

Safety Data Sheet

Section 01 - Product And Company Identification

Product Identifier	Muriatic Acid
Other Means of Identification	Aqueous hydrogen chloride, muriatic acid, hydrogen chloride, HCl, chlorohydric acid.
Product Use and Restrictions on Use	Acidizing (activation) of petroleum wells, scale removal, ore reduction, metals cleaning, pH adjustment, industrial acidizing, generation of chlorine dioxide, regeneration of ion exchange resins.
Initial Supplier Identifier	Rexall Laboratories and Chemicals 445 Eastchester Ave E, Unit 4 St. Catharines, ON L2M 6S2

24-Hour Emergency Phone CANUTEC's 24-hour number (1-888-CAN-UTEC(226-8832) or 613-996-6666)

Section 02 - Hazard Identification

GHS-Classification

Skin Corrosion/Irritation	Category 1B
Serious Eye Damage/Irritation	Category 1
STOT-Single Exposure	Category 3

Physical Hazards

Corrosive to Metals	Category 1
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Danger

Hazards Statements

H314 – Causes severe skin burns and eye damage.
H335 – May cause respiratory irritation.
H290 – May be corrosive to metals.

Pictograms



Precautionary Statements

P234 – Keep only in original container.

P405 – Store locked up.

P403 + P233 – Store in a well-ventilated place. Keep container tightly closed.

P271 – Use only outdoors or in a well-ventilated area.

P260 – Do not breathe mist, vapours, or spray.

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

P280 – Wear protective gloves, protective clothing, eye protection, and face protection.

P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P363 – Wash contaminated clothing before reuse.

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

P301 + P330 + P331 – IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P310 – Immediately call a POISON CENTER or doctor/physician.

P501 – Dispose of contents/container in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 03 - Composition / Information on Ingredients

Chemical Name	CAS Number	Weight %	Unique Identifiers
Hydrochloric Acid	7647-01-0	30%	
Water and/or ingredients not classified as hazardous under the Hazardous Products Regulations		70%	

Section 04 - First Aid Measures

Inhalation	Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek medical attention.
Skin Contact / Absorption	Remove contaminated clothing. Rinse skin with lukewarm, gently flowing water for 30 minutes. Seek immediate medical attention. Completely decontaminate clothing, shoes and leather goods before re-use or discard.
Eye Contact	Immediately flush eye(s) with lukewarm, gently flowing water for 30 minutes while forcibly holding the eyelid(s) open to ensure complete irrigation of the eye tissue. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens until flushing is complete. Neutral saline solution may be given as soon as it is available. Seek immediate medical attention.
Ingestion	NEVER give anything by mouth if victim is rapidly losing consciousness, is unconscious or convulsing. Have victim rinse mouth with water. Do NOT induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Have victim rinse mouth again. Seek immediate medical attention.
Additional Information	This chemical is very toxic. Take proper precautions to ensure your own safety before assisting others. Do not allow victim to move around unnecessarily as symptoms of pulmonary edema may be delayed up to 48 hours. NOTE:Any skin or eye contact will also involve significant inhalation exposure.

Section 05 - Fire Fighting Measures

Suitable Extinguishing Media	Use extinguishing agent suitable for surrounding fire.
Unsuitable Extinguishing Media	Not Available
Specific Hazards Arising From the Chemical	Contact with metals produces flammable hydrogen gas. Hydrogen chloride gas form in a fire or when heated and dissociates into hydrogen gas and chlorine gas. Closed containers may explode when heated.

Special Protective Equipment and Precautions for Fire-Fighters Wear NIOSH-approved self-contained breathing apparatus and protective gear.

Further Information Not Available

Section 06 - Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so. Flush with water to remove any residue.

Environmental Precautions Prevent product from entering sewers, waterways or confined spaces.

Methods and Materials for Containment and Cleaning Up Clean up spill with non-reactive absorbent and place in suitable, labelled containers for proper disposal. Contaminated absorbent may pose the same hazards as the spilled product.

Section 07 - Handling and Storage

Precautions for Safe Handling Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure.

Conditions for Safe Storage Store in a cool, dry, well-ventilated area, out of direct sunlight and away from heat sources. Keep in original container and locked up. Store away from incompatible materials.

Incompatibilities Metals, sodium ,bases, formaldehyde, oxidizing agents, reducing agents, perchloric acid, sulfuric acid, potassium permanganate, aldehydes, epoxides, fluorine, acetylides, carbides, borides, phosphide, silicides, hexalithium disilicide.

Section 08 - Exposure Controls and Personal Protection

Exposure Limit(s)

Component	Regulation	Type of Listing	Value
Hydrochloric Acid	ACGIH	TLV-C	2 ppm
	OSHA	PEL-T-C	5 ppm

Engineering Control(s)

Ventilation Requirements Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions must be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other Emergency shower and eyewash must be available and tested in accordance with regulations and be in close proximity.

Protective Equipment

Eyes/Face Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.

Hand Protection Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Skin and Body Protection Body suits, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Impervious boots of chemically resistant material should be worn at all times. No special footwear is required other than what is mandated at place of work.

Respiratory Protection

NIOSH RECOMMENDATIONS FOR HYDROGEN CHLORIDE CONCENTRATIONS IN AIR:

Up to 50 ppm: Chemical cartridge respirator with cartridge(s) to protect against hydrogen chloride; or gas mask with canister to protect against hydrogen chloride; or powered air-purifying respirator with cartridge(s) to protect against hydrogen chloride; or SAR; or full-facepiece SCBA.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS: Positive pressure, full-facepiece SCBA; or positive pressure, full-facepiece SAR with an auxiliary positive pressure SCBA.

NOTE: The IDLH concentration for hydrogen chloride is 50 ppm.

Thermal Hazards

Not Available

Section 09 - Physical and Chemical Properties

Appearance

Physical State	Liquid
Colour	Colourless or slightly yellow.
Odour	Pungent odour.
Odour Threshold	Detectable at 1-5 ppm.

Property

pH	<1
Melting Point/Freezing Point	-46.2°C (-51.2°F)
Initial Boiling Point and Boiling Range	108.6°C (227.4°F)
Flash Point	Not Applicable
Evaporation Rate	Solution greater than 28% are very volatile and can readily release high concentrations of hydrogen chloride gas.
Flammability	Non-flammable
Upper Flammable Limit	Not Applicable
Lower Flammable Limit	Not Applicable
Vapour Pressure (mm Hg, 20°C)	10.6
Vapour Density (Air=1)	1.3
Relative Density	Not Available
Solubility(ies)	Soluble in water. Soluble in ethanol, methanol, dioxane and tetrahydrofuran; insoluble in hydrocarbons.
Partition Coefficient: n-octanol/water	Log P _{ow} = 0.3

Auto-ignition Temperature	Not Applicable
Decomposition Temperature	Not Available
Viscosity	1.71 mPa·s
Explosive Properties	Decomposes into extremely flammable and potentially explosive hydrogen gas.
Specific Gravity (Water=1)	1.149
% Volatiles by Volume	Not Available
Formula	Mixture
Molecular Weight	36.46

Section 10 - Stability and Reactivity

Reactivity	Not Available
Stability	Stable.
Possibility of Hazardous Reactions	Hazardous polymerization will not occur.
Conditions to Avoid	High temperatures.
Incompatible Materials	Metals, sodium ,bases, formaldehyde, oxidizing agents, reducing agents, perchloric acid, sulfuric acid, potassium permanganate, aldehydes, epoxides, fluorine, acetylides, carbides, borides, phosphide, silicides, hexalithium disilicide.
Hazardous Decomposition Products	None reported.

Section 11 - Toxicological Information

Acute Toxicity Estimate

Component	Oral LD ₅₀	Dermal LD ₅₀	Inhalation LC ₅₀
Hydrochloric Acid (30%)	680-791 mg/kg (rat)	4,140 mg/kg (rabbit)	1,357 ppm

Chronic Toxicity – Carcinogenicity

Component	IARC
Hydrochloric Acid	Not classified as carcinogenic.

Skin Corrosion/Irritation	Corrosive. Capable of producing severe burns, blisters, ulcers and permanent scarring.
Ingestion	Can cause burns to the lips, tongue, esophagus and stomach; abdominal pain; nausea; vomiting; diarrhea and death.
Inhalation	May cause respiratory irritation with symptoms of coughing, pain, inflammation and swelling in the upper respiratory tract. Higher concentrations can cause pulmonary edema.
Serious Eye Damage/Irritation	Corrosive. Capable of producing severe eye burns and permanent damage, including blindness.
Respiratory or Skin Sensitization	Not a skin or respiratory sensitizer.
Germ Cell Mutagenicity	Available evidence does not suggest that hydrochloric acid is a mutagen.

Reproductive Toxicity	Not Available
STOT-Single Exposure	May cause respiratory irritation.
STOT-Repeated Exposure	Not Available
Aspiration Hazard	Not Available
Synergistic Materials	Not Available

Section 12 – Ecological Information

Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
Hydrochloric Acid	EC ₅₀ (Green algae, 72hr): 0.0492 mg/L	LC ₅₀ (Cyprinus carpio, 96 hr): 4.92 mg/L	LC ₅₀ (Carcinus maenas, 48hr): 240 mg/L
Biodegradability	Not Applicable - hydrochloric acid disassociates in water.		
Bioaccumulation	Hydrogen chloride does not accumulate in the food chain.		
Mobility	Hydrogen chloride dissociates into chloride and hydronium ions in moist soil.		
Other Adverse Effects	Extremely toxic to aquatic life by lowering the pH below 5.5. Dissociates in water and will be neutralized by naturally occurring alkalinity and carbon dioxide. Acid will permeate soil, dissolving soil material and will be neutralized somewhat.		

Section 13 – Disposal Considerations

Waste From Residues/Unused Products	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 – Transport Information

UN Number	UN1789
UN Proper Shipping Name	HYDROCHLORIC ACID
Transport Hazard Class(es)	8
Packaging Group	II
Environmental Hazards	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.
Special Precautions	Not Available
Transport in Bulk	Not Available
<u>TDG</u>	
Other	Secure containers (full and/or empty) with suitable hold down devices during shipment and ensure all caps, valves, or closures are secured in the closed position.

TDG PRODUCT CLASSIFICATION: This product has been classified on the preparation date specified at section 14 of this MSDS / SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and/or published test data regarding the classification of this product are listed in the references at section 16 of this MSDS / SDS.

Section 15 – Regulatory Information

NOTE: THE PRODUCT LISTED ON THIS SDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS SDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

Section 16 – Other Information

Preparation Date January 19, 2016

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

Attention: Receiver of the chemical goods / SDS coordinator

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If you have any questions or concerns please call our customer service center.

References:

- 1) CHEMINFO
- 2) eChemPortal
- 3) TOXNET
- 4) Transportation of Dangerous Goods Canada
- 5) HSDB
- 6) ECHA
- 7) PAN