

# SAFETY DATA SHEET

Creation Date 11-Feb-2010

Revision Date 18-Dec-2025

Revision Number 7

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

## 1. Identification

|                             |                                                                                                      |
|-----------------------------|------------------------------------------------------------------------------------------------------|
| <b>Product Name</b>         | <b>Sodium hydroxide</b>                                                                              |
| <b>Cat No. :</b>            | <b>S318-1; S318-3; S318-3LC; S318-5; S318-10; S318-10LC; S318-50; S318-50LC; S318-100; S318-500;</b> |
| <b>CAS No</b>               | 1310-73-2                                                                                            |
| <b>Synonyms</b>             | Caustic soda; Lye                                                                                    |
| <b>Recommended Use</b>      | Laboratory chemicals.                                                                                |
| <b>Uses advised against</b> | Food, drug, pesticide or biocidal product use.                                                       |

### Details of the supplier of the safety data sheet

#### Company

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

#### **Emergency Telephone Number**

CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

## 2. Hazard(s) identification

### **Classification**

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

|                                                  |              |
|--------------------------------------------------|--------------|
| Skin Corrosion/Irritation                        | Category 1 A |
| Serious Eye Damage/Eye Irritation                | Category 1   |
| Specific target organ toxicity (single exposure) | Category 3   |
| Target Organs - Respiratory system.              |              |

### Label Elements

#### **Signal Word**

Danger

#### **Hazard Statements**

Causes severe skin burns and eye damage  
May cause respiratory irritation

**Precautionary Statements****Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray  
Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves/protective clothing/eye protection/face protection  
Use only outdoors or in a well-ventilated area

**Response**

Immediately call a POISON CENTER or doctor

**Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing

**Skin**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower  
Take off contaminated clothing and wash before reuse

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Ingestion**

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

**Storage**

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200**

No information available

### 3. Composition/information on Ingredients

| Component        | CAS No    | Weight % |
|------------------|-----------|----------|
| Sodium hydroxide | 1310-73-2 | > 97     |
| Sodium carbonate | 497-19-8  | < 3      |

### 4. First-aid measures

**General Advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Keep eye wide open while rinsing.

**Skin Contact**

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. Call a physician or poison

|                                            |                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            | control center immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.                                                   |
| <b>Ingestion</b>                           | Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.                                                                                                                                                  |
| <b>Most important symptoms and effects</b> | Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated |
| <b>Notes to Physician</b>                  | Treat symptomatically                                                                                                                                                                                                                                                                           |

## 5. Fire-fighting measures

|                                         |                                                                                                                                                         |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media</b>     | Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam. |
| <b>Unsuitable Extinguishing Media</b>   | Carbon dioxide (CO <sub>2</sub> )                                                                                                                       |
| <b>Flash Point</b>                      | Not applicable                                                                                                                                          |
| <b>Method -</b>                         | No information available                                                                                                                                |
| <b>Autoignition Temperature</b>         | No information available                                                                                                                                |
| <b>Explosion Limits</b>                 |                                                                                                                                                         |
| <b>Upper</b>                            | No data available                                                                                                                                       |
| <b>Lower</b>                            | No data available                                                                                                                                       |
| <b>Sensitivity to Mechanical Impact</b> | No information available                                                                                                                                |
| <b>Sensitivity to Static Discharge</b>  | No information available                                                                                                                                |

### Specific Hazards Arising from the Chemical

The product causes burns of eyes, skin and mucous membranes.

### Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Sodium oxides.

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

### NFPA

**Health**  
3

**Flammability**  
0

**Instability**  
1

**Physical hazards**  
N/A

## 6. Accidental release measures

|                                  |                                                                                                                                                                  |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal Precautions</b>      | Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.                                      |
| <b>Environmental Precautions</b> | Should not be released into the environment. Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system. |

**Methods for Containment and Clean Up** Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

## 7. Handling and Storage

|                 |                                                                                                                                                                                                                                |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Handling</b> | Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance. |
| <b>Storage.</b> | Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.                                                                                                                                      |

Store under an inert atmosphere. Air sensitive. Incompatible Materials. Water. Metals. Acids.

## 8. Exposure controls / personal protection

### Exposure Guidelines

| Component        | ACGIH TLV                    | OSHA PEL                                                           | NIOSH                                                      | Mexico OEL (TWA)             |
|------------------|------------------------------|--------------------------------------------------------------------|------------------------------------------------------------|------------------------------|
| Sodium hydroxide | Ceiling: 2 mg/m <sup>3</sup> | (Vacated) Ceiling: 2 mg/m <sup>3</sup><br>TWA: 2 mg/m <sup>3</sup> | IDLH: 10 mg/m <sup>3</sup><br>Ceiling: 2 mg/m <sup>3</sup> | Ceiling: 2 mg/m <sup>3</sup> |

### Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

### Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal Protective Equipment

#### Eyeface Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

#### Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

#### Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

#### Recommended Filter type:

Particulates filter conforming to EN 143.

#### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

### Appearance

#### Physical State

Solid

#### Color

White

#### Odor

Odorless

#### Odor Threshold

No information available

#### Property

##### Values

##### Remarks

##### • Method

#### Melting Point/Range

318 °C / 604.4 °F

#### Softening Point

No data available

#### Boiling Point/Range

1390 °C / 2534 °F

#### Flash Point

Not applicable

@ 760 mmHg

#### Flammability (liquid)

Not applicable

**Method -** No information available

#### Flammability (solid,gas)

No information available

Solid

#### Explosion Limits

No data available

#### Autoignition Temperature

No data available

#### Decomposition Temperature

No data available

#### pH

14

(5 %)

#### Viscosity

Not applicable

Solid

#### Water Solubility

Soluble

#### Solubility in other solvents

No information available

**Partition Coefficient (n-octanol/water)**

|                            |                   |       |
|----------------------------|-------------------|-------|
| Vapor Pressure             | 1 mmHg @ 739 °C   |       |
| Density / Specific Gravity | 2.13              |       |
| Bulk Density               | No data available |       |
| Vapor Density              | Not applicable    | Solid |
| Particle characteristics   | No data available |       |

**Other Information**

|                   |                        |
|-------------------|------------------------|
| Molecular Formula | Na O H                 |
| Molecular Weight  | 40                     |
| Evaporation Rate  | Not applicable - Solid |

**10. Stability and reactivity**

|                                  |                                                                                           |
|----------------------------------|-------------------------------------------------------------------------------------------|
| Reactive Hazard                  | None known, based on information available                                                |
| Stability                        | Water reactive. Hygroscopic.                                                              |
| Conditions to Avoid              | Avoid dust formation. Incompatible products. Excess heat. Exposure to moist air or water. |
| Incompatible Materials           | Water, Metals, Acids                                                                      |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Sodium oxides                    |
| Hazardous Polymerization         | Hazardous polymerization does not occur.                                                  |
| Hazardous Reactions              | None under normal processing.                                                             |

**11. Toxicological information****Information on expected route of exposure**

|            |                                                                                                 |
|------------|-------------------------------------------------------------------------------------------------|
| Inhalation | Not an expected route of exposure.                                                              |
| Ingestion  | May be harmful if swallowed.                                                                    |
| Eyes       | Avoid contact with eyes. Corrosive to the eyes and may cause severe damage including blindness. |
| Skin       | Avoid contact with skin. Causes burns. Skin Corrosion/Irritation. Harmful in contact with skin. |

**Toxicology data for the components**

| Component        | LD50 Oral                | LD50 Dermal                  | LC50 Inhalation   |
|------------------|--------------------------|------------------------------|-------------------|
| Sodium hydroxide | LD50 = 325 mg/kg ( Rat ) | LD50 = 1350 mg/kg ( Rabbit ) | -                 |
| Sodium carbonate | 2800 mg/kg ( Rat )       | > 2000 mg/kg (rabbit)        | 2.3 mg/l 2h (Rat) |

|                                        |                                                                               |
|----------------------------------------|-------------------------------------------------------------------------------|
| Toxicologically Synergistic Products   | No information available                                                      |
| (b) skin corrosion/irritation;         | Category 1 A Based on available data, the classification criteria are not met |
| (c) serious eye damage/irritation;     | Category 1 Based on available data, the classification criteria are not met   |
| (d) respiratory or skin sensitization; |                                                                               |
| Respiratory                            | Based on available data, the classification criteria are not met              |
| Skin                                   | Based on available data, the classification criteria are not met              |

**(e) germ cell mutagenicity;** Based on available data, the classification criteria are not met  
Mutagenic effects have occurred in experimental animals

**(f) carcinogenicity;** Based on available data, the classification criteria are not met  
The table below indicates whether each agency has listed any ingredient as a carcinogen

| Component        | CAS No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|------------------|-----------|------------|------------|------------|------------|------------|
| Sodium hydroxide | 1310-73-2 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Sodium carbonate | 497-19-8  | Not listed | Not listed | Not listed | Not listed | Not listed |

**(g) reproductive toxicity;** Based on available data, the classification criteria are not met

**(h) STOT-single exposure;** Based on available data, the classification criteria are not met

**(i) STOT-repeated exposure;** Based on available data, the classification criteria are not met

**Target Organs** None known.

**(j) aspiration hazard;** Not applicable  
Solid

**Symptoms / effects, both acute and delayed** Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated.

**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Endocrine Disrupting Properties** This product does not contain any known or suspected endocrine disruptors.

## 12. Ecological information

### Ecotoxicity

Do not empty into drains. Contains a substance which is: Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment.

| Component        | Freshwater Algae | Freshwater Fish                                                                 | Microtox | Water Flea                            |
|------------------|------------------|---------------------------------------------------------------------------------|----------|---------------------------------------|
| Sodium hydroxide | -                | LC50: = 45.4 mg/L, 96h static (Oncorhynchus mykiss)                             | -        | -                                     |
| Sodium carbonate | Not listed       | Lepomis macrochirus: LC50: 300 mg/L/96h<br>Gambusia affinis: LC50: 740 mg/L/96h | -        | EC50: = 265 mg/L, 48h (Daphnia magna) |

**Persistence and Degradability** Soluble in water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

**DOT**

UN-No UN1823  
 Proper Shipping Name Sodium hydroxide, solid  
 Hazard Class 8  
 Packing Group II

**TDG**

UN-No UN1823  
 Proper Shipping Name SODIUM HYDROXIDE, SOLID  
 Hazard Class 8  
 Packing Group II

**IATA**

UN-No UN1823  
 Proper Shipping Name SODIUM HYDROXIDE, SOLID  
 Hazard Class 8  
 Packing Group II

**IMDG/IMO**

UN-No UN1823  
 Proper Shipping Name SODIUM HYDROXIDE, SOLID  
 Hazard Class 8  
 Packing Group II

## 15. Regulatory Information

**United States of America Inventory**

| Component        | CAS No    | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|------------------|-----------|------|-----------------------------------------------|-----------------------------|
| Sodium hydroxide | 1310-73-2 | X    | ACTIVE                                        | -                           |
| Sodium carbonate | 497-19-8  | X    | ACTIVE                                        | -                           |

**Legend:**

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

- - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

**TSCA 12(b)** - Notices of Export

Not applicable

**International Inventories**

China, X = listed, Australia, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS), Taiwan (TCSI), Japan (ISHL), New Zealand (NZIoC), Japan (ISHL).

| Component        | CAS No    | DSL | NDSL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|------------------|-----------|-----|------|-----------|-------|------|------|------|-------|----------|
| Sodium hydroxide | 1310-73-2 | X   | -    | 215-185-5 | X     | X    | X    | X    | X     | KE-31487 |
| Sodium carbonate | 497-19-8  | X   | -    | 207-838-8 | X     | X    | X    | X    | X     | KE-31380 |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)**U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)**

| Component        | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|------------------|----------------------------|-----------------------------|------------------------|---------------------------|
| Sodium hydroxide | X                          | 1000 lb                     | -                      | -                         |

**Clean Air Act** Not applicable

**OSHA - Occupational Safety and Health Administration** Not applicable

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

| Component        | Hazardous Substances RQs | CERCLA Extremely Hazardous Substances RQs | SARA Reportable Quantity (RQ) |
|------------------|--------------------------|-------------------------------------------|-------------------------------|
| Sodium hydroxide | 1000 lb                  | -                                         | 1000 lb<br>454 kg             |

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

| Component        | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|------------------|---------------|------------|--------------|----------|--------------|
| Sodium hydroxide | X             | X          | X            | -        | X            |

**U.S. Department of Transportation**

Reportable Quantity (RQ): Y  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**Authorisation/Restrictions according to EU REACH**

| Component        | CAS No    | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|------------------|-----------|---------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Sodium hydroxide | 1310-73-2 | -                                                                   | Use restricted. See entry 75.<br>(see link for restriction details)           | -                                                                                                     |
| Sodium carbonate | 497-19-8  | -                                                                   | Use restricted. See entry 75.<br>(see link for restriction details)           | -                                                                                                     |

**REACH links**

<https://echa.europa.eu/substances-restricted-under-reach>

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

| Component        | CAS No    | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|------------------|-----------|----------|------------------------------|---------------------------|--------------------------------------------|
| Sodium hydroxide | 1310-73-2 | Listed   | Not applicable               | Not applicable            | Not applicable                             |
| Sodium carbonate | 497-19-8  | Listed   | Not applicable               | Not applicable            | Not applicable                             |

**Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?**

Not applicable

**Other International Regulations**

| Component        | CAS No    | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|------------------|-----------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------|------------------------------------|
| Sodium hydroxide | 1310-73-2 | Not applicable                                                                            | Not applicable                                                                           | Not applicable             | Annex I - Y35                      |
| Sodium carbonate | 497-19-8  | Not applicable                                                                            | Not applicable                                                                           | Not applicable             | Not applicable                     |

**16. Other Information****Prepared By**

Product stewardship (Regulatory Affairs)  
Thermo Fisher Scientific  
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**Creation Date**

11-Feb-2010

**Revision Date**

18-Dec-2025

**Print Date**

18-Dec-2025

**Revision Summary**

Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**