hydrogen gas</i> .  <b>Sodium Hydroxide</b> can form shock sensitive salts on contact with NITROGEN CONTAINING COMPOUNDS (such as NITROMETHANE).  <b>Sodium Hydroxide</b> is not compatible with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE); CHLORINATED SOLVENTS; AMMONIA; and ORGANIC MATERIALS.  <b>Sodium Hydroxide</b> can attack IRON, COPPER, PLASTICS, RUBBER and COATINGS.

### SPILL/LEAKS

**Isolation Distance:**

Spill (solid): 25 meters (75 feet) Spill (liquid): 50 meters (150 feet)  
 Fire: 800 meters (1/2 mile)

For **Sodium Hydroxide** in *solution* absorb liquids in dry sand, earth, or a similar material and place into sealed containers for disposal.

Collect *solid* material in the most convenient and safe manner and place into sealed containers for disposal.

DO NOT USE WATER OR WET METHOD.

DO NOT wash into sewer.

Neutralize water spills with a dilute acid.

**Sodium Hydroxide** is hazardous to the environment, especially water organisms.

### PHYSICAL PROPERTIES

- Odor Threshold:** Odorless
- Flash Point:** Noncombustible
- Vapor Density:** 2.1 (air = 1)
- Vapor Pressure:** 0 mm Hg at 68°F (20°C)
- Specific Gravity:** 2.1 (water = 1)
- Water Solubility:** Soluble
- Boiling Point:** 2,534°F (1,390°C)
- Melting Point:** 604°F (318°C)
- Molecular Weight:** 40

### EXPOSURE LIMITS

**OSHA:** 2 mg/m<sup>3</sup>, 8-hr TWA

**NIOSH:** 2 mg/m<sup>3</sup>, Ceiling

**ACGIH:** 2 mg/m<sup>3</sup>, Ceiling

**IDLH:** 10 mg/m<sup>3</sup>

The Protective Action Criteria values are:

PAC-1 = 0.5 mg/m<sup>3</sup> PAC-2 = 5 mg/m<sup>3</sup>

PAC-3 = 50 mg/m<sup>3</sup>

### PROTECTIVE EQUIPMENT

- Gloves:** Butyl, Nitrile, Neoprene, PVC, SilverShield®/4H®, Viton and Barrier® (>8-hr breakthrough for **Sodium Hydroxide** in *solution*)
- Coveralls:** Tychem® SL and Responder®, and Trelchem® HPS and VPS (>8-hr breakthrough for **Sodium Hydroxide** *solid* or *solution*)
- Respirator:** <10 mg/m<sup>3</sup> - Full facepiece APR with *High efficiency filters*  
>10 mg/m<sup>3</sup> - SCBA

### HEALTH EFFECTS

- Eyes:** Severe irritation, burns and possible eye damage
- Skin:** Irritation and severe burns
- Inhalation:** Nose, throat and lung irritation with coughing and severe shortness of breath (pulmonary edema)

### FIRST AID AND DECONTAMINATION

- Remove** the person from exposure.
- Quickly** brush off excess chemical from the face. Flush with large amounts of water for at least 30 minutes. Remove contact lenses, if worn. Seek medical attention immediately.
- Quickly** remove contaminated clothing. Immediately blot or brush off excess chemical and wash with large amounts of water for at least 30 minutes. Seek medical attention immediately.
- Begin** artificial respiration if breathing has stopped and CPR if necessary.
- Transfer** promptly to a medical facility.
- Medical** observation is recommended as symptoms may be delayed.