# Sodium hydroxide

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### Product identifier

* Product name: Sodium hydroxide
* CBnumber: CB8105015
* CAS: 1310-73-2
* EINECS Number: 215-185-5
* Synonyms: NaOH,sodium hydroxide,Caustic soda,Caustic Soda Flakes,Natriumhydroxid

### Relevant identified uses of the substance or mixture and uses advised against

* Relevant identified uses: For R&D use only. Not for medicinal, household or other use.
* Uses advised against: none

### Company Identification

* Company: EPOCH MASTER GLOBAL BUSINESS (JIANGSU) INC.
* Address: RM.3-93,TENGFEI BUILDING,NO.88 JIANGMIAO RD., RESEARCH AND INNOVATION
* PARK,NANJING ZONE, (JIANGSU) PILOT FREE TRADE ZONE, CHINA
* Telephone: +86258336556

## SECTION 2: Hazards identification

### GHS Label elements, including precautionary statements

* Symbol(GHS)
* Signal wordDanger

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

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

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.

P310 Immediately call a POISON CENTER or doctor/physician.

P405 Store locked up.

**Hazard statements**

H290 May be corrosive to metals

H314 Causes severe skin burns and eye damage

H318 Causes serious eye damage

## SECTION 3: Composition/information on ingredients

### Substance

* Product name: Sodium hydroxide
* Synonyms: NaOH,Sodium hydroxide
* CAS: 1310-73-2
* EC number: 215-185-5
* MF: NaOH

MW: 39.9971

## SECTION 4: First aid measures

### Description of first aid measures

**General advice**

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

**If inhaled**

After inhalation: fresh air. Call in physician.

**In case of skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

**In case of eye contact**

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

**If swallowed**

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

### Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### Indication of any immediate medical attention and special treatment needed

No data available

## SECTION 5: Firefighting measures

### Extinguishing media

**Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the

**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

### Special hazards arising from the substance or mixture

Sodium oxides Not combustible.

Ambient fire may liberate hazardous vapours.

### Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### NFPA 704

|  |  |  |  |
| --- | --- | --- | --- |
|  | HEALTH | 3 | Short exposure could cause serious temporary or moderate residual injury (e.g.[liquid hydrogen](https://www.chemicalbook.com/ChemicalProductProperty_EN_CB7686195.htm" \l "Safety" \t "https://www.chemicalbook.com/msds/_blank),[sulfuric acid](https://www.chemicalbook.com/ChemicalProductProperty_EN_CB9675634.htm" \l "Safety" \t "https://www.chemicalbook.com/msds/_blank), [calcium hypochlorite](https://www.chemicalbook.com/ChemicalProductProperty_EN_CB8854319.htm" \l "Safety" \t "https://www.chemicalbook.com/msds/_blank), hexafluorosilicic acid) |
|  | FIRE | 0 | Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride) |
|  | REACT | 1 | Normally stable, but can become unstable at elevated temperatures and pressures (e.g. [propene](https://www.chemicalbook.com/ChemicalProductProperty_EN_CB3750579.htm" \l "Safety" \t "https://www.chemicalbook.com/msds/_blank)) |
|  | SPEC. HAZ. |  |  |

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### Environmental precautions

Do not let product enter drains.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### Reference to other sections

For disposal see section 13.

## SECTION 7: Handling and storage

### Precautions for safe handling

For precautions see section 2.2.

### Conditions for safe storage, including any incompatibilities

### Storage conditions

No metal containers.

Tightly closed. Dry.

### Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls/personal protection

### control parameter

**Hazard composition and occupational exposure limits**

Does not contain substances with occupational exposure limits.

### Exposure controls

**Personal protective equipment**

**Eye/face protection**

Use equipment for eye protection tested and approved under appropriate

government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

**Skin protection**

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:KCL 741 Dermatril? L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:KCL 741 Dermatril? L

**Body Protection**

protective clothing

**Respiratory protection**

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type P2

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

**Control of environmental exposure**

Do not let product enter drains.

**Exposure limits**

TLV-TWA air 2 mg/m3 (OSHA); ceiling 2 mg/m3 (ACGIH) and 2 mg/m3/15 min (NIOSH).

## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

* AppearanceForm: pellets Color: white
* Odourodorless
* Odour ThresholdNot applicable
* pHca.>14 at 100 g/l at 20 °C
* Melting point/freezing pointMelting point/range: 318 °C
* Initial boiling point and boiling range1.390 °C at 1.013 hPa
* Flash pointNot applicable
* Evaporation rateNo data available
* Flammability (solid, gas)The product is not flammable.
* Upper/lower flammability or explosive limitsNo data available
* Vapour pressure< 24 hPa at 20 °C
* Vapour density1,38 - (Air = 1.0)
* Relative density2.13
* Water solubility1.090 g/l at 20 °C
* Partition coefficient: n-octanol/waterNot applicable for inorganic substances
* Autoignition temperatureNo data available
* Decomposition temperature176-178 ºC
* ViscosityViscosity, kinematic: No data available Viscosity, dynamic: No data available
* Explosive propertiesNo data available
* Oxidizing propertiesNo data available
* λmaxλ: 260 nm Amax: 0.015  
  λ: 280 nm Amax: 0.01

### Other safety information

Relative vapor 1,38 - (Air = 1.0)

density

## SECTION 10: Stability and reactivity

### Reactivity

No data available

### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions

Violent reactions possible with:

Acetone Chlorine Ethylene oxide Fluorine

Hydrogen halides Hydrazine hydrate hydroxylamine Acid anhydrides Acrolein

Acid chlorides Acids

sulfuric acid Chloroform Water

hydrogen peroxide anhydrides phosphides

halogen-halogen compounds trichloroethene

can decompose violently in contact with:

Organic Substances hydrogen sulphide

Risk of ignition or formation of inflammable gases or vapours with: powdered aluminium

Ammonium salts persulfates

Sodium borohydride phosphorus

Oxides of phosphorus Halogenated hydrocarbon Light metals

Metals

Risk of explosion/exothermic reaction with: Bromine

Calcium

in powder form furfuryl alcohol Nitromethane Peroxides

organic nitro compounds Nitriles

Acrylic monomers Chloroform

with Acetone

Nitrobenzene with Methanol Nitrobenzene with

salts magnesium Zinc

and Tin

(in the presence of atmospheric oxygen and/or moisture)

### Conditions to avoid

no information available

### Incompatible materials

Aluminum, brass, Metals, metal alloys, Zinc, Tin

### Hazardous decomposition products

In the event of fire: see section 5

## SECTION 11: Toxicological information

### Information on toxicological effects

**Acute toxicity**

Oral  
Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.  
Symptoms: burns of mucous membranes, Cough, Shortness of breath, Possible damages:, damage of respiratory tract  
Dermal

**Skin corrosion/irritation**

Skin - Rabbit  
Result: Causes burns.  
Remarks: (Regulation (EC) No 1272/2008, Annex VI)

**Serious eye damage/eye irritation**

Eyes - Rabbit  
Result: Causes serious eye damage. (OECD Test Guideline 405)  
Remarks: (Regulation (EC) No 1272/2008, Annex VI) Causes serious eye damage.

**Respiratory or skin sensitization**

Patch test: - In vitro study Result: negative Remarks: (ECHA)

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Toxicity**

LD orally in rabbits: 500 mg/kg (10% soln) (Fazekas)

## SECTION 12: Ecological information

### Toxicity

**Toxicity to fish**

LC50 - Gambusia affinis (Mosquito fish) - 125 mg/l - 96 h Remarks: (ECOTOX Database)

**Toxicity to daphnia and other aquatic invertebrates**

EC50 - Ceriodaphnia (water flea) - 40,4 mg/l - 48 h Remarks: (ECHA)

**Toxicity to bacteria**

EC50 - Photobacterium phosphoreum - 22 mg/l - 15 min Remarks: (External MSDS)

### Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

### Bioaccumulative potential

No data available

### Mobility in soil

No data available

### Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### Other adverse effects

Harmful effect due to pH shift.

Forms corrosive mixtures with water even if diluted.

Neutralisation possible in waste water treatment plants. Discharge into the environment must be avoided.

## SECTION 13: Disposal considerations

### Waste treatment methods

**Incompatibilities**

A strong base and a strong oxidizer. Violent reaction with acid. Incompatible with water; flammable liquids; organic halogens, nitromethane, and nitrocompounds, combustibles. Contact with moisture or water may generate heat. Corrosive to metals. Contact with zinc, aluminum, tin and lead in the presence of moisture, forming explosive hydrogen gas. Attacks some forms of plastics, rubber or coatings.

### Product

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

**Waste Disposal**

Discharge into tank containing water, neutralize, then flush to sewer with water.

## SECTION 14: Transport information

### UN number

ADR/RID: 1823 IMDG: 1823 IATA: 1823

### UN proper shipping name

|  |  |  |
| --- | --- | --- |
|  | ADR/RID: SODIUM HYDROXIDE, SOLID IMDG: SODIUM HYDROXIDE, SOLID |  |
| IATA: Sodium hydroxide, solid |  |  |
| 14.3 | Transport hazard class(es)  ADR/RID: 8 IMDG: 8 | IATA: 8 |
| 14.4 | Packaging group  ADR/RID: II IMDG: II | IATA: II |
| 14.5 | Environmental hazards  ADR/RID: no IMDG Marine pollutant: no | IATA: no |
| 14.6 | Special precautions for user  No data available |  |

## SECTION 15: Regulatory information

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

**Regulations on the Safety Management of Hazardous Chemicals**

China Catalog of Hazardous chemicals 2015:Listed. website: https://www.mem.gov.cn/

**Measures for Environmental Management of New Chemical Substances**

Korea Existing Chemicals List (KECL):Listed. website: http://ncis.nier.go.kr

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: https://www.mee.gov.cn/

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: https://www.epa.gov/

EC Inventory:Listed.

New Zealand Inventory of Chemicals (NZIoC):Listed. website: https://www.epa.govt.nz/

Vietnam National Chemical Inventory:Listed. website: https://chemicaldata.gov.vn/

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: https://emb.gov.ph/

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: https://echa.europa.eu/

## SECTION 16: Other information

### Abbreviations and acronyms

* CAS: Chemical Abstracts Service
* ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
* RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
* IMDG: International Maritime Dangerous Goods
* IATA: International Air Transportation Association
* TWA: Time Weighted Average
* STEL: Short term exposure limit
* LC50: Lethal Concentration 50%
* LD50: Lethal Dose 50%
* EC50: Effective Concentration 50%

### References

【1】CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

【2】ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

【3】ECHA - European Chemicals Agency, website: https://echa.europa.eu/

【4】eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request\_locale=en

【5】ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

【6】Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

【7】HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

【8】IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

【9】IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

【10】Sigma-Aldrich, website: https://www.sigmaaldrich.com/

### Other Information

The occupational exposure limit value should not be exceeded during any part of the working exposure.NEVER pour water into this substance; when dissolving or diluting always add it slowly to the water.Other UN number: UN1824 Sodium hydroxide solution, Hazard class 8, packing group II-III.

