

Hydrochloric Acid

SECTION 1. IDENTIFICATION

Product Identifier	Hydrochloric Acid
Other Means of Identification	Hydrogen Chloride, Muriatic Acid, HCL
Product Code(s)	HY2210, HY2220, HY2225
Product Family	Inorganic
Recommended Use	Laboratory and industrial use.
Restrictions on Use	None known.
Supplier Identifier	Alphachem Limited, 2485 Milltower Court, Mississauga, Ontario, L5N 5Z6, (905) 821-2995
Emergency Phone No.	CANUTEC CANADA, 613-996-6666, 24 Hours
SDS No.	0025

SECTION 2. HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).

Classification

Corrosive to metals - Category 1; Skin corrosion - Category 1; Serious eye damage - Category 1; Specific target organ toxicity (single exposure) - Category 3

Label Elements



Signal Word:
Danger

Hazard Statement(s):

May be corrosive to metals.
Causes severe skin burns and eye damage.
May cause respiratory irritation.

Precautionary Statement(s):

Avoid breathing dust/fume/gas/mist/vapours/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF ON SKIN: Wash with plenty of water/
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards

Product Identifier: Hydrochloric Acid
Date of Preparation: July 13, 2015

Hazardous to the environment.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers
Water	7732-18-5	60 - 70	Dihydrogen Oxide
Hydrochloric acid	7647-01-0	30 - 40	Hydrogen Chloride, Muriatic Acid, HCL

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. DO NOT move about unnecessarily. Symptoms of pulmonary edema may be delayed.

Skin Contact

Immediately rinse skin with lukewarm, gently flowing water for at least 30 minutes. DO NOT INTERRUPT FLUSHING. If it can be done safely, continue flushing during transport to hospital.

Eye Contact

Avoid direct contact. Wear chemical protective gloves if necessary. Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes, while holding the eyelid(s) open. Transport to emergency facility.

Ingestion

Rinse mouth with water. Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. If vomiting occurs naturally, lie on your side in the recovery position. Rinse mouth with water again.

First-aid Comments

Some of the first-aid procedures recommended here require advanced first-aid training.

Most Important Symptoms and Effects, Acute and Delayed

Can cause severe irritation of the nose and throat. Can cause severe lung injury. Can harm the nervous system. Symptoms may include headache, nausea, dizziness, drowsiness and confusion. Can harm the kidneys. Can harm the liver. Repeated or prolonged exposure can irritate or burn the skin.

Immediate Medical Attention and Special Treatment

Target Organs

Respiratory system, liver, kidneys.

Special Instructions

Monitor lung function. Monitor kidney function.

Medical Conditions Aggravated by Exposure

Kidney conditions, liver conditions, respiratory conditions.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media

No information available.

Specific Hazards Arising from the Product

Product Identifier: Hydrochloric Acid

Date of Preparation: July 13, 2015

Page 02 of 07

Heating increases the release of toxic vapour.
Corrosive hydrogen chloride.

Special Protective Equipment and Precautions for Fire-fighters

Evacuate area. Fight fire from a safe distance or a protected location. Approach fire from upwind to avoid hazardous vapours or gases. Knock down vapours or gases with water fog or fine water spray. Before entry, especially into confined areas, use an appropriate monitor to check for: toxic gases or vapours.

A full-body encapsulating chemical protective suit with positive pressure SCBA may be necessary. Fire-fighters should enter area wearing specialized protective equipment. (Bunker Gear will not provide adequate protection.).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Increase ventilation to area or move leaking container to a well-ventilated and secure area.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

Methods and Materials for Containment and Cleaning Up

Knock down vapour with fog or fine water spray. Small spills or leaks: contain and soak up spill with absorbent that does not react with spilled product. Place used absorbent into suitable, covered, labelled containers for disposal. Contaminated absorbent poses the same hazard as the spilled product. Large spills or leaks: contact emergency services and manufacturer/supplier for advice.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Wear personal protective equipment to avoid direct contact with this chemical. Avoid breathing in this product. Do not get in eyes, on skin or on clothing. Prevent uncontrolled release of product. Immediately report leaks, spills or failures of the safety equipment (e.g. ventilation system). Prevent accidental contact with incompatible chemicals.

Conditions for Safe Storage

Store in an area that is: cool, dry, well-ventilated, separate from incompatible materials (see Section 10: Stability and Reactivity). Have escape-type respiratory protective equipment readily available, in case of leaks or spills. Keep amount in storage to a minimum. Vent drums to prevent pressure buildup. Comply with all applicable health and safety regulations, fire and building codes.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Water	Not established		Not established			
Hydrochloric acid		2 ppm A4		5 ppm		

Exposure guidelines (both ACGIH and OSHA) for water not established.

Appropriate Engineering Controls

Use local exhaust ventilation and enclosure, if necessary, to control amount in the air. Provide eyewash in work area, if contact or splash hazard exists.

Individual Protection Measures

Eye/Face Protection

Wear chemical safety goggles and face shield when contact is possible.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

Product Identifier: Hydrochloric Acid

Date of Preparation: July 13, 2015

Page 03 of 07

Suitable materials are: butyl rubber, natural rubber, neoprene rubber, nitrile rubber, Viton®, Viton®/butyl rubber, Barrier® (PE/PA/PE), Trelchem® HPS, Trelchem® VPS, Tychem® SL (Saranex™), Tychem® BR/LV, Tychem® Responder.

The following materials should NOT be used: polyvinyl alcohol.

Respiratory Protection

Wear a full facepiece NIOSH approved air-purifying respirator with an acid gas cartridge, wear a NIOSH approved air-purifying respirator with an appropriate cartridge, wear a NIOSH approved self-contained breathing apparatus (SCBA) or supplied air respirator.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Colourless.
Odour	Pungent
Odour Threshold	Not available
pH	< 1
Melting Point/Freezing Point	-46.2 - -25.4 °C (-51.2 - -13.7 °F) (melting); Not available (freezing)
Initial Boiling Point/Range	50.5 - 83.0 °C (122.9 - 181.4 °F)
Flash Point	Not applicable
Evaporation Rate	Not available
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	Not applicable (upper); Not applicable (lower)
Vapour Pressure	~ 16 kPa at 20 °C
Vapour Density (air = 1)	1.3
Relative Density (water = 1)	1.15 - 1.19
Solubility	Soluble in water; Highly soluble in alcohols (e.g. ethanol).
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	Not applicable
Decomposition Temperature	Not available
Viscosity	Not available (kinematic); Not available (dynamic)
Other Information	
Physical State	Liquid

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

Conditions to Avoid

High temperatures.

Incompatible Materials

Metals (e.g. aluminum), strong bases (e.g. sodium hydroxide), aldehydes (e.g. acetaldehyde), strong oxidizing agents (e.g. perchloric acid), strong reducing agents (e.g. hydrides), strong acids (e.g. hydrochloric acid).

Corrosive to: carbon steel, stainless steel, aluminum alloys, cast iron, zinc, nickel alloys (e.g. Monel, Hastelloy), copper, copper alloys (e.g. brass and/or bronze), titanium.

Hazardous Decomposition Products

Product Identifier: Hydrochloric Acid

Date of Preparation: July 13, 2015

Page 04 of 07

None known.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Water	Not available	> 89840 mg/kg (rat)	Not available
Hydrochloric acid	1405 ppm (male rat) (4-hour exposure)	700 mg/kg (rat)	> 5010 mg/kg (rabbit)

Skin Corrosion/Irritation

Human experience shows skin corrosion.

Serious Eye Damage/Irritation

Causes serious eye damage based on skin corrosion information.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

Causes severe nose and throat irritation, severe lung injury. Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest.

Skin Absorption

No information was located.

Ingestion

Severe irritation or burns to the mouth, throat and stomach. In severe cases, symptoms may include fatigue, weakness, fever, abdominal swelling or pain, yellowish eyes and skin, nausea and vomiting.

Aspiration Hazard

No information was located.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

May cause irritation of the respiratory system. May cause respiratory tract injury, harmful effects on the kidneys, harmful effects on the liver.

Respiratory and/or Skin Sensitization

No information was located.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Water	Not Listed	Not Listed	Not Listed	Not Listed
Hydrochloric acid	Group 3	A4	Not Listed	

Key to Abbreviations

IARC = International Agency for Research on Cancer.

Group 3 = Not classifiable as to its carcinogenicity to humans.

ACGIH® = American Conference of Governmental Industrial Hygienists.

A4 = Not classifiable as a human carcinogen.

Reproductive Toxicity

Development of Offspring

Animal studies show effects on the offspring.

Sexual Function and Fertility

No information was located.

Effects on or via Lactation

No information was located.

Product Identifier: Hydrochloric Acid

Date of Preparation: July 13, 2015

Germ Cell Mutagenicity

No information was located.

Interactive Effects

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

This section is not required by WHMIS. This section is not required by OSHA HCS 2012.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal Methods**

Contact local environmental authorities for approved disposal or recycling methods in your jurisdiction. Dispose of or recycle empty containers through an approved waste management facility.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
US DOT	UN1789	Hydrochloric Acid	8	II
Canadian TDG	UN1789	Hydrochloric Acid	8	II

Environmental Hazards Not applicable

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION**Safety, Health and Environmental Regulations****Canada**

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

Listed on the DSL.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

Listed on the TSCA Inventory.

SECTION 16. OTHER INFORMATION

SDS Prepared By Alphachem Limited

Phone No. (905)-821-2995

Date of Preparation July 13, 2015

Date of Last Revision March 16, 2016

References CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). ScienceLab.com database.

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Product Identifier: Hydrochloric Acid

Date of Preparation: July 13, 2015

Page 06 of 07

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Product Identifier: Hydrochloric Acid

Date of Preparation: July 13, 2015

Page 07 of 07

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