



Fisher Science Education

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MATERIAL SAFETY DATA SHEET

MSDS No.: HH0090
Revision Date: February 23, 2010
Approved by: James A. Bertsch

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Section 1 Chemical Product and Company Information

Product	HYDROCHLORIC ACID, 1 MOLAR (1 NORMAL)
Synonyms	Muriatic acid, water solution; Hydrogen chloride, water solution

CHEMTREC 24 Hour Emergency Phone Number (800)424-9300

Section 2 Composition / Information on Ingredients

Chemical Name	CAS #	%	TLV Units
Hydrochloric acid	7647-01-0	3.14%	TWA: 5 ppm (ACGIH 2001)
Water	7732-18-5	96.86%	None established.

Section 3 Hazards Identification

Emergency Overview

WARNING! CORROSIVE!

HARMFUL IF SWALLOWED. IRRITANT TO SKIN, EYES AND MUCOUS MEMBRANES.

Do not mix with chlorine type bleaches or other household chemicals. Keep away from skin and eyes. Do not inhale or swallow.

Target organs: Respiratory system, skin, eyes, lungs.

- 0 = Minimal
- 1 = Slight
- 2 = Moderate
- 3 = Serious
- 4 = Severe

Health	3
Fire	0
Reactivity	2
Contact	3

HMIS *

Section 4 First Aid Measures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention.

Section 5 Fire Fighting Measures

General information: In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool.

Extinguishing Media: Carbon dioxide, dry chemical, dry sand, alcohol foam.

Flash Point: Not combustible.

Autoignition temperature: N/A

Explosion Limits: Lower: N/A Upper: N/A

- 0 = Minimal
- 1 = Slight
- 2 = Moderate
- 3 = Serious
- 4 = Severe

NFPA



None listed.

Section 6 Accidental Release Measures

Use proper personal protective equipment as indicated in Section 8. Provide adequate ventilation. Neutralize spill with sodium bicarbonate or calcium hydroxide, absorb with inert dry material, sweep or vacuum up and place in a suitable container for proper disposal. Wash spill area with soap and water. Avoid runoff into storm sewers and ditches which lead to waterways.

Section 7 Handling & Storage CORROSIVE STORAGE CODE WHITE

Read label on container before using. Do not wear contact lenses when working with chemicals. Keep container tightly closed. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.
Handling: Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid ingestion. Do not inhale vapors, spray or mist. Wash thoroughly after handling. Remove and wash clothing before reuse.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Protect from physical damage and sunlight. Protect from moisture.

Section 8 Exposure Controls / Personal Protection

Engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower and fire extinguishing material. Personnel should wear safety glasses, goggles, or faceshield, lab coat or apron, appropriate protective gloves. Use adequate ventilation to keep airborne concentrations low.

Respiratory protection: Use a chemical fume hood and/or wear a NIOSH/MSHA-approved respirator.

Section 9 Physical & Chemical Properties

Physical state: Liquid.	Boiling point: ~100°C (~212°F) [water]
Appearance: Clear, colorless.	Freezing / Melting point: -0°C (-32°F) [water]
Odor: Pungent odor.	Decomposition temperature: N/A
pH: N/A	Solubility: Soluble.
Vapor pressure (mm Hg): 14 [water]	Specific gravity (H₂O = 1): 1.0 [water]
Vapor Density (Air = 1): 0.7 [water]	Percent volatile (%): 100%
Evaporation rate (= 1): N/A	Molecular formula: Mixture.
Viscosity: N/A	Molecular weight: Mixture.

Section 10 Stability & Reactivity

Chemical stability: Stable **Hazardous polymerization:** Will not occur.
Conditions to avoid: Containers may burst when heated. Avoid contact with water.

Incompatibilities with other materials: Metals, bases, active metals, alkali metals, oxidizing agents, hydroxides, amines, carbonates, cyanides, sulfides, sulfites, formaldehyde.

Hazardous decomposition products: Hydrogen, chlorine.

Section 11 Toxicological Information

Effects of overexposure: Corrosive! Swallowing hydrochloric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract. Vapors are irritating and may cause damage to the eyes. Splashes may cause severe burns and permanent eye damage. Can cause redness, pain, and severe skin burns. Inhalation of vapors can cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract.

RTECS #: MW4025000 [Hydrochloric acid]

Section 12 Ecological Information

The methods for determining the biological degradability are not applicable to inorganic substances. Harmful ecological effects due to the pH shift are expected.

Section 13 Disposal Considerations

These disposal guidelines are intended for the disposal of catalog-size quantities only. Federal regulations may apply to empty container. State and/or local regulations may be different. Dispose of in accordance with all local, state and federal regulations or contract with a licensed chemical disposal agency.

Section 14 Transport Information

UN/NA number: UN1789
Shipping name: Hydrochloric acid
Hazard class: 8
Packing group: III
Exceptions: Ltd Qty ≤ 5 Lt.

Section 15 Regulatory Information

TSCA-listed, EINECS-listed (231-595-7), RCRA code D002.

Section 16 Additional Information

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement.