



OCI Company Ltd.

MSDS

Hydrochloric acid 25%

Section 1 - Chemical Product and Company Identification

TRADE NAMES : Hydrochloric acid 25%

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
 - Acute hazard (Inhale) : 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
 - Acute hazard to the aquatic environment : 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
 H332 Harmful 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
 H400 Very toxic to aquatic life

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.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 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.
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 or concerned: Call a POISON CENTER /doctor
P310 Immediately call a POISON CENTER or doctor/physician.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P314 Get medical advice/attention if you feel unwell
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.
P391 Collect spillage.
P405 Store locked up.
P501 Dispose of contents/container to the related laws.

3) NFPA

Health Rating	3
Flammability Rating	0
Reactivity Rating	1

Section 3 - Composition, Information on Ingredients

COMPONENT: Hydrochloric acid
CAS No.: 7647-01-0
PERCENTAGE: 24~26%

COMPONENT: Water
CAS No.: 7732-18-5
PERCENTAGE: 74~76%

Section 4 - First Aid Measures

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. 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. Apply artificial respiration if victim is not breathing. If breathing is difficult, give oxygen.

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. Harmful if swallowed.

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

Section 5 - Fire Fighting Measures

General Fire Hazards: No unusual fire or explosion hazards noted.

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 or excessive heat may produce hazardous decomposition products.

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.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Ventilate closed spaces before entering them. Keep unauthorized personnel away. Evacuate area. Keep upwind. See Section 8 of the SDS 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 with lime or soda ash. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures: 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.

Section 7 - Handling and Storage

Precautions for safe handling: Do not eat, drink or smoke when using the product. Do not get in eyes, on skin, on clothing. Wash hands thoroughly after handling. Do not breathe dust/fume/gas/mist/vapors/spray. Use caution when adding this material to water.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed. Store in a well-ventilated place. Unsuitable containers: metals.

Section 8 - Exposure Controls, Personal Protection

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)
	Ceiling	2 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (01 2015)
	TWA PEL	0.3 ppm 0.45mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (01 2015)

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. Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Hygiene measures: Provide eyewash station and safety shower. Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Do not get in eyes. Wash contaminated clothing before reuse. Do not get this material in contact with skin.

Section 9 - Physical and Chemical Properties

Appearance

Physical state: Liquid

Form: Liquid

Color: Clear colorless

Odor: Pungent

Odor threshold: No data available.

pH: No data available.

Melting point/freezing point: No data available.

Initial boiling point and boiling range: No data available.

Flash Point: : Not applicable

Evaporation rate: No data available.

Flammability (solid, gas): Not applicable

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%): No data available.

Flammability limit - lower (%): No data available.

Explosive limit - upper (%): No data available.

Explosive limit - lower (%): No data available.

Vapor pressure: No data available.

Vapor density: No data available.

Relative density: 1.12

Solubility(ies) : Soluble

Partition coefficient (n-octanol/water): No data available.

Auto-ignition temperature: No data available.

Decomposition temperature: No data available.

Viscosity: No data available.

Molecular Formula: HCl

Molecular weight: 36.46

Section 10 - Stability and Reactivity

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: Avoid contact with strong reducing agents. Strong oxidizing agents. Contact with alkalis.

Incompatible Materials: Acids. Amines. Alkalies. Metals. Reducing agents. Oxidizing agents.

Hazardous Decomposition Products: Chlorine. hydrogen chloride By heating and fire, corrosive vapors/gases may be formed.

Section 11 - Toxicological Information

Information on likely routes of exposure

Ingestion: Harmful if swallowed.

Inhalation: Causes severe burns.

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: ATEmix (Rat): 581 mg/kg

Dermal Product: No data available.

Specified substance(s):

HYDROCHLORIC ACID LD 50 (Mouse): 1,449 mg/kg

Inhalation Product: No data available.

Specified substance(s):

HYDROCHLORIC ACID LC 50 (Mouse, 1 h): 1108 ppm

LC 50 (Rat, 1 h): 3124 ppm

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.

Section 12 - Ecological Information

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: Large amounts of the product may affect the acidity (pH-factor) in water with possible risk of harmful effects to aquatic organisms.

Section 13 - Disposal Considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws. Since emptied containers retain product residue, follow label warnings even after container is emptied.

Contaminated Packaging: No data available.

Section 14 - Transport Information

Proper Shipping Name: Hydrochloric acid

Hazard Class: 8

UN/NA: UN1789

Packing Group: II

EmS No.:F-A, S-B

Marine Pollutant : No

Section 15 - Regulatory Information

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
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HYDROCHLORIC ACID	5000 lbs.	500 lbs.
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SARA 304 Emergency Release Notification

Chemical Identity	RQ
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HYDROCHLORIC ACID	5000 lbs.
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SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
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HYDROCHLORIC ACID	500lbs
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SARA 313 (TRI Reporting)

Chemical Identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
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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.

Section 16 - Other Information

Sources : KOSHA, National Emergency Management Agency

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