

## Safety Data Sheet

### Hydrochloric Acid

#### 1. IDENTIFICATION

**Product Identifier:** Hydrochloric Acid  
**Canadian TDG:** UN1789  
**Synonyms:** Muriatic acid, Chlorohydric acid, Hydrogen Chloride  
**Chemical Family:** Inorganic acid  
**Recommended Use:** Acid etching  
**Restrictions on Use:** None

**Manufacturer / Supplier:**

Genesis Chemicals  
602 – 13<sup>th</sup> St SE  
Medicine Hat, AB  
T1A 1X3

**Prepared by:** The Environmental, Health and Safety Department of Genesis Chemicals Ltd

**Preparation Date of SDS:** February 3, 2017

**Telephone number of preparer:** 403-528-4220

**24-Hour Emergency Telephone Number (CANUTEC):** (613) 996-6666

#### 2. HAZARDS IDENTIFICATION

**GHS Classification**

Skin corrosion – Category 1B; Eye damage – Category 1; Mixture corrosive to metals – Category 1; Hazardous to aquatic environment, acute hazard – Category 2; Hazardous to aquatic environment, long term hazard – Category 3; Specific target organ toxicity, single exposure – Category 2



**Signal Word:** Danger

**Hazard Statement(s):**

Causes severe skin burns and eye damage.  
Causes serious eye damage.  
May be corrosive to metals.  
Toxic to aquatic life.  
Harmful to aquatic life with long lasting effects.  
May cause damage to organs if swallowed.

**Precautionary Statement(s):**

General:

Keep out of reach of children.  
Read label before use.

**Prevention:**

Do not breathe dust, fumes, gas, mist, vapours or spray. Wash hands, face and any exposed skin thoroughly after handling. Wear protective gloves, protective clothing, eye protection and face protection.  
Wash hands, face and any exposed skin thoroughly after handling.  
Wear protective gloves, protective clothing, eye protection and face protection.  
Keep only in original container.  
Avoid release to the environment.

**Response:**

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. IF ON SKIN (or hair): Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.  
IF INHALED: Call a poison center or doctor/physician if you feel unwell. Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.  
Absorb spillage to prevent material damage.  
Avoid release to the environment.

**Storage:**

Store in corrosive resistant container with a resistant inner liner.  
Store in a closed container.

**Disposal:**

Dispose of contents and container in accordance with local, regional, national and international regulations.

**Other Hazards:**

None known.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Hazardous Components**

Chemical Name	CAS No.	Concentration %
Hydrochloric acid	7647-01-0	31-38

**Notes**

\*\*If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.\*\*

### 4. FIRST AID MEASURES

**First-aid Measures**

**General**

Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.

**Inhalation**

Move to fresh air. Keep at rest in a position comfortable for breathing. Call a Poison Centre or doctor immediately.

**Skin Contact**

Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Immediately rinse with lukewarm, gently flowing water for 15-20 minutes. If skin irritation or a rash occurs, get medical advice/attention. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

**Eye Contact**

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Remove contact lenses, if present and easy to do. If eye irritation persists, get medical advice/attention.

**Ingestion**

Immediately call a Poison Centre or doctor. Do not induce vomiting.

**Most Important Symptoms and Effects, Acute and Delayed**

Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

**Immediate Medical Attention and Special Treatment****Special Instructions**

Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

## 5. FIRE-FIGHTING MEASURES

**Extinguishing Media****Suitable Extinguishing Media**

Carbon dioxide, appropriate dry chemical powder or water spray.

**Unsuitable Extinguishing Media**

High volume water jet.

**Specific Hazards Arising from the Chemical**

Releases flammable hydrogen gas when reacting with metals.

**Special Protective Equipment and Precautions for Fire-fighters**

Evacuate area. Approach fire from upwind to avoid hazardous vapours or gases. Stop leak before attempting to put out the fire. Before entry, especially into confined areas, use an appropriate monitor to check for: toxic gases or vapours, flammable or explosive atmosphere. Dike and recover contaminated water for appropriate disposal. Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn. If there is potential for skin contact with concentrated cleaner: chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary. See Skin Protection in Section 8 (Exposure Controls/Personal Protection) for advice on suitable chemical protective materials.

## 6. ACCIDENTAL RELEASE MEASURES

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

Concentrated product: evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Distant ignition and flashback are possible.

Increase ventilation to area or move leaking container to a well-ventilated and secure area. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Use the personal protective equipment recommended in Section 8 of this safety data sheet.

Review Section 7 (Handling) of this safety data sheet before proceeding with clean-up.

Before entry, especially into confined areas, check atmosphere with an appropriate monitor. Monitor area for flammable or explosive atmosphere.

Product (diluted as directed): use the personal protective equipment recommended in Section 8 of this safety data sheet. No other special precautions are necessary.

#### **Environmental Precautions**

Concentrated product: 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**

Concentrated product: small spills or leaks: contain and soak up spill with absorbent that does not react with spilled product. Do NOT use combustible materials such as sawdust. Place used absorbent into suitable, covered, labelled containers for disposal.

Concentrated product: large spills or leaks: cover the spill surface with the appropriate type of foam to reduce the release of vapour. Dike spilled product to prevent runoff. Remove or recover liquid using pumps or vacuum equipment. Dike and recover contaminated water for appropriate disposal. Store recovered product in suitable containers that are: tightly-covered. Call for assistance on disposal.

#### **Other Information**

Report spills to local health, safety and environmental authorities, as required.

## **7. HANDLING AND STORAGE**

#### **Precautions for Safe Handling**

When handling diluted product: no special handling precautions are necessary.

When handling concentrated product: only use where there is adequate ventilation. Avoid generating vapours or mists. Keep containers tightly closed when not in use or empty. Wear personal protective equipment to avoid direct contact with this chemical.

Do NOT smoke in work areas. Wash hands thoroughly after handling this material. Immediately remove contaminated clothing using the method that minimizes exposure. Keep contaminated clothing under water, in closed containers. Launder clothes before rewearing. Inform laundry personnel of product hazard(s). Do not take contaminated clothing home.

#### **Conditions for Safe Storage**

Concentrated product: store in an area that is: temperature-controlled, well-ventilated, out of direct sunlight and separate from incompatible materials (see Section 10: Stability and Reactivity). Store in a closed container. Protect from conditions listed in Conditions to Avoid in Section 10 (Stability and Reactivity). Keep amount in storage to a minimum. Comply with all applicable health and safety regulations, fire and building codes.

#### **Materials to Avoid**

Oxidizing agents.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### **Control Parameters**

#### **Occupational exposure limits**

<b>Chemical Name</b>	<b>ACGIH® TLA®</b>	<b>OSHA PEL (Ceiling)</b>	<b>IDLH</b>
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Hydrochloric acid	5 ppm (7.59 mg/m <sup>3</sup> )	5 ppm (7.59 mg/m <sup>3</sup> )	50 ppm
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### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Appropriate Engineering Controls

General ventilation is usually adequate. Provide eyewash and safety shower if contact or splash hazard exists.

When handling large quantities of concentrated product: use a local exhaust ventilation and enclosure, if necessary, to control amount in the air. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored.

### Individual Protection Measures

#### Eye/Face Protection

Do not get in eyes. Wear chemical eye protection/ face protection.

#### Skin Protection

Prevent all skin contact. Wear chemical protective clothing e.g. gloves, aprons, boots.

Suitable materials are: Barrier® (PE/PA/PE), Silver Shield/4H® (PE/EVAL/PE), Tychem® Responder, Tychem® TK.

The following materials should NOT be used: neoprene rubber, nitrile rubber, polyvinyl alcohol.

#### Respiratory Protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator.

Concentrated product: wear a NIOSH approved air-purifying respirator with an organic vapour cartridge.

For non-routine or emergency situations: wear a NIOSH approved air-purifying respirator with an organic vapour Cartridge, or, wear a NIOSH approved self-contained breathing apparatus (SCBA) or supplied air respirator.

**Other Personal Protection Data:** Ensure that eyewash stations and safety showers are proximal to the work-station location.

## 9. CHEMICAL AND PHYSICAL PROPERTIES

### Basic Physical and Chemical Properties

<b>Appearance</b>	Colourless to light yellow liquid
<b>Odour</b>	Pungent (irritating strong)
<b>Odour Threshold</b>	0.3 ppm (can cause olfactory fatigue)
<b>pH</b>	< 1.0 in aqueous solution
<b>Melting Point/Freezing Point</b>	-30 °C / -22°F
<b>Initial Boiling Point/Range</b>	>100°C / >212°F
<b>Flash Point</b>	Not applicable
<b>Evaporation Rate</b>	No data available
<b>Flammability (solid, gas)</b>	Not applicable (liquid).
<b>Upper/Lower Flammability or Vapour Pressure</b>	Not applicable (upper); Not applicable (lower)
<b>Vapour Pressure</b>	84 mmHg at 20 °C
<b>Vapour Density (air = 1)</b>	1.267 at 20 °C
<b>Relative Density (specific gravity)</b>	1.14-1.20
<b>Solubility</b>	Completely soluble
<b>Partition Coefficient, n-Octanol/Water (Log Kow)</b>	Not available
<b>Auto-ignition Temperature</b>	Not applicable
<b>Decomposition Temperature</b>	Not available
<b>Viscosity</b>	180 mPas (32% HCl solution)
<b>Physical State:</b>	Liquid

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive. Not sensitive to mechanical impact.

### Chemical Stability

Normally stable.

### Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

### Conditions to Avoid

Incompatible materials, metals, excess heat, bases.

### Incompatible Materials

Bases, amines, metals, permanganates, (e.g. potassium permanganate), fluorine, metal acetylides, hexalithium disilicide.

### Hazardous Decomposition Products

Hydrogen chloride, chlorine, hydrogen gas

## 11. TOXICOLOGICAL INFORMATION

### Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

### Information on toxicological effects

#### Acute toxicity

Harmful if swallowed.

#### Skin Corrosion/Irritation

Causes severe skin burns and eye damage.

#### Serious Eye Damage/Irritation

Causes serious eye damage.

#### STOT (Specific Target Organ Toxicity) - Single Exposure

##### Inhalation

May cause respiratory irritation.

#### Aspiration Hazard

No data available.

#### STOT (Specific Target Organ Toxicity) - Repeated Exposure

No data available.

#### Respiratory and/or Skin Sensitization

No data available.

**Carcinogenicity**

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

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

Not listed.

**Reproductive Toxicity****Development of Offspring**

This product is not expected to cause developmental effects.

**Sexual Function and Fertility**

This product is not expected to cause reproductive effects.

**Germ Cell Mutagenicity**

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Interactive Effects**

No information was located.

**Chronic Effects**

Prolonged inhalation may be harmful.

**Additional Information:**

No data.

**Components Species Test Results**

Chemical Name	LC50 (inhalation)	LD50 (dermal)
Hydrochloric acid	3124 mg/kg (rat), 1h	5010 mg/kg (rabbit)

## 12. ECOLOGICAL INFORMATION

**Ecotoxicological Information:**

Chemical Name	Ecotoxicity - Fish Species Data	Acute Crustaceans Toxicity:	Ecotoxicity - Freshwater Algae Data
Hydrochloric acid	LC50 (Mosquito fish) 282 mg/L, 96h 50 (Bluegill) 3.6 mg/L, 48h	Not available	Not available

**Persistence and degradability:**

Not biodegradable. Hydrochloric acid will likely be neutralized to chloride by alkalinity present in natural environment.

**Bioaccumulative Potential:**

No data available.

**Mobility in soil:**

Hydrochloric acid will be neutralized by naturally occurring alkalinity. The acid will permeate soil, dissolving some soil material and will then neutralize.

**Other adverse effects:**

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation).

## 13. DISPOSAL CONSIDERATIONS

**Disposal Methods**

Recommended disposal methods are for the product, as sold. (Used material may contain other hazardous

contaminants). The required hazard evaluation of the waste and compliance with the applicable hazardous waste laws are the responsibility of the user.

Burn in an approved incinerator according to federal, provincial/state, and local regulations.

Empty containers retain product residue. Follow label warnings even if container appears to be empty. The container for this product can present explosion or fire hazards, even when emptied. Do not cut, puncture, or weld on or near this container.

## 14. TRANSPORT INFORMATION

### DOT (U.S.):

**DOT Shipping Name:** HYDROCHLORIC ACID

**DOT Hazardous Class** 8 (2.3)

**DOT UN Number:** UN1789

**DOT Packing Group:** II

**DOT Reportable Quantity (lbs):** Not Available.

**Note:** No additional remark.

**Marine Pollutant:** No.

### TDG (Canada):

**TDG Shipping Name:** HYDROCHLORIC ACID

**Hazard Class:** 8

**UN Number:** UN1789

**Packing Group:** II

**Note:** No additional remark.

**Marine Pollutant:** No

### Special Precautions for User

Not applicable

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

Not applicable

## 15. REGULATORY INFORMATION

### Canada

#### WHMIS Classification

D2A, E

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by the Controlled Products Regulations.

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

All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

**Note:** Not available.

#### CEPA - National Pollutant Release Inventory (NPRI)



## 16. OTHER INFORMATION

- Additional Information:** This product has been classified in accordance with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) and the SDS contains all the information required by the Hazardous Products Regulations (HPR).
- Prepared by:** The Environmental, Health and Safety Department of Genesis Chemicals Ltd
- Telephone No. of Preparer:** 403-528-4220
- Date of Latest Revision:** December 20, 2017
- 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. NTP = National Toxicology Program. OSHA = US Occupational Safety and Health Administration. ACGIH® = American Conference of Governmental Industrial Hygienists. TLV® = Threshold Limit Value. TWA = Time-Weighted Average. STEL = Short-term Exposure Limit. A4 = Not classifiable as a human carcinogen. OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits. IDLH = Immediately Dangerous to Life and Health.
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\*\*\*END OF SDS\*\*\*