

**Hydrochloric Acid Solution, 1.6M**

MSDS # 338.10

**Section 1: Product and Company Identification****Hydrochloric Acid Solution, 1.6M****Synonyms/General Names:** Muriatic Acid**Product Use:** For educational use only**Manufacturer:** Columbus Chemical Industries, Inc., Columbus, WI 53925.**24 Hour Emergency Information Telephone Numbers****CHEMTREC (USA): 800-424-9300****CANUTEC (Canada): 613-424-6666**

ScholarAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

**Section 2: Hazards Identification***Clear colorless liquid; pungent odor.***HMS (0 to 4)**

<b>Health</b>	<b>2</b>
<b>Fire Hazard</b>	<b>0</b>
<b>Reactivity</b>	<b>0</b>

**WARNING!** Strongly corrosive to body tissue and moderately toxic by ingestion.

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

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Section 3: Composition / Information on Ingredients**

Hydrochloric Acid, 37% (7647-01-0), 13-14%.

Water (7732-18-5), 86-87%.

**Section 4: First Aid Measures***Always seek professional medical attention after first aid measures are provided.***Eyes:** Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.**Skin:** Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.**Ingestion:** Call Poison Control immediately. **Do not induce vomiting.** Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink.**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration.**Section 5: Fire Fighting Measures**

When heated to decomposition, emits acrid fumes.

**Protective equipment and precautions for firefighters:** Use foam or dry chemical to extinguish fire.

Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

**Section 6: Accidental Release Measures**

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Remove all ignition sources and ventilate area. Contain spill with sand or absorbent material and place material in a sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

**Section 7: Handling and Storage****White****Handling:** Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.**Storage:** Store in Corrosive Area [White Storage] with other corrosive items. Store in a dedicated corrosive cabinet. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials.**Section 8: Exposure Controls / Personal Protection**

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with an acid/organic cartridge. Exposure guidelines Hydrochloric Acid: OSHA PEL: 5 ppm ceiling and ACGIH TLV: 2 ppm ceiling, STEL: N/A.

**Section 9: Physical and Chemical Properties**

<b>Molecular formula</b>	HCl.	<b>Appearance</b>	Clear, colorless liquid.
<b>Molecular weight</b>	36.46.	<b>Odor</b>	Pungent odor.
<b>Specific Gravity</b>	1.02 g/mL @ 20°C.	<b>Odor Threshold</b>	N/A.
<b>Vapor Density (air=1)</b>	N/A.	<b>Solubility</b>	Completely soluble in water.
<b>Melting Point</b>	N/A.	<b>Evaporation rate</b>	< 1 (Butyl acetate = 1).
<b>Boiling Point/Range</b>	N/A.	<b>Partition Coefficient</b>	N/A. (log $P_{OW}$ ).
<b>Vapor Pressure (20°C)</b>	N/A.	<b>pH</b>	1, acid (corrosive).
<b>Flash Point:</b>	N/A.	<b>LEL</b>	N/A.
<b>Autoignition Temp.:</b>	N/A.	<b>UEL</b>	N/A.

**Section 10: Stability and Reactivity**

Avoid heat and ignition sources.

**Stability:** Stable under normal conditions of use and storage.

**Incompatibility:** Alkalis, strong bases, metals, amines, carbonates, metal oxides, cyanides, sulfides, sulfites and formaldehyde.

**Shelf life:** Indefinite, store in a cool, dry environment.

**Section 11: Toxicology Information**

**Acute Symptoms/Signs of exposure:** **Eyes:** Redness, tearing, itching, burning, damage to cornea, conjunctivitis, loss of vision. **Skin:** Redness, blistering, burning, itching, tissue destruction with slow healing. **Ingestion:** Nausea, vomiting, burning, diarrhea, ulceration, convulsions, shock. **Inhalation:** Coughing, wheezing, shortness of breath, headache, spasm, inflammation and edema of bronchi, pneumonitis.

**Chronic Effects:** Repeated/prolonged skin contact may cause thickening, blackening or cracking. Repeated eye exposure may cause corneal erosion or loss of vision.

**Sensitization:** none expected

*Hydrochloric Acid: LD50 [oral, rabbit]; 900 mg/kg; LC50 [rat]; 3124 ppm (1 hour); LD50 Dermal [rabbit]; N/A  
Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.*

**Section 12: Ecological Information**

**Ecotoxicity (aquatic and terrestrial):** LC50 - 282 mg/l - 96 h - *Gambusia affinis* (Mosquito fish)

**Section 13: Disposal Considerations**

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Small amounts of this material may be suitable for sanitary sewer disposal after being neutralized to pH 7.

**Section 14: Transport Information**

<b>DOT Shipping Name:</b>	Hydrochloric Acid solution.	<b>Canada TDG:</b>	Hydrochloric Acid solution.
<b>DOT Hazard Class:</b>	8, pg II .	<b>Hazard Class:</b>	8, pg II.
<b>Identification Number:</b>	UN1789.	<b>UN Number:</b>	UN1789.

**Section 15: Regulatory Information**

**EINECS:** Listed (231-595-7).

**WHMIS Canada:** CLASS E: Corrosive liquid.

**TSCA:** All components are listed or are exempt.

**California Proposition 65:** Not listed.

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

**Section 16: Other Information**

**Current Issue Date:** February 4, 2009

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