

## Material Safety Data Sheet

**Hydrochloric Acid, 20° Bé**

**24 Hour Emergency Phone: CHEMTREC 1-800-424-9300**

Date of Preparation: 02/11/99

Revision: 1/31/08

### Section 1 - Chemical Product and Company Identification

Synonyms: Muriatic Acid  
 CAS No: 7647-01-0  
 Molecular Weight: 36.46  
 Chemical Formula: HCl in H<sub>2</sub>O  
 Distributed by:  
 Hawkins, Inc. 3100 E. Hennepin Avenue Minneapolis, MN 55413 (612-331-6910)

### Section 2 - Composition / Information on Ingredients

| Ingredient        | CAS No    | Percent  | Hazardous |
|-------------------|-----------|----------|-----------|
| Hydrogen Chloride | 7647-01-0 | 30 - 32% | Yes       |

### Section 3 - Hazards Identification

**Emergency Overview**

POISON! DANGER! CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED.

**Potential Health Effects**

**Inhalation:**

Corrosive! Inhalation of vapors can cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract, and in severe cases, pulmonary edema, circulatory failure, and death.

**Ingestion:**

Corrosive! Swallowing hydrochloric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract. May cause nausea, vomiting, and diarrhea, and in severe cases, death.

**Skin Contact:**

Corrosive! Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and discolor skin.

**Eye Contact:**

Corrosive! Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.

**Chronic Exposure:**

Long-term exposure to concentrated vapors may cause erosion of teeth. Long-term exposures seldom occur due to the corrosive properties of the acid.

**Aggravation of Pre-existing Conditions:**

Persons with pre-existing skin disorders or eye disease may be more susceptible to the effects of this substance.

### Section 4 - First Aid Measures

**Inhalation:**

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

**Ingestion:**

DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.

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**Skin Contact:**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

**Section 5 - Fire-Fighting Measures**

**NFPA Ratings:**

Health: 3 Flammability: 0 Reactivity: 0 Other:

**Fire:**

Not considered to be a fire hazard. May react with metals or heat to release flammable hydrogen gas.

Explosion: Not considered to be an explosion hazard.

Fire Extinguishing Media: Water or water spray. Neutralize with soda ash or slaked lime.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Structural firefighter's protective clothing is ineffective for fires involving hydrochloric acid. Stay away from ends of tanks. Cool tanks with water spray until well after fire is out.

**Section 6 - Accidental Release Measures**

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

**Section 7 - Handling and Storage**

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. When opening metal containers, use non-sparking tools because of the possibility of hydrogen gas being present. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

**Section 8 - Exposure Controls / Personal Protection**

**Airborne Exposure Limits:**

For Hydrochloric acid:

- OSHA Permissible Exposure Limit (PEL): 5 ppm (Ceiling)
- ACGIH Threshold Limit Value (TLV): 5 ppm (STEL/Ceiling)

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**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

**Personal Respirators (NIOSH Approved):**

If the exposure limit is exceeded, a full facepiece respirator with an acid gas cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**

Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure to prevent skin contact.

**Eye Protection:**

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

**Section 9 - Physical and Chemical Properties**

|   |  |
|---|--|
| Appearance:<br>Clear, colorless liquid. | Boiling Point:<br>178 - 180F                     |
| Odor:<br>Pungent odor.                  | Melting Point:<br>No information found.          |
| Solubility:<br>Infinitely soluble.      | Vapor Density (Air=1):<br>No information found.  |
| Density:<br>1.16                        | Vapor Pressure (mm Hg):<br>No information found. |

**Section 10 - Stability and Reactivity**

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

**Hazardous Decomposition Products:**

When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.

**Hazardous Polymerization:** Will not occur.

**Incompatibilities:**

A strong mineral acid, concentrated hydrochloric acid is highly reactive with strong bases, metals, metal oxides, hydroxides, amines, carbonates and other alkaline materials. Incompatible with materials such as cyanides, sulfides, sulfites, and formaldehyde.

**Conditions to Avoid:** Heat, direct sunlight.

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**Section 11- Toxicological Information**

Hydrochloric acid: Inhalation rat LC50: 3124 ppm/1H; Oral rabbit LD50: 900 mg/kg. Investigated as a tumorigen, mutagen, reproductive effector.

-----\Cancer Lists\-----

| Ingredient                    | ---NTP Carcinogen--- |             | IARC Category |
|-------------------------------|----------------------|-------------|---------------|
|                               | Known                | Anticipated |               |
| Hydrogen Chloride (7647-01-0) | No                   | No          | 3             |

**Section 12 - Ecological Information**

Environmental Fate:  
When released into the soil, this material is not expected to biodegrade. When released into the soil, this material may leach into groundwater.

Environmental Toxicity: This material is expected to be toxic to aquatic life.

**Section 13 - Disposal Considerations**

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

Dispose of container and unused contents in accordance with federal, state and local requirements.

**Section 14 - Transport Information**

Domestic (Land, D.O.T.)

Proper Shipping Name: HYDROCHLORIC ACID  
Hazard Class: 8  
UN/NA: UN1789 Packing Group: II

**Section 15 - Regulatory Information**

-----\Chemical Inventory Status - Part 1\-----

| Ingredient                    | TSCA | EC  | Japan | Australia |
|-------------------------------|------|-----|-------|-----------|
| Hydrogen Chloride (7647-01-0) | Yes  | Yes | Yes   | Yes       |

-----\Chemical Inventory Status - Part 2\-----

| Ingredient                    | Korea | --Canada-- |      | Phil. |
|-------------------------------|-------|------------|------|-------|
|                               |       | DSL        | NDSL |       |
| Hydrogen Chloride (7647-01-0) | Yes   | Yes        | No   | Yes   |

-----\Federal, State & International Regulations - Part 1\-----

| Ingredient                    | -SARA 302- |      | -SARA 313- |                |
|-------------------------------|------------|------|------------|----------------|
|                               | RQ         | TPQ  | List       | Chemical Catg. |
| Hydrogen Chloride (7647-01-0) | 5000       | 500* | Yes        | No             |

-----\Federal, State & International Regulations - Part 2\-----

| Ingredient                    | CERCLA | -RCRA- | -TSCA- |
|-------------------------------|--------|--------|--------|
|                               |        | 261.33 | 8(d)   |
| Hydrogen Chloride (7647-01-0) | 5000   | No     | No     |

Chemical Weapons Convention: No TSCA 12(b): No CDTA: Yes  
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No  
Reactivity: No (Mixture / Liquid)

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### Section 16 - Other Information

**Prepared By:** EHS&R Department

**Revision Notes:** Section 1

**Disclaimer:**

Please be advised that it is your responsibility to inform your employees of the hazards of this substance, to advise them of what these properties mean and be sure they understand exposure information.

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