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SDS No. Exempt, SR&D

MOEL's Public Notice No. 2023-9 (Standards for Classification and Labeling of Chemical Substances and Safety Data Sheets)

# SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**Product Identifier** 

Product Description: Sodium hydroxide, 0.5N Standardized Solution

Cat No. : S60311 Molecular Formula H Na O

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

Recommended Use Laboratory chemicals. Uses advised against No Information available

Details of the supplier of the safety data sheet

Importer Supplier

Fisher Scientific Korea Thermo Fisher Scientific Chemicals, Inc.

D5,D6, Incheon Airport Logistics Complex 30 Bond Street

150, Gonghangdong-Ro 296 Beon-Gil Ward Hill, MA 01835-8099

Jung-Gu, Incheon Tel: +82-1661-9555 Fax: +82-2-2023-0603

E-mail address Chem.KR@thermofisher.com

**Emergency Telephone Number** 

Emergency telephone: Medical: +(82) 070-7686-0086 or + 1-703-741-5970

CHEMTREC: 080 822 1374 (Local), CHEMTREC: 1-800-424-9300 or + 1-703-527-3887

Korea: 00-308-13-2549 (24 hours a day, 7 days a week)

### **SECTION 2: HAZARDS IDENTIFICATION**

#### Classification of the substance or mixture

### Physical hazards

Substances/mixtures corrosive to metal Category 1

**Health hazards** 

Skin Corrosion/Irritation Category 2
Serious Eye Damage/Eye Irritation Category 2

**Environmental hazards** 

Based on available data, the classification criteria are not met

#### **Label Elements**

ALFAAS60311



Signal Word Warning

#### **Hazard Statements**

H290 - May be corrosive to metals

H315 - Causes skin irritation

H319 - Causes serious eye irritation

#### **Precautionary Statements**

#### Prevention

P234 - Keep only in original packaging

P264 - Wash hands and face thoroughly after handling

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

#### Response

P390 - Absorb spillage to prevent material damage

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P321 - Specific treatment (see supplemental first aid instructions on this label)

P332 + P313 - If skin irritation occurs: Get medical advice/attention

P362 + P364 - Take off contaminated clothing and wash it before reuse

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

P337 + P313 - If eye irritation persists: Get medical advice/attention

#### Storage

P406 - Store in corrosion resistant polypropylene container with a resistant inliner

#### Other Hazards

This product does not contain any known or suspected endocrine disruptors

NFPA

Health	Flammability	Instability	Physical hazards
3	0	0	N/A

# **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

### 3.2. Mixtures

Component	Common Name	CAS No	Index No	Weight %
Water	Aqua	7732-18-5	KE-35400	98 - 98.5
Sodium hydroxide	Caustic soda; Lye	1310-73-2	KE-31487	1.5 - 2

# **SECTION 4: FIRST AID MEASURES**

Description of first aid measures

**General Advice** If symptoms persist, call a physician.

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get

medical attention.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists,

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call a physician.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if Inhalation

symptoms occur.

Ensure that medical personnel are aware of the material(s) involved, take precautions to Self-Protection of the First Aider

protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to

the delicate tissue and danger of perforation.

Indication of any immediate medical attention and special treatment needed

**Notes to Physician** Treat symptomatically.

### **SECTION 5: FIREFIGHTING MEASURES**

#### Extinguishing media

#### **Suitable Extinguishing Media**

Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

#### Extinguishing media which must not be used for safety reasons

No information available.

### Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. Corrosive material. Causes burns by all exposure routes.

# **Hazardous Combustion Products**

Sodium oxides.

### Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

# **SECTION 6: ACCIDENTAL RELEASE MEASURES**

#### Personal Precautions, Protective Equipment and Emergency Procedures

Ensure adequate ventilation. Use personal protective equipment as required.

# **Environmental precautions**

Should not be released into the environment. See Section 12 for additional Ecological Information.

# Methods and Material for Containment and Cleaning Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

### Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

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# **SECTION 7: HANDLING AND STORAGE**

#### Precautions for Safe Handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Ensure adequate ventilation. Avoid ingestion and inhalation.

### Conditions for Safe Storage, Including any Incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

#### Specific End Uses

Use in laboratories.

## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### **Control Parameters**

Component	CAS No	Korea	ACGIH TLV	OSHA PEL
Water	7732-18-5	Not listed	Not listed	Not listed
Sodium hydroxide	1310-73-2	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m³ TWA: 2 mg/m³

Component	CAS No	European Union	The United Kingdom	Germany
Water	7732-18-5	Not listed	Not listed	Not listed
Sodium hydroxide	1310-73-2	Not listed	2 mg/m <sup>3</sup> STEL	2 mg/m³ TWA (inhalable
				fraction)

#### **ACGIH - Biological Exposure Indices**

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Component	CAS No	ACGIH - Biological Exposure Indices			
Water	7732-18-5	Not listed			
Sodium hydroxide	1310-73-2	Not listed			

#### **Exposure Controls**

#### **Engineering Measures**

Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

# Personal protective equipment

**Eye Protection** Goggles

Hand Protection Protective gloves
Skin and body protection Long sleeved clothing

#### Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Personal protective equipment

Respiratory Protection

Use only those certified by the Korea Occupational Safety and Health Administration. When workers are facing concentrations above the exposure limit they must use

appropriate certified respirators

**Recommended Filter type:** 

Particulates filter conforming to EN 143

To protect the wearer, respiratory protective equipment must be the correct fit and be used

and maintained properly

Sodium hydroxide, 0.5N Standardized Solution

When RPE is used a face piece Fit Test should be conducted

Handle in accordance with good industrial hygiene and safety practice

**Environmental exposure controls** Prevent product from entering drains

# **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Information on basic physical and chemical properties

Appearance (Physical State, Color, Colorless Liquid

etc.)

**Odor** Odorless

Odor Threshold No data available

**pH** > 12

Melting Point/Range > 0 °C / 32 °F Estimated

Softening Point No data available

Boiling Point/Range > 100 °C / 212 °F Estimated

Flash Point Not applicable Method - No information available

Evaporation Rate No data available

Flammability (solid,gas) Not applicable Liquid

Explosion Limits No data available

Vapor Pressure No data available

Vapor Density > 1.0 (Air = 1.0)

Specific Gravity / Density > 1.0

Bulk Density Not applicable Liquid

Water Solubility Soluble in water

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Component	CAS No	log Pow
Water	7732-18-5	No data available
Sodium hydroxide	1310-73-2	No data available

Autoignition Temperature
Decomposition Temperature
Viscosity
No data available
No data available
No data available
No data available
Not explosive

Oxidizing Properties No information available

Molecular FormulaH Na OMolecular Weight40

# **SECTION 10: STABILITY AND REACTIVITY**

Reactivity

None known, based on information available

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Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

**Hazardous Polymerization** Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

**Conditions to Avoid** 

Exposure to air. Incompatible products.

Incompatible Materials

Acids. Organic materials. Metals. Aluminium. copper. Zinc.

**Hazardous Decomposition Products** 

Sodium oxides.

# **SECTION 11: TOXICOLOGICAL INFORMATION**

#### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### **Product Information**

Information on expected route of exposure

**Inhalation** Harmful by inhalation.

**Ingestion** Ingestion causes burns of the upper digestive and respiratory tracts. Can burn mouth,

throat, and stomach. Harmful if swallowed.

Eyes Causes burns. Corrosive to the eyes and may cause severe damage including blindness.

Risk of serious damage to eyes.

Skin Causes burns.

Information on Health Hazards

(a) acute toxicity;

Oral

Dermal
Based on available data, the classification criteria are not met
Based on available data, the classification criteria are not met
Inhalation
Based on available data, the classification criteria are not met

#### Toxicology data for the components

Component	CAS No	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	7732-18-5	-	-	-
Sodium hydroxide	1310-73-2	140 - 340 mg/kg (Rat)	1350 mg/kg (Rabbit)	No data available

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

**Respiratory**Skin
No data available
No data available

Component	CAS No	Test method	Test species	Study result
Water	7732-18-5	No data available	No data available	No data available

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	Γ	Sodium hydroxide	1310-73-2	No data available	No data available	No data available
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(e) germ cell mutagenicity; No data available

Component	CAS No Test me		Test species	Study result	
Water	7732-18-5	No data available	No data available	No data available	
Sodium hydroxide	1310-73-2	No data available	No data available	No data available	

(f) carcinogenicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
Water	7732-18-5	No data available	No data available	No data available
Sodium hydroxide	1310-73-2	No data available	No data available	No data available

There are no known carcinogenic chemicals in this product

Component	CAS No	IARC	NTP	ACGIH	OSHA	UK
Water	7732-18-5	Not listed				
Sodium hydroxide	1310-73-2	Not listed				

(g) reproductive toxicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
Water	7732-18-5	No data available	No data available	No data available
Sodium hydroxide	1310-73-2	No data available	No data available	No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target OrgansNo information available.

(j) aspiration hazard; No data available

# **Other Adverse Effects**

Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

Component	CAS No	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Sodium hydroxide	1310-73-2	Not applicable	Not applicable	Not applicable

# **SECTION 12: ECOLOGICAL INFORMATION**

**Ecotoxicity effects**Contains no substances known to be hazardous to the environment or that are not

degradable in waste water treatment plants. Large amounts will affect pH and harm aquatic

organisms.

Component	CAS No	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Water	7732-18-5	No data available	No data available	No data available	No data available
Sodium hydroxide	1310-73-2	LC50 = 45.4 mg/L, 96h static (Oncorhynchus mykiss)	No data available	No data available	No data available

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Persistence and degradability

Persistence Soluble in water, Persistence is unlikely, based on information available.

**Degradability** Not relevant for inorganic substances.

Degradation in sewage Neutralization is normally necessary before waste water is discharged into water treatment

treatment plant plants.

Bioaccumulative potential Bioaccumulation is unlikely

Mobility in soil The product is water soluble, and may spread in water systems . Will likely be mobile in the

environment due to its water solubility. Highly mobile in soils.

**Ozone Depletion Potential** 

Component	CAS No	Ozone Depletion Potential
Water	7732-18-5	Not listed
Sodium hydroxide	1310-73-2	Not listed

Other adverse effects No information available

# **SECTION 13: DISPOSAL CONSIDERATIONS**

Waste treatment methods

Waste from Residues/Unused

**Products** 

Waste is classified as hazardous. Dispose in accordance with the Wastes Control Act

(폐기물관리법).

**Contaminated Packaging** Dispose of this container to hazardous or special waste collection point.

Other Information Do not flush to sewer. Waste codes should be assigned by the user based on the

application for which the product was used. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Solutions with high pH-value must be neutralized

before discharge.

# **SECTION 14: TRANSPORT INFORMATION**

Road and Rail Transport

**UN-No** UN1824

Proper Shipping Name SODIUM HYDROXIDE SOLUTION

Hazard Class 8
Packing Group III

IATA

**UN-No** UN1824

Proper Shipping Name SODIUM HYDROXIDE SOLUTION

Hazard Class 8
Packing Group III

IMDG/IMO

UN-No UN1824

Proper Shipping Name SODIUM HYDROXIDE SOLUTION

Hazard Class 8
Packing Group III

Marine Pollutant No hazards identified

Special Precautions for User No special precautions required

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# **SECTION 15: REGULATORY INFORMATION**

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

Legend: X - Listed '-' - Not Listed

# **International Inventories**

Component	CAS No	KECL	TSCA	EINECS	IECSC	DSL	NDSL	PICCS	ENCS	ISHL	AICS
Water	7732-18-5	KE-35400	Х	231-791-2	Х	Х	-	Х	Х		Х
Sodium hydroxide	1310-73-2	KE-31487	Х	215-185-5	Х	Х	-	Х	Х	Х	Х

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)
Water	7732-18-5	Not applicable	Not applicable	Not applicable	Not applicable
Sodium hydroxide	1310-73-2	Not applicable	Not applicable	Not applicable	Annex I - Y35

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential
Water	7732-18-5	Listed	Not applicable	Not applicable
Sodium hydroxide	1310-73-2	Listed	Not applicable	Not applicable

# **Korean National Regulations**

Component	CAS No	Act on Registration and Evaluation of Chemical Substances (K-REACH)	Authorised Chemicals	Existing Substances Subject to Registration
Water	7732-18-5	Annex 1 - KE-35400 Exempt (Index No. 25)	Not applicable	Not applicable
Sodium hydroxide	1310-73-2	Annex 1 - KE-31487	Not applicable	Listed

Component	CAS No	Chemical Control Act - Toxic Chemicals	Chemical Control Act - Prohibited Chemicals	Chemical Control Act - Use Restricted Chemicals
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Sodium hydroxide	1310-73-2	1997-1-0136 (>5%)	Not applicable	Not applicable

	Component	CAS No	Chemical Control Act - Accident Precaution Chemicals (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Storage (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Manufacture/Use (% in mixtures)
Г	Water	7732-18-5	Not applicable	Not applicable	Not applicable
	Sodium hydroxide	1310-73-2	Not applicable	Not applicable	Not applicable

Component	CAS No	Waste Control Law	Ministry of Environment - CMR risk	Ministry of Environment - Critically Controlled Substance
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Sodium hydroxide	1310-73-2	> 5% (CCA)	Not applicable	Not applicable

#### CCA = Chemical Control Act

Component	CAS No	ISHA - Harmful Agents Subject to Work Environment Monitoring	ISHA - Prohibited substances	ISHA - Substances requiring permission
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Sodium hydroxide	1310-73-2	Listed	Not applicable	Not applicable

#### Sodium hydroxide, 0.5N Standardized Solution

Component	CAS No	ISHA - Substances subject to control	ISHA - Harmful Agents Requiring Health Examination	ISHA - Permissible Exposure Limits
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Sodium hydroxide	1310-73-2	Listed	Not applicable	Not applicable

Γ	Component	CAS No	ISHA - Subject to	ISHA - Threshold Limit	ISHA - Special
			Process Safety Reports	Values (TLVs) Chemicals	management materials
1			(minimum quantity)		
	Water	7732-18-5	Not applicable	Not applicable	Not applicable
Γ	Sodium hydroxide	1310-73-2	Not applicable	Ceiling: 2 mg/m <sup>3</sup>	Not applicable

#### National Fire Association - Dangerous Substances Minimum quantity requiring a permit

Component	CAS No	Class 1 - Oxidising solids	Class 2 - Flammable solid	Class 3 - Spontaneously Combustible Substances and Dangerous Substances When Wet	Class 4 - Flammable liquids	Class 5 - Self-reactive substances	Class 6 - Oxidising liquids
Water	7732-18-5	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Sodium hydroxide	1310-73-2	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

#### **Control Parameters**

Component	CAS No	Korea	ACGIH - Biological Exposure Indices	
Water	7732-18-5	Not listed	Not listed	
Sodium hydroxide	1310-73-2	Ceiling: 2 mg/m <sup>3</sup>	Not listed	

### **US Management Information**

**OSHA** - Occupational Safety and Health Administration

Not applicable

Component	CAS No	Specifically Regulated Chemicals	Highly Hazardous Chemicals	
Water	7732-18-5	Not applicable	Not applicable	
Sodium hydroxide	1310-73-2	Not applicable	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	CAS No	CERCLA Extremely Hazardous Substances RQs	Hazardous Substances RQs	SARA 313 - Threshold Values %
Water	7732-18-5	Not applicable	Not applicable	Not applicable
Sodium hydroxide	1310-73-2	Not applicable	1000 lb	Not applicable

# GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Danger.

H290 - May be corrosive to metals. H314 - Causes severe skin burns and eye damage.

P280 - Wear protective gloves/protective clothing/eye protection/face protection. P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P302 + P352 - IF ON SKIN: Wash with plenty of soap and water. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 - Immediately call a POISON CENTER or doctor/physician. P390 - Absorb spillage to prevent material damage.

# **SECTION 16: OTHER INFORMATION**

#### Legend

**CAS** - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b)

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances IECSC - Chinese Inventory of Existing Chemical Substances

**ENCS** - Japanese Existing and New Chemical Substances AICS - Australian Inventory of Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

TWA - Time Weighted Average IARC - International Agency for Research on Cancer

RPE - Respiratory Protective Equipment LC50 - Lethal Concentration 50%

LD50 - Lethal Dose 50%

POW - Partition coefficient Octanol:Water

EC50 - Effective Concentration 50%

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

Dangerous Goods Code

MARPOL - International Convention for the Prevention of Pollution from Ships

**OECD** - Organisation for Economic Co-operation and Development

ATE - Acute Toxicity Estimate VOC - (Volatile Organic Compound)

**BCF** - Bioconcentration factor

## Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

## **Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

**Prepared By** Health, Safety and Environmental Department

**Creation Date** 21-May-2012 **Revision Date** 12-Jun-2024

**Revision Number** 2

**Revision Summary** New emergency telephone response service provider.

# MOEL's Public Notice No. 2023-9 (Standards for Classification and Labeling of Chemical **Substances and Safety Data Sheets)**

#### 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 Safety Data Sheet**

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