Report No.: MND220160QD_CN(En)_ADD
Nomination No.: MCHQD2210346-01

Safety Data Sheet（SDS）

Product Name：Sodium hydroxide; Caustic soda

Report Version：Prepared according to GB/T 17519-2013 and GB/T 16483-2008

Application Company Name：Tianjin Bohua Chemical Development Co.,Ltd.

Application Company Address：South Hongqi Road, East street 6, Nangang Industrial Zone, Tianjin, China

Contract Information：022-89898105

24 Hour Emergency Call：022-89898111

Report Edit time：*2022/6/13*

SGS-CSTC Standards Technical Services(Qingdao) Co.,Ltd

Authorised Signatory
2022-6-14

SGS Center, No.143, Zhuzhou Road, Laoshan District, Qingdao, Shandong, China t (86-0532) 68999367 www.sgsgroup.com.cn
中国・山东・青岛市崂山区株洲路143号通标中心 t (86-0532) 68999367 sgs.china@sgs.com

Safety Data Sheet

Sodium hydroxide; Caustic soda

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***Prepared according to GB/T 17519-2013 and GB/T 16483-2008**

1 Identification of the chemical and supplier

Product identifier

Product Name	Sodium hydroxide; Caustic soda; caustic soda
CAS No.	1310-73-2
EC No.	215-185-5
Molecular Formula	NaOH

Recommended use of the product and restrictions on use

Relevant identified uses	It is widely used as a neutralizer in various sodium salt manufacturing, soap, papermaking, cotton fabric, silk, viscose fiber, rubber product regeneration, metal cleaning, electroplating, bleaching, etc.
Uses advised against	Please consult manufacturer.

Details of the supplier of the Safety Data Sheet

Name of the company	Tianjin Bohua Chemical Development Co.,Ltd.
Address of the company	South Hongqi Road, East street 6, Nangang Industrial Zone, Tianjin, China
Post code	——
Telephone number	022-89898105
Fax number	——
E-mail address	abb@tjbhcd.com

Emergency phone number

Emergency phone number	022-89898111

2 Hazard(s) identification

Emergency overview

Liquid. Corrosive. Causes skin burns. Risk of serious damage to eyes. Risk of serious damage to eyes.

Hazard classification according to GHS

Corrosive To Metals	Category 1
Skin Corrosion/Irritation	Category 1A
Serious Eye Damage/Irritation	Category 1

GHS Label elements

Hazard pictograms	
Signal word	Danger

Hazard statements

H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage

Precautionary statements

◆ Prevention

P234	Keep only in original packaging.
P260	Do not breathe gas/mist/vapour/spray.
P264	Wash face and hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

◆ Response

P310	Immediately call a POISON CENTER/doctor.
P321	Specific treatment (see on this label).
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

◆ Storage

P405	Store locked up.
P406	Store in a corrosion resistant container with a resistant inner liner.

◆ Disposal

P501	Dispose of contents/container in accordance with local/regional/national/ international regulations.

Hazard description

◆ Physical and chemical hazards

	May materially damage, or even destroy metals through chemical reaction.

◆ Health hazards

Inhaled	Cough. Sore throat. Burning sensation. Shortness of breath.
Ingestion	Abdominal pain. Burns in mouth and throat. Burning sensation in the throat and chest. Nausea. Vomiting. Shock or collapse.
Skin Contact	Redness. Pain. Seriousskin burns. Blisters.
Eye	Redness. Pain. Blurred vision. Severe burns.

◆ Environmental hazards

	Please refer to 12th chapter of SDS.

3 Composition/information on ingredients

Substance/mixture

	Mixture

Component	CAS No.	EC No.	Concentration (wt, %)
Sodium hydroxide	1310-73-2	215-185-5	32~50

4 First-aid measures

Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Skin contact	Remove contaminated clothes. Rinse skin with plenty of water or shower for at least 15 minutes. Refer immediately for medical attention.
Ingestion	Rinse mouth. Do NOT induce vomiting. If within a few minutes after ingestion, one small glass of water may be given to drink. Refer immediately for medical attention.
Inhalation	Fresh air,rest. Refer immediately for medical attention.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

Most important symptoms, acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Advice for protecting the rescuer

1	Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.
2	Remove all sources of ignition and increase ventilation.
3	Avoid contact with skin and eyes.
4	Avoid inhalation of vapor or mist.
5	Use personal protective equipment including respirator.

Special note to the doctor

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Fog,sand.
Unsuitable extinguishing media	High pressure water.

Specific hazards arising from the substance or mixture

1	Fire may produce irritating, poisonous or corrosive gases.
2	Development of hazardous combustion gases or vapor possible in the event of fire.
3	May expansion or decompose explosively when heated or involved in fire.

Fire precautions and protective measures

1	As in any fire, wear self-contained breathing apparatus （MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

1	Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
2	Do not touch or walk through spilled material.
3	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
4	Use personal protective equipment,do not breathe gas/mist/vapour/spray.
5	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
6	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

1	Do not touch or cross spills.
2	It is recommended that emergency personnel wear a self-contained breathing apparatus with positive pressure and wear anti-corrosion clothing.
3	Transfer to a tank truck or special collector with a corrosion-resistant pump.
4	Do not touch broken containers and spills before putting on appropriate protective clothing.
5	Cut off the source of the leak as much as possible.
6	Keep leaks in a ventilated place.
7	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
8	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
9	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.

7 Handling and storage

Handling

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Avoid contact with skin and eyes.
4	Keep away from heat/sparks/open flames/ hot surfaces.

Storage

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

8 Exposure controls/personal protection

Control parameters

◆ Occupational Exposure limit values（Chemical Harmful Factors）

Component	Standard	OELs	Standard value mg/m³	Critical adverse health effects	Remark
Sodium hydroxide	GBZ 2.1-2019	PC-TWA	-	Upper respiratory tract, eye and skin irritation	-
		PC-STEL	-		
		MAC	2		

◆ Biological limit values

Biological limit values	No relevant regulations

◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 300 series standard Determination of toxic substances in workplace air.

Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

Personal protection equipment

General requirement	
Eye protection	Must wear appropriate anti-corrosion goggles.
Hand protection	Must wear acid and alkali resistant chemical protective gloves.
Respiratory protection	Must wear appropriate personal respiratory protective equipment.
Skin and body protection	Must wear acid and alkali resistant chemical protective clothing.

9 Physical and chemical properties

Physical and chemical properties

Appearance	The pure product is colorless transparent crystal with strong hygroscopicity
Odor	No information available
Odor threshold	No information available

pH	12 （1%solution）
Melting point/freezing point(°C)	318.4
Initial boiling point and boiling range(°C)	1390
Flash point(Closed cup,°C)	No information available
Evaporation rate	No information available
Flammability	No information available
Upper/lower explosive limits[%(v/v)]	Upper limit：No information available；Lower limit：No information available
Vapor pressure	0.13(739°C)
Vapor density(Air = 1)	No information available
Relative density(Water=1)	2.13
Solubility	Soluble in water, ethanol and glycerol, insoluble in acetone and ether.
n-octanol/water partition coefficient	-3.88
Auto-ignition temperature(°C)	No information available
Decomposition temperature(°C)	No information available
Viscosity	No information available

10 Stability and reactivity

Stability and reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	React violently with acids, phenols or alcohols.
Conditions to avoid	Incompatible materials, heat, flame and spark.
Incompatible materials	Acids, phenols, alcohols and nitro substituted hydrocarbon.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 Toxicological information

Acute toxicity

Acute toxicity	No information available

Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP
Sodium hydroxide	Not Listed	Not Listed

Others

Sodium hydroxide; Caustic soda; caustic soda	
Skin corrosion/irritation	Causes severe skin burns and eye damage(Category 1A)
Serious eye damage/irritation	Causes serious eye damage(Category 1)
Skin sensitization	Based on available data, the classification criteria are not met

Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	Based on available data, the classification criteria are not met
STOT-repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met
Reproductive toxicity(additional)	Based on available data, the classification criteria are not met

12 Ecological information

Acute aquatic toxicity

Component	Fish	Crustaceans	Algae
Sodium hydroxide	LC_{50}: 196mg/L (96h)(Fish)	EC_{50}：40.4mg/L (48h)(Crustaceans)	No information available

Chronic aquatic toxicity

Chronic aquatic toxicity	No information available

Persistence and degradability

Persistence and degradability	No information available

Bioaccumulative potential

Bioaccumulative potential	No information available

Mobility in soil

Mobility in soil	No information available

Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Sodium hydroxide	Not applicable

13 Disposal considerations

Disposal considerations

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

14 Transport information

Label and Mark

Transporting Label	

IMDG-CODE

UN number	1824
UN proper shipping name	SODIUM HYDROXIDE SOLUTION
Transport hazard class	8
Transport subsidiary hazard class	None
Packing group	Ⅱ
Marine pollutant（Yes or no）	No

IATA-DGR

UN number	1824
UN proper shipping name	SODIUM HYDROXIDE SOLUTION
Transport hazard class	8
Transport subsidiary hazard class	None
Packing group	Ⅱ

UN-ADR

UN number	1824
UN proper shipping name	SODIUM HYDROXIDE SOLUTION
Transport hazard class	8
Transport subsidiary hazard class	None
Packing group	Ⅱ

Others

Methods of packing	Ampoule outside the ordinary wooden box. Threaded glass, metal cover pressure bottles, plastic bottles or metal (cans) outside the ordinary wooden box. Thread mouth glass bottles, plastic bottles or tinplate barrels (LP), full floor grille boxes, fibreboard or plywood box etc. Frosted glass bottle or threaded glass outside the ordinary wooden box. Packaging as recommended by manufacturer.
Precautions for transport	Transport vehicles should be equipped with the appropriate variety and quantity of fire equipment and emergency equipment leakage during transport. Before transport, should be preceded by checking whether container integrity, sealing. The transport unit must be placarded and marked in accordance with relevant transporting requirements.

15 Regulatory information

International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AIIC	ENCS
Sodium hydroxide	√	√	√	√	√	√	√	√	√

[EINECS] European Inventory of Existing Commercial Chemical Substances
[TSCA] United States Toxic Substances Control Act Inventory
[DSL] Canadian Domestic Substances List
[IECSC] China Inventory of Existing Chemical Substances
[NZIoC] New Zealand Inventory of Chemicals
[PICCS] Philippines Inventory of Chemicals and Chemical Substances

[KECI] Korea Existing Chemicals Inventory
[AIIC] Australia. Inventory of Industrial Chemicals (AIIC)
[ENCS] Japan Inventory of Existing & New Chemical Substances

Chinese chemical inventory

Component	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Sodium hydroxide	√	×	×	×	×	×	×	×	×	×	×	×	×	×	×

【A】 Catalog of Hazardous Chemicals(2015 Edition), Notice 5th 2015, the former China State Administration of Work Safety together with the Ministry of Industry and Information Technology, etc.
【B】 List of Toxic Chemicals Restricted in China, Notice 60th 2019, the Ministry of Ecology and Environment, Ministry of Commerce, General Administration of Customs.
【C】 List of Ozone Depletion Chemicals Controlled to be Imported/Exported in China（First to Sixth batches）, Notice from 2000 to 2012, the former Ministry of Environmental Protection of PRC.
【D】 Catalog of Hazardous Chemicals for Priority Management（First and Second batches）, Notice 95th, 2011, Notice 12th 2013, China State Administration of Work Safety.
【E】 Catalog of Hazardous Chemicals for Environmental Management, Notice 33th 2014, The former Ministry of Environmental Protection.
【F】 List of Various Monitoring Chemicals, 52th 2020, the Ministry of Industry and Information Technology.
【G】 List of Priority Controlled Chemicals (the First batch), 83th 2017, the former Ministry of Environmental Protection, Ministry of Industry and Information Technology, the former National Health And Family Planning Commission.
【H】 Catalog of Specially Controlled Hazardous Chemicals (First Edition), 1st 2020, the Ministry of Emergency Management, Ministry of Industry and Information Technology, Ministry of Public Security, Ministry of Transport.
【I】 List of Toxic and Harmful Water Pollutants (First batch), 28th 2019, the Ministry of Ecology and Environment, National Health Commission.
【J】 Catalog of Highly Toxic Chemicals, Notice 142th 2003, the former Ministry of Health of P.R.China.
【K】 Dangerous Chemicals Directory Used to Manufacure Exploder (2017 Edition), Notice 11th May. 2017, Ministry of Public Security of P.R.China.
【L】 Catalog of Stupefacient and Psychotropic Substances(2013 Edition), Notice 230th 2013, China Food and Drug Administration.
【M】 Catalog of Classification and Varieties of Precursor Chemicals, 120th 2017, series of announcements issued by the Ministry of Public Security and other ministries and commissions.
【N】 Catalog of Import and Export Management of Precursor Chemicals, 7th 2006, the Ministry of Commerce.
【O】 International Verification of Precursor Chemicals Management Catalog, 8th 2006, the Ministry of Commerce, Ministry of Public Security.

Note:
"√" Indicates that the substance included in the regulations.
"×" No data or not inlcuded in the regulations.

16 Other information

Information on revision

Creation Date	2022/06/13
Revision Date	2022/06/13
Reason for revision	-

Reference

[1] IPCS: The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home。
[2] IARC, website: http://www.iarc.fr/。
[3] OECD: The Global Portal to Information on Chemical Substances, website: https://www.echemportal.org/echemportal/substancesearch/index.action。
[4] CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple。
[5] NLM: ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp。
[6] EPA: Integrated Risk Information System, website: http://cfpub.epa.gov/iris/。
[7] U.S. Department of Transportation: ERG, website: http://www.phmsa.dot.gov/hazmat/library/erg。

[8] Germany GESTIS-database on hazard substance, website: http://gestis-en.itrust.de/。

Abbreviations and acronyms

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG	International Maritime Dangerous Goods
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC_{50}	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD_{50}	Lethal Dose 50%	NTP	National Toxicology Program
EC_{50}	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC_X	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P_{OW}	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor		

Disclaimer

This Safety Data Sheet (SDS) was prepared according to GB/T 16483 and GB/T 17519. The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.