



OCI Company Ltd.

Material Safety Data Sheet

*MSDS*

## 6N-Hydrochloric acid

### Section 1 - Chemical Product and Company Identification

TRADE NAMES : 6N-Hydrochloric acid

Recommended use : Not available

Restriction of use : Not available

Company Identification

Company : OCI Company Ltd.

Address : 230, Dokbae-ro, Nam-gu, Incheon, KOREA

Tel No. : 82 - 32 - 860 - 6114

### Section 2 - Hazards Identification

- 1) Hazard Classification
- Acute hazard (Oral) : 4
  - Skin corrosion/irritation : 1
  - Serious eye damage / Eye irritation : 1
  - Respiratory sensitization: 1
  - Specific target organ toxicity following single exposure : 1
  - Specific target organ toxicity following repeated exposure : 1

2) Warning signal

Symbol



Signal word

Danger

Hazard statement

H302 Harmful if swallowed

H314 Causes severe skin burns and eye damage

H318 Causes serious eye damage

H330 Fatal if inhaled

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

H370 Causes damage to organs

H372 Causes damage to organs through prolonged or repeated exposure

Prevention precautionary statements

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

P261 Pressurized container: Do not pierce or burn, even after use.

P264 Wash thoroughly after handling.

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

P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P284 Wear respiratory protection.  
P285 In case of inadequate ventilation wear respiratory protection.  
P301+P312. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
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.  
P304+P341 IF INHALED: If breathing is difficult, 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.  
P307+P311 IF exposed: Call a POISON CENTER or doctor/physician  
P310 Immediately call a POISON CENTER or doctor/physician.  
P314 Get medical advice/attention if you feel unwell  
P320 Specific treatment is urgent (see ... on this label).  
P321 Specific treatment (see ... on this label).  
P330 Rinse mouth  
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.  
P363 Wash contaminated clothing before reuse.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.  
P410+P403 Protect from sunlight. Store in a well-ventilated place.  
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: Hydrochloric acid  
CAS No.: 7647-01-0  
PERCENTAGE: 15 - 20

COMPONENT: Water  
CAS No.: 7732-18-5  
PERCENTAGE: 80 - 85

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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 without advice from poison control center. Never give liquid to an unconscious person. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

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

**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. In case of irritation from airborne exposure, move to fresh air. Get medical attention immediately.

**Most important symptoms/effects, acute and delayed Symptoms:** Causes severe skin and eye burns. Causes digestive tract burns.

**Indication of immediate medical attention and special treatment needed Treatment:** Treat symptomatically.

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## Section 5 - Fire Fighting Measures

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**General fire hazards:** The product is non-combustible. Product is highly acidic.

### **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:** Fire may produce irritating, corrosive and/or toxic gases. Product is acidic. Wear appropriate protective gear if spilled during fire fighting.

### **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. Cool containers exposed to flames with water until well after the fire is out.

**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:** Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment. 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 soda ash or lime. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. 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. Inform authorities if large amounts are involved.

**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:** Avoid inhalation of vapors and spray mists. Do not get in eyes, on skin, on clothing. Use only with adequate ventilation. Wash hands thoroughly after handling. Do not eat, drink or smoke when using the product. Never add water to acid! Use caution when adding this material to water. Always add acid to water while stirring to prevent release of heat, steam and fumes.

**Conditions for safe storage, including any incompatibilities:** Do not store in metal containers. Keep container tightly closed in a cool, 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
HYDROCHLORIC ACID	Ceiling	2 ppm		US. ACGIH Threshold Limit Values (2011)
	Ceil_Time	5 ppm	7 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	Ceiling	5 ppm	7 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	Ceiling	5 ppm	7 mg/m3	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. An eye wash and safety shower must be available in the immediate work area.

**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 and gloves.

**Respiratory protection:** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Chemical respirator with acid gas cartridge.

**Hygiene measures:** Provide eyewash station and safety shower. Observe good industrial hygiene practices. Wash contaminated clothing before reuse. Wash hands before breaks and immediately after handling the product. Avoid contact with eyes, skin, and clothing.

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## Section 9 - Physical and Chemical Properties

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Physical State: Liquid

Appearance: Colorless

Odor: Odorless

pH: Not available

Vapor Pressure: Not available

Vapor Density: Not available

Evaporation Rate: Not available

Viscosity: Not available

Boiling Point: Not available

Freezing/Melting Point: Not available

Decomposition Temperature: Not available

Solubility: Not available

Specific Gravity/Density: Not available

Molecular Formula: HCl

Molecular Weight: Not available

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## Section 10 - Stability and Reactivity

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**Reactivity:** Reacts violently with strong alkaline substances.

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

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

**Conditions to avoid:** Contact with incompatible materials.

**Incompatible materials:** Strong bases. Alkalies. Amines. Metals. Oxidizing agents. Reducing agents.

**Hazardous decomposition products:** Chlorine. Hydrogen Chloride. May decompose upon heating to produce corrosive and/or toxic fumes.

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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 Product:** No data available.

Specified substance(s):

HYDROCHLORIC ACID                      LD 50 (Rat): 581 mg/kg

**Dermal Product:** No data available.

**Inhalation Product:** No data available.

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

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

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

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

**Carcinogenicity Product:** 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 Product:** No mutagenic components identified

**In vivo Product:** No mutagenic components identified

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

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

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

**Aspiration hazard Product:** 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:** No data available.

#### Specified substance(s):

HYDROCHLORIC ACID LC 50 (Western mosquitofish (*Gambusia affinis*), 96 h): 282 mg/l Mortality

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

#### Specified substance(s):

HYDROCHLORIC ACID LC 50 (Green or European shore crab (*Carcinus maenas*), 48 h): 240 mg/l Mortality

LC 50 (Common shrimp, sand shrimp (*Crangon crangon*), 48 h): 260 mg/l Mortality

#### 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:** No data available on bioaccumulation.

**Partition coefficient n-octanol / water (log Kow) Product:** No data available.

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

**Other adverse effects:** 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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Proper Shipping Name: Hydrochloric acid

Hazard Class: 8

UN/NA: UN1789

Packing Group: II

EmS No.:F-A, S-B

Marine Pollutant : No

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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):

HYDROCHLORIC ACID Reportable quantity: 5000 lbs.

#### Superfund amendments and reauthorization act of 1986 (SARA)

##### Hazard categories

X Acute (Immediate) Chronic (Delayed) Fire Reactive Pressure Generating

#### SARA 302 Extremely hazardous substance

Chemical identity	RQ	Threshold Planning Quantity
HYDROCHLORIC ACID	5000 lbs.	500 lbs.

#### SARA 304 Emergency release notification

Chemical identity	RQ
HYDROCHLORIC ACID	5000 lbs.

#### SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
HYDROCHLORIC ACID	500lbs

#### SARA 313 (TRI reporting)

Chemical identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
HYDROCHLORIC ACID	10000 lbs	25000 lbs.

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

HYDROCHLORIC ACID Reportable quantity: 5000 lbs.

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

HYDROCHLORIC ACID Threshold quantity: 15000 lbs

HYDROCHLORIC ACID Threshold quantity: 5000 lbs

### 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

HYDROCHLORIC ACID Listed

#### US. Massachusetts RTK - Substance List

HYDROCHLORIC ACID Listed

#### US. Pennsylvania RTK - Hazardous Substances

HYDROCHLORIC ACID Listed

#### US. Rhode Island RTK

HYDROCHLORIC ACID Listed

### 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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