

**Safety Data Sheet****1. Chemical product and company identification**

Product name	:	4% Sodium hydroxide solution
SDS code	:	N5-06
Company/undertaking identification	:	HAYASHI PURE CHEMICAL IND.,LTD. Address : 3-2-12 Uchihiranomachi, Chuo-ku, Osaka, Osaka, Japan Telephone : 06-6910-7305 E-mail : shiyaku_kikaku@hpc-j.co.jp URL : <a href="https://www.hpc-j.co.jp/">https://www.hpc-j.co.jp/</a>
Emergency number	:	06-6910-7305
Recommended use	:	For research and experimental use only.
Restrictions on use	:	Do not use on a human body or for animal medicines, foods, household products, cosmetics, etc.

**2. Hazards identification****GHS classification**

Physical hazards	Explosives	classification not possible
	Flammable gases	No classification
	Aerosol	classification not possible
	Oxidizing gases	No classification
	Gases under pressure	No classification
	Flammable liquids	classification not possible
	Flammable solids	No classification
	Self-reactive substances and mixtures	classification not possible
	Pyrophoric liquids	classification not possible
	Pyrophoric solids	No classification
	Self-heating substances and mixtures	classification not possible
	Substances and mixtures which in contact with water emit flammable gases	classification not possible
	Oxidizing liquids	classification not possible
	Oxidizing solids	No classification
	Organic peroxides	classification not possible
	Corrosive to metals	Category 1
	Desensitized explosives	classification not possible
	Acute toxicity (oral)	classification not possible
Health hazards	Acute toxicity (dermal)	classification not possible
	Acute toxicity (inhalation:gas)	No classification
	Acute toxicity (inhalation:vapors)	classification not possible
	Acute toxicity (inhalation:dust/mist)	classification not possible
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Respiratory sensitization	classification not possible
	Skin sensitization	No classification
	Germ cell mutagenicity	No classification
	Carcinogenicity	classification not possible
	Reproductive toxicity	classification not possible
	Specific target organ toxicity (single exposure)	Category 2 (respiratory system)

Environmental hazards	Specific target organ toxicity (repeated exposure)	classification not possible
	Aspiration hazard	classification not possible
	Hazardous to the aquatic environment, short-term (acute)	No classification
	Hazardous to the aquatic environment, long-term (chronic)	No classification
	Hazardous to the ozone layer	classification not possible
Hazard pictograms (GHS JP)	 	
Signal word (GHS JP)	: Danger	
Hazard statements (GHS JP)	: May be corrosive to metals (H290) Causes severe skin burns and eye damage (H314) May cause damage to organs (respiratory system) (H371)	
Precautionary statements (GHS JP)		
Prevention	: Keep only in original container. (P234) Do not breathe dust/fume/gas/mist/vapors/spray. (P260) Wash hands, forearms and face thoroughly after handling. (P264) Do not eat, drink or smoke when using this product. (P270) Wear protective gloves/protective clothing/eye protection/face protection. (P280)	
Response	: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. (P301+P330+P331) IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. (P303+P361+P353) IF INHALED: Remove person to fresh air and keep comfortable for breathing (P304+P340) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305+P351+P338) IF exposed or concerned: Call a POISON CENTER or doctor. (P308+P311) Immediately call a POISON CENTER or doctor. (P310) Wash contaminated clothing before reuse. (P363) Absorb spillage to prevent material-damage. (P390)	
Storage	: Store locked up. (P405) Store in corrosive resistant container with a resistant inner liner. (P406)	
Disposal	: Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. (P501)	

### 3. Composition/information on ingredients

Distinction of substance or mixture : Mixture

Name	Concentration or Concentration range	Formula	Kanpo number		CAS RN
			CSCL no	ISHL no	
Sodium hydroxide	About 4%	NaOH	(1)-410	Existing Chemical Substance	1310-73-2
Water	About 96%	H2O	-	-	7732-18-5

The above concentration or concentration range are not product specification.

All percentages listed in the above concentration or concentration range are wt%, unless otherwise specified.

## 4. First aid measures

### First aid measures

First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Get immediate medical advice/attention.
First-aid measures after skin contact	: Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Get immediate medical advice/attention.
First-aid measures after eye contact	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
First-aid measures after ingestion	: Do NOT induce vomiting. Rinse mouth. Get immediate medical advice/attention.

## 5. Fire fighting measures

Suitable extinguishing media	: Water spray, Alcohol-resistant foam, Dry powder, Carbon dioxide, Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.
Fire hazard	: This product is unburnable.
Explosion hazard	: May induce explosion of containers by heating.
Hazardous decomposition products in case of fire	: In case of fire, product may produce irritative or toxic fumes/gases.
Firefighting instructions	: If ignited, for the initial fire-fighting, cut off combustion sources, extinguish fire at a stroke using appropriate fire-extinguishers. In the case of peripheral fire, quickly remove movable containers to safe places. If unable to be moved containers, sprinkle water to containers and surrounding equipment, etc. to cool. Avoid (reject) fire-fighting water to enter environment. Even after extinguishing fire, thoroughly cool containers by using plenty of water.
Protection during firefighting	: Wear appropriate fire-resistant clothing including self contained-compressed air breathing apparatus.

## 6. Accidental release measures

### Personal Precautions, Protective Equipment and Emergency Procedures

General measures	: Before entering, ventilate the area. Do not let unauthorized persons come close to the area. Immediately place the leakage area in isolation, with taking proper distances for all directions. Wear appropriate personal protective devices to prevent inhalation and contact with eye, skin, and clothing, and never attempt to work on the lee.
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### Environmental precautions

Environmental precautions	: Avoid release to the environment. Prevent entry to sewers and public waters.
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### Methods and Equipment for Containment and Cleaning up

Methods for cleaning up	: Clean up any spills as soon as possible, using an absorbent material to collect it. Collect leaking and spilled liquid in sealable containers as far as possible. Wash out the spilled area with large amounts of water.
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## 7. Handling and storage

### Handling

Technical measures	: Work with appropriate personal protective equipment to prevent inhalation or contact to eyes, skin, and clothing. Handle with care to prevent leakage, overflowing, or scattering, minimize generation of mist or vapor, and thoroughly ventilate.
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Precautions for safe handling	: Do not eat, drink or smoke when using this product. Thoroughly wash your hands and gargle after handling. Ensure good ventilation of the work station. Do not contact, breathe or swallow.
Prevents handling of incompatible substances or mixtures	: Avoid prolonged or repeated exposure.
<b>Storage</b>	
Storage conditions	: Store locked up. Store in a well-ventilated place, away from direct sunlight. Keep container tightly closed and keep away from fire and heat sources. Store in corrosive resistant container with a resistant inner liner.
Material used in packaging/containers	: Airtight container. Storage prohibition in glass or porcelain container.
Technical measures	: Comply with applicable regulations.
Storage temperature	: Cool and dark place

## 8. Exposure controls / Personal protection equipment

Component name	Administration level (MHLW)	Exposure limits (JSOH)	
		Standard Value	JSOH OEL C
Sodium hydroxide	-	-	2 mg/m <sup>3</sup>

Appropriate engineering controls : Cover up tightly the generation source at the handling place or install local exhaust equipment or overall ventilation equipment. Install safety showers and eye-fountains near a handling place. Clearly indicate the location.

### Protective equipment

Respiratory protection	: Gas mask
Hand protection	: Impervious protective gloves
Eye protection	: Protective glasses (general glasses, glasses with side-shields, goggles)
Skin and body protection	: Impervious aprons, Impervious work clothing, Impervious long boots

## 9. Physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid
Color	: colorless transparent
Odor	: Odorless
pH	: $\geq 13$ (25°C)
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Density	: 1.04 g/cm <sup>3</sup> (20°C)
Relative gas density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Explosive limits (vol %)	: No data available
Viscosity, kinematic	: No data available
Particle characteristics	: No data available

## 10. Stability and reactivity

Reactivity	: No data available
Chemical stability	: Stable under normal handling conditions. Absorbs carbon dioxide in air.
Possibility of hazardous reactions	: It is a strong base and reacts violently with acids to generate heat. Reacts with ammonium salts to produce ammonia, causing fire hazard. Erodes some plastics, rubbers and coatings. Erodes metals such as zinc, aluminium, tin and lead, producing flammable/explosive gas (hydrogen).
Conditions to avoid	: Sunlight, heat. Contact with strong acids, strong oxidizing agents, ammonium salts and metals.
Incompatible materials	: Strong acids, Strong oxidizing agents, Ammonium salts, Metals
Hazardous decomposition products	: Sodium oxides, Hydrogen

## 11. Toxicological information

The information in this section is based on the "GHS Classification Results" by NITE.

<b>As a product</b>	
Acute toxicity (oral)	classification not possible
Acute toxicity (dermal)	classification not possible
Acute toxicity (inhalation)	vapors:classification not possible Gases:No classification dust, mist:classification not possible
Skin corrosion/irritation	Category 1
Serious eye damage/irritation	Category 1
Respiratory sensitization	classification not possible
Skin sensitization	No classification
Germ cell mutagenicity	No classification
Carcinogenicity	classification not possible
Reproductive toxicity	classification not possible
STOT-single exposure	Category 2
STOT-repeated exposure	classification not possible
Aspiration hazard	classification not possible
<b>Sodium hydroxide</b>	
Acute toxicity (oral)	classification not possible
Acute toxicity (dermal)	classification not possible
Acute toxicity (gas)	No classification
Acute toxicity (vapour)	classification not possible
Acute toxicity (inhalation:dust/mist)	classification not possible
Skin corrosion/irritation	Category 1
Serious eye damage/irritation	Category 1
Respiratory sensitization	classification not possible
Skin sensitization	No classification
Germ cell mutagenicity	No classification
Carcinogenicity	classification not possible
Reproductive toxicity	classification not possible
STOT-single exposure	Category 1
STOT-repeated exposure	classification not possible
Aspiration hazard	classification not possible
<b>Water</b>	
Acute toxicity (oral)	No classification
Acute toxicity (dermal)	No classification
Acute toxicity (gas)	No classification
Acute toxicity (vapour)	No classification
Acute toxicity (inhalation:dust/mist)	No classification
Skin corrosion/irritation	No classification
Serious eye damage/irritation	No classification
Respiratory sensitization	No classification
Skin sensitization	No classification
Germ cell mutagenicity	No classification
Carcinogenicity	No classification

<b>Water</b>	
Reproductive toxicity	No classification
STOT-single exposure	No classification
STOT-repeated exposure	No classification
Aspiration hazard	No classification

## 12. Ecological information

The information in this section is based on the "GHS Classification Results" by NITE.

<b>As a product</b>	
Hazardous to the aquatic environment, short-term (acute)	No classification
Hazardous to the aquatic environment, long-term (chronic)	No classification
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Ozone	classification not possible

  

<b>Sodium hydroxide</b>	
Hazardous to Aquatic Environment - Acute Hazard	Category 3
Hazardous to Aquatic Environment - Chronic Hazard	No classification
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Hazardous to the ozone layer	classification not possible

  

<b>Water</b>	
Hazardous to Aquatic Environment - Acute Hazard	No classification
Hazardous to Aquatic Environment - Chronic Hazard	No classification
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Hazardous to the ozone layer	classification not possible

## 13. Disposal considerations

Ecology - waste materials : With the detail information of the waste, subcontract its disposal to a waste disposer authorized by a Prefectural Governor.

Contaminated container and packaging : Empty the packaging completely prior to disposal.  
Empty containers should be taken for recycle, recovery or waste in accordance with local regulation.

## 14. Transport information

### International Regulations

#### Transport by sea(IMDG)

UN-No. (IMDG)	: 1824
Proper Shipping Name (IMDG)	: SODIUM HYDROXIDE SOLUTION
Packing group (IMDG)	: II
Transport hazard class(es) (IMDG)	: 8
Hazard labels (IMDG)	: 8
Class (IMDG)	: 8
Limited quantities (IMDG)	: 1 L
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
Tank instructions (IMDG)	: T7

Tank special provisions (IMDG)	:	TP2
Stowage category (IMDG)	:	A
Properties and observations (IMDG)	:	Colourless liquid. Corrosive to aluminium, zinc and tin. Reacts with ammonium salts, evolving ammonia gas. Causes burns to skin, eyes and mucous membranes. Reacts violently with acids.
MFAG-No	:	154
<b>Air transport(IATA)</b>		
UN-No. (IATA)	:	1824
Proper Shipping Name (IATA)	:	Sodium hydroxide solution
Packing group (IATA)	:	II
Transport hazard class(es) (IATA)	:	8
Hazard labels (IATA)	:	8
Class (IATA)	:	8
PCA Excepted quantities (IATA)	:	E2
PCA Limited quantities (IATA)	:	Y840
PCA limited quantity max net quantity (IATA)	:	0.5L
PCA packing instructions (IATA)	:	851
PCA max net quantity (IATA)	:	1L
CAO packing instructions (IATA)	:	855
CAO max net quantity (IATA)	:	30L
Special provision (IATA)	:	A3, A803
ERG code (IATA)	:	8L
<b>Marine pollutant</b>	:	Not applicable
<b>Regulations in Japan</b>		
Regulatory information by sea	:	Conform to the provisions of the Ship Safety Law.
Regulatory information by air	:	Conform to the provisions of the Civil Aeronautics Law.
MFAG-No	:	154
<b>Special transport precautions</b>	:	When transporting, load containers so that they do not tip over, damage, drop or collapse. Make sure there is no leak in containers.

## 15. Regulatory information

### National law

Industrial Safety and Health Law	:	Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18) Dangerous or Harmful Substances for Notification of Chemical Name etc. on SDS (Law Art.57-2, Enforcement Order Art.18-2) Sodium hydroxide Corrosive Liquids (Ordinance on Industrial Safety and Health Law Art. 326) Chemical substances that damage the skin, etc. Harmful substances that cause skin irritation (Ordinance on Industrial Safety and Health, Article 594-2, Para.1, list of substances applicable to No. 0704 Item 1, 5 based on July 4, 2023)
Japanese Poisonous and Deleterious Substances Control Law	:	Not applicable
Water Pollution Prevention Law	:	Designated Chemical Substances (Law Article 2, Paragraph 4, Enforcement Order Article 3-3)
Fire Service Law	:	Not applicable
Law Relating to Prevention of Marine Pollution and Maritime Disasters	:	Noxious Liquid Substances - Category Z (Law Art.3(3), Enforcement Order, Art.1-2, Attached Table No.1 Item 3)
Foreign Exchange and Foreign Trade Control Act	:	Export Trade Control Ordinance appendix 1-16
Ship Safety Act	:	Corrosive substances (Dangerous Goods Notification Schedule first second and third Article Dangerous Goods Regulations)
Civil Aeronautics Law	:	Corrosive substances (Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)
Port Regulation Law	:	Corrosive substances (Article 21, Paragraph 2 of Law, Article 12 rule, notice attached table that defines the type of dangerous goods)
Waste Management on Public Cleansing Law	:	Specially Controlled Industrial Wastes (Act Art.2, para 5, Enfothment Order Art.2-4)
Waterworks Law	:	Hazardous Substances (Act Article 4 paragraph 2), Standard for Water Quality (Ministry Order No.101 of 2003)

Japanese Pollutant Release and Transfer Register Law (PRTR Law)

: Not applicable

Labor Standards Act

: Chemical Substances Causing Occupational Illnesses (Act Art.75, Para.2, Ordinance Attached Table 1-2, Item 4-1, MHLW Notification No.36 of 1978)

## 16. Other information

Data sources

: Handbook of 17524 Chemical Products, The Chemical Daily Co, Ltd. International Chemical Safety Cards.  
National Institute of Technology and Evaluation (NITE).  
2020 Emergency Response Guidebook (ERG 2020).

Other information

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