

## 1N-Sodium Hydroxide

### Section 1 - Chemical Product and Company Identification

Product name: 1N-Sodium Hydroxide

Recommended use : Laboratory chemicals, Testing, Research and Industrial use

Restriction of use : Not for use other than for non-drinking, testing, research and industrial purposes

Company Identification

Company : OCI Company Ltd.

Address : 94, Sogong-ro, Jung-gu, Seoul, KOREA

Tel No. : 82 - 2 - 727 - 9494

### Section 2 - Hazards Identification

1) Hazard Classification      Skin corrosion/Skin irritation : 1  
Acute toxicity (Skinl) : 4

2) Warning signal  
Symbol



Signal word                      Danger

Hazard statement              H290 May be corrosive to metals  
H312 Harmful in contact with skin  
H314 Causes severe skin burns and eye damage

Prevention precautionary statements

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

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

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): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

P308+P311 IF exposed: Call a POISON CENTER or doctor/physician

- P310 Immediately call a POISON CENTER or doctor/physician.  
P321 Specific treatment  
P363 Wash contaminated clothing before reuse.  
P405 Store locked up.  
P501 Dispose of contents/container to the related laws.

3) NFPA

Health Rating	3
Flammability Rating	0
Reactivity Rating	1

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### Section 3 - Composition, Information on Ingredients

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Component: Sodium Hydroxide

CAS No.: 1310-73-2

Content: 3~4%

Component: Water

CAS No.: 7732-18-5

Content: 96~97%

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### Section 4 - First Aid Measures

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**General information:** Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

**Ingestion:** Call a physician or poison control center immediately. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Inhalation:** Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Call a physician or poison control center immediately.

**Skin Contact:** Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

**Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately.

**Most important symptoms/effects, acute and delayed Symptoms:** Corrosive to skin and eyes. Respiratory tract irritation.

**Indication of immediate medical attention and special treatment needed Treatment:** Treat symptomatically. Symptoms may be delayed.

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### Section 5 - Fire Fighting Measures

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**General Fire Hazards:** Product is highly caustic. Wear protective gear if spilled during fire fighting.

**Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media:** The product is non-combustible. Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media:** None known.

**Specific hazards arising from the chemical:** Product is highly caustic. Wear appropriate protective gear if spilled during firefighting. Contact with metals may evolve flammable hydrogen gas.

**Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

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**Section 6 - Accidental Release Measures**

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**Personal precautions, protective equipment and emergency procedures:** Put on protective equipment before entering danger area. See Section 8 of the SDS for Personal Protective Equipment. Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Methods and material for containment and cleaning up:** Neutralize spill area and washings with dilute acetic acid. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Collect in a non-combustible container for prompt disposal. Dike far ahead of larger spill for later recovery and disposal.

**Notification Procedures:** Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk.

**Environmental Precautions:** Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

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**Section 7 - Handling and Storage**

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**Precautions for safe handling:** Use personal protective equipment as required. Avoid breathing mists or vapors. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Wash hands thoroughly after handling. Do not eat, drink or smoke when using the product. See Section 8 of the SDS for Personal Protective Equipment.

**Conditions for safe storage, including any incompatibilities:** Do not store in metal containers. Keep container tightly closed. Store in a well-ventilated place. Store in a dry place.

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**Section 8 - Exposure Controls, Personal Protection**

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**Control Parameters**

**Occupational Exposure Limits**

Chemical Identity	type	Exposure Limit Values	Source
SODIUM HYDROXIDE	Ceiling	2 mg/m <sup>3</sup>	US. ACGIH Threshold Limit Values (2011)
	Ceil_Time	2 mg/m <sup>3</sup>	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	2 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	Ceiling	2 mg/m <sup>3</sup>	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

**Appropriate Engineering Controls** No data available.

**Individual protection measures, such as personal protective equipment**

**General information:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Eye/face protection:** Wear safety glasses with side shields (or goggles) and a face shield.

#### **Skin Protection**

**Hand Protection:** Chemical resistant gloves

**Other:** Wear suitable protective clothing.

**Respiratory Protection:** In case of inadequate ventilation use suitable respirator.

**Hygiene measures:** Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

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### **Section 9 - Physical and Chemical Properties**

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#### Appearance

Physical state: Liquid

Color: Colorless

Odor: Odorless

Odor threshold: Not applicable

pH: >14

Melting point/freezing point: -4°C

Initial boiling point and boiling range: > 100°C

Flash Point: Not applicable

Evaporation rate: No data available.

Flammability (solid, gas): Not applicable

Upper/lower limit on flammability or explosive limits : Not applicable

Vapor pressure: 1 mmHg (739°C)

Vapor density: No data available.

Relative density: 1.04

#### Solubility(ies)

Solubility in water: Soluble in water

Solubility (other): No data available.

Partition coefficient (n-octanol/water): -3.88 (c.c)

Auto-ignition temperature: Not applicable

Decomposition temperature: No data available.

Viscosity: No data available.

Molecular Formula: NaOH

Molecular weight: 40.00

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### **Section 10 - Stability and Reactivity**

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**Reactivity:** Reacts violently with strong acids.

**Chemical Stability:** Material is stable under normal conditions.

**Possibility of hazardous reactions:** Hazardous polymerization does not occur.

**Conditions to avoid:** Avoid contact with oxidizing agents. Reacts violently with strong acids.

**Incompatible Materials:** Oxidizing agents. Acids. Maleic Anhydride Halogens. Nitromethane. Contact with metals may evolve flammable hydrogen gas.

**Hazardous Decomposition Products:** Sodium oxides

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## Section 11 - Toxicological Information

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### Information on likely routes of exposure

**Ingestion:** May cause burns of the gastrointestinal tract if swallowed.

**Inhalation:** May cause damage to mucous membranes in nose, throat, lungs and bronchial system.

**Skin contact:** Causes severe skin burns.

**Eye contact:** Causes serious eye damage.

### Information on toxicological effects

#### Acute toxicity (list all possible routes of exposure)

**Oral:** LD 50 (Rat): ATEmix LD50 8130mg/kg Rat

**Dermal:** LD 50 (Rabbit): ATEmix LD50 33333mg/kg Rabbit

**Inhalation:** No data available.

**Repeated dose toxicity:** No data available.

**Skin corrosion/irritation:** Causes severe skin burns.

**Serious eye damage/eye irritation:** Causes serious eye damage.

**Respiratory or skin sensitization:** Not a skin sensitizer.

**Carcinogenicity:** This substance has no evidence of carcinogenic properties.

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:** No carcinogenic components identified

**US. National Toxicology Program (NTP) Report on Carcinogens:** No carcinogenic components identified

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):** No carcinogenic components identified

### Germ cell mutagenicity

**In vitro:** No mutagenic components identified

**In vivo:** No data available.

**Reproductive toxicity:** No components toxic to reproduction

**Specific target organ toxicity - single exposure:** Respiratory tract irritation.

**Specific target organ toxicity - repeated exposure:** None known.

**Aspiration hazard:** Not classified

**Other effects:** None known.

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## Section 12 - Ecological Information

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### Ecotoxicity:

#### Acute hazards to the aquatic environment:

**Fish Product:** LC50 45.4 mg/ℓ 96 hr (SODIUM HYDROXIDE)

**Crustacean Product:** LC50 40.4 mg/ℓ 48 hr (SODIUM HYDROXIDE)

#### Chronic hazards to the aquatic environment:

**Fish Product:** No data available.

**Aquatic Invertebrates Product:** No data available.

**Toxicity to Aquatic Plants Product:** No data available.

### Persistence and Degradability

**Biodegradation Product:** Expected to be readily biodegradable.

**BOD/COD Ratio Product:** No data available.

#### **Bioaccumulative Potential**

**Bioconcentration Factor (BCF) Product:** BCF -3.88 (SODIUM HYDROXIDE, estimated)

**Partition Coefficient n-octanol / water (log Kow) Product:** log Kow-3.88 (SODIUM HYDROXIDE, estimated)

**Mobility in Soil:** The product is water soluble and may spread in water systems.

**Other Adverse Effects:** Harmful to aquatic organisms. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

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### **Section 13 - Disposal Considerations**

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**Disposal instructions:** Discharge, treatment, or disposal may be subject to national, state, or local laws.

**Contaminated Packaging:** Since emptied containers retain product residue, follow label warnings even after container is emptied.

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### **Section 14 - Transport Information**

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UN/NA: UN1824

Proper Shipping Name: SODIUM HYDROXIDE SOLUTION

Hazard Class: 8

Packing Group: II

Marine Pollutant: No data available

Safety measures : Fire F-A, Flow out S-B

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### **Section 15 - Regulatory Information**

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#### **US Federal Regulations**

##### **TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

###### **US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

None present or none present in regulated quantities.

###### **CERCLA Hazardous Substance List (40 CFR 302.4):**

Chemical Identity	Reportable quantity
SODIUM HYDROXIDE	1000 lbs.

###### **Superfund Amendments and Reauthorization Act of 1986 (SARA)**

###### **Hazard categories**

Acute (Immediate)

###### **SARA 302 Extremely Hazardous Substance**

None present or none present in regulated quantities.

###### **SARA 304 Emergency Release Notification**

Chemical Identity	Reportable quantity
SODIUM HYDROXIDE	1000 lbs.

###### **SARA 311/312 Hazardous Chemical**

Chemical Identity	Threshold Planning Quantity
SODIUM HYDROXIDE	10000 lbs

###### **SARA 313 (TRI Reporting)**

None present or none present in regulated quantities.

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)**

Chemical Identity                      Reportable quantity  
SODIUM HYDROXIDE                      1000 lbs.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**

None present or none present in regulated quantities.

**US State Regulations****US. California Proposition 65**

No ingredient regulated by CA Prop 65 present.

**US. New Jersey Worker and Community Right-to-Know Act**

Chemical Identity      SODIUM HYDROXIDE

**US. Massachusetts RTK - Substance List**

Chemical Identity      SODIUM HYDROXIDE

**US. Pennsylvania RTK - Hazardous Substances**

Chemical Identity      SODIUM HYDROXIDE

**US. Rhode Island RTK**

Chemical Identity      SODIUM HYDROXIDE

**Inventory Status:**

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EU EINECS List:	On or in compliance with the inventory
EU ELINCS List:	Not in compliance with the inventory.
Japan (ENCS) List:	On or in compliance with the inventory
EU No Longer Polymers List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Switzerland Consolidated Inventory:	Not in compliance with the inventory.
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

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**Section 16 - Other Information**

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Sources : KOSHA, National Emergency Management Agency

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