

## Chemical Safety Data Sheet MSDS / SDS

## Sodium hydroxide

Revision Date:2024-04-20 Revision Number:1

## 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

## 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 : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## 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

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## 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

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## 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

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## 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.

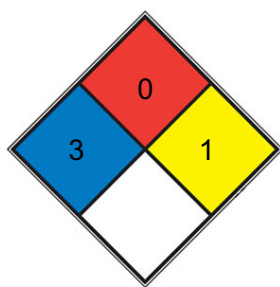
## Advice for firefighters

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](#), [sulfuric acid](#), [calcium hypochlorite](#), 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](#))

**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.

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## 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

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## 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](http://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](http://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 entrepreneur 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/m<sup>3</sup> (OSHA); ceiling 2 mg/m<sup>3</sup> (ACGIH) and 2 mg/m<sup>3</sup>/15 min (NIOSH).

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# SECTION 9: Physical and chemical properties

## Information on basic physicochemical properties

Appearance	white pellets
Odour	odorless
Odour Threshold	Not applicable
pH	ca.>14 at 100 g/l at 20 °C
Melting point/freezing point	Melting point/range: 318 °C
Initial boiling point and boiling range	1.390 °C at 1.013 hPa
Flash point	Not applicable
Evaporation rate	No data available
Flammability (solid, gas)	The product is not flammable.
Upper/lower flammability or explosive limits	No data available
Vapour pressure	< 24 hPa at 20 °C
Vapour density	1,38 - (Air = 1.0)
Relative density	2.13
Water solubility	1.090 g/l at 20 °C
Partition coefficient: n-octanol/water	Not applicable for inorganic substances
Autoignition temperature	No data available
Decomposition temperature	176-178 °C
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
Explosive properties	No data available
Oxidizing properties	No data available
λmax	λ: 260 nm Amax: 0.015 λ: 280 nm Amax: 0.01

## Other safety information

Relative vapor 1,38 - (Air = 1.0)

density

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## 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

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## 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)

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## 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.

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## 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](http://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.

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## 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	

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## 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/>

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/>

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

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## 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](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.

### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.