

Material Safety Data Sheet  
Instant Anaerobe Reagent B  
Hydrochloric Acid Solution

## Section 1 - Chemical Product and Company Identification

**MSDS Name:** Hydrochloric acid

**Preparation Date:** June 19, 2009

**Synonyms:** Muriatic acid; Chlorohydric acid; Hydrogen chloride solution.

**Company Identification:**

MIDI, Inc.

125 Sandy Dr.

Newark, DE 19713

**For information, call:** (800) 276-8068, (302) 737-4297

**For Domestic CHEMTREC assistance, call:** 800-424-9300

**For International CHEMTREC assistance, call:** 703-527-3887

## Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7732-18-5	Water	78	231-791-2
7647-01-0	Hydrogen chloride	22	231-595-7

## Section 3 - Hazards Identification

### EMERGENCY OVERVIEW

Appearance: colorless to slight yellow clear liquid.

**Danger!** Causes eye and skin burns. May be harmful if swallowed. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. Corrosive to metal. May cause fetal effects based upon animal studies.

**Target Organs:** Respiratory system, teeth, eyes, skin.

#### Potential Health Effects

**Eye:** May cause irreversible eye injury. Vapor or mist may cause irritation and severe burns. Contact with liquid is corrosive to the eyes and causes severe burns. May cause painful sensitization to light.

**Skin:** May be absorbed through the skin in harmful amounts. Contact with liquid is corrosive and causes severe burns and ulceration.

**Ingestion:** May cause circulatory system failure. Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. May cause corrosion and permanent tissue destruction of the esophagus and digestive tract.

**Inhalation:** May cause severe irritation of the respiratory tract with sore throat, coughing, shortness of breath and delayed lung edema. Causes chemical burns to the respiratory tract. Exposure to the mist and vapor may erode exposed teeth. Causes corrosive action on the mucous membranes.

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**Chronic:** Prolonged or repeated skin contact may cause dermatitis. Repeated exposure may cause erosion of teeth. May cause fetal effects. Laboratory experiments have resulted in mutagenic effects. Prolonged exposure may cause conjunctivitis, photosensitization, and possible blindness.

## Section 4 - First Aid Measures

**Eyes:** Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes). SPEEDY ACTION IS CRITICAL!

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately. Give milk of magnesia.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

**Notes to Physician:** Do NOT use sodium bicarbonate in an attempt to neutralize the acid.

**Antidote:** Do NOT use oils or ointments in eye.

## Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Not flammable, but reacts with most metals to form flammable hydrogen gas. Use water spray to keep fire-exposed containers cool. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Reaction with water may generate much heat which will increase the concentration of fumes in the air. Containers may explode when heated.

**Extinguishing Media:** For large fires, use water spray, fog, or alcohol-resistant foam. Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. Do NOT get water inside containers. Do NOT use straight streams of water. Most foams will react with the material and release corrosive/toxic gases. Cool containers with flooding quantities of water until well after fire is out. For small fires, use carbon dioxide (except for cyanides), dry chemical, dry sand, and alcohol-resistant foam.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 3; Flammability: 0; Instability: 1

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.  
**Spills/Leaks:** Large spills may be neutralized with dilute alkaline solutions of soda ash (sodium carbonate, Na<sub>2</sub>CO<sub>3</sub>), or lime (calcium oxide, CaO). Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Provide ventilation. Do not get water inside containers. A vapor suppressing foam may be used to reduce vapors. Cover with dry earth, dry sand, or other non-combustible material followed with plastic sheet to minimize spreading and contact with water.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Contents may develop pressure upon prolonged storage. Do not breathe dust, mist, or vapor. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Discard contaminated shoes. Use caution when opening. Keep from contact with moist air and steam.

**Storage:** Do not store in direct sunlight. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area. Do not store in metal containers. Do not store near flammable or oxidizing substances (especially nitric acid or chlorates).

## 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. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Water	none listed	none listed	none listed
Hydrogen chloride	2 ppm Ceiling	50 ppm IDLH	5 ppm Ceiling; 7 mg/m <sup>3</sup> Ceiling

**OSHA Vacated PELs:** Water: No OSHA Vacated PELs are listed for this chemical. Hydrogen chloride: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** Wear chemical splash goggles and face shield.

**Skin:** Wear neoprene or polyvinyl chloride gloves to prevent exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

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## Section 9 - Physical and Chemical Properties

**Physical State:** Clear liquid  
**Appearance:** colorless to slight yellow  
**Odor:** strong, pungent  
**pH:** 0.01  
**Vapor Pressure:** 5.7 mm Hg @ 0 deg C  
**Vapor Density:** 1.26  
**Evaporation Rate:** > 1.00 (N-butyl acetate)  
**Viscosity:** Not available.  
**Boiling Point:** 81.5 - 110 deg C @ 760 mmHg  
**Freezing/Melting Point:** -74 deg C  
**Decomposition Temperature:** Not available.  
**Solubility:** Miscible.  
**Specific Gravity/Density:** 1.0-1.2  
**Molecular Formula:** HCl.H<sub>2</sub>O  
**Molecular Weight:** 36.46

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures.  
**Conditions to Avoid:** Mechanical shock, incompatible materials, metals, excess heat, exposure to moist air or water, bases.  
**Incompatibilities with Other Materials:** Acetates, acetic anhydride, alcohols + hydrogen cyanide, 2-aminoethanol, ammonium hydroxide, calcium carbide, calcium phosphide, cesium acetylene carbide, cesium carbide, chlorosulfonic acid, 1,1-difluoroethylene, ethylene diamine, ethyleneimine, fluorine, lithium silicides, magnesium boride, mercuric sulfate, oleum, perchloric acid, potassium permanganate, beta-propiolactone, propylene oxide, rubidium acetylene carbide, rubidium carbide, sodium, sodium hydroxide, sulfuric acid, uranium phosphide, vinyl acetate, zinc, metal oxides, aluminum, amines, carbonates, iron, steel, copper alloys, copper, alkali metals, bases.  
**Hazardous Decomposition Products:** Hydrogen chloride, chlorine, carbon monoxide, carbon dioxide, hydrogen gas.  
**Hazardous Polymerization:** Will not occur.

## Section 11 - Toxicological Information

**RTECS#:**  
**CAS#** 7732-18-5: ZC0110000  
**CAS#** 7647-01-0: MW4025000; MW4031000  
**LD50/LC50:**  
CAS# 7732-18-5:  
Oral, rat: LD50 = >90 mL/kg;

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CAS# 7647-01-0:

Inhalation, mouse: LC50 = 1108 ppm/1H;  
Inhalation, mouse: LC50 = 20487 mg/m<sup>3</sup>/5M;  
Inhalation, mouse: LC50 = 3940 mg/m<sup>3</sup>/30M;  
Inhalation, mouse: LC50 = 8300 mg/m<sup>3</sup>/30M;  
Inhalation, rat: LC50 = 3124 ppm/1H;  
Inhalation, rat: LC50 = 60938 mg/m<sup>3</sup>/5M;  
Inhalation, rat: LC50 = 7004 mg/m<sup>3</sup>/30M;  
Inhalation, rat: LC50 = 45000 mg/m<sup>3</sup>/5M;  
Inhalation, rat: LC50 = 8300 mg/m<sup>3</sup>/30M;  
Oral, rabbit: LD50 = 900 mg/kg;

**Carcinogenicity:**

CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 7647-01-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** Experimental reproductive effects have been reported.

**Teratogenicity:** Embryo or Fetus: Stunted fetus, Inhalation, rat TCL0=450 mg/m<sup>3</sup>/1H  
Specific Developmental Abnormalities: homeostatis, Inhalation, rat TCL0=450 mg/m<sup>3</sup>/1H  
(female 1 days pre-mating).

**Reproductive Effects:** No information available.

**Mutagenicity:** Cytogenetic analysis: Hamster, lung = 30 mmol/L.; Cytogenetic analysis:  
Hamster, ovary = 8 mmol/L.

**Neurotoxicity:** No information available.

**Other Studies:**

## Section 12 - Ecological Information

**Ecotoxicity:** Fish: Bluegill/Sunfish: 3.6 mg/L; 48Hr; Lethal (unspecified)Fish:  
Bluegill/Sunfish: LC50; 96 Hr; pH 3.0-3.5 No data available.

**Environmental:** Rapidly hydrolyzes when exposed to water. Will exhibit extensive evaporation from soil surfaces. Upon transport through the soil, hydrochloric acid will dissolve some of the soil materials (especially those with carbonate bases) and the acid will neutralize to some degree.

**Physical:** No information available.

**Other:** No information available.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

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**Section 14 - Transport Information**

	<b>US DOT</b>	<b>Canada TDG</b>
<b>Shipping Name:</b>	HYDROCHLORIC ACID	No information available.
<b>Hazard Class:</b>	8	
<b>UN Number:</b>	UN1789	
<b>Packing Group:</b>	II	

**Section 15 - Regulatory Information**

**US FEDERAL**

**TSCA**

CAS# 7732-18-5 is listed on the TSCA inventory.  
CAS# 7647-01-0 is listed on the TSCA inventory.

**Health & Safety Reporting List**

None of the chemicals are on the Health & Safety Reporting List.

**Chemical Test Rules**

None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b**

None of the chemicals are listed under TSCA Section 12b.

**TSCA Significant New Use Rule**

None of the chemicals in this material have a SNUR under TSCA.

**CERCLA Hazardous Substances and corresponding RQs**

CAS# 7647-01-0: 5000 lb final RQ; 2270 kg final RQ

**SARA Section 302 Extremely Hazardous Substances**

CAS# 7647-01-0: 500 lb TPQ (gas only)

**SARA Codes**

CAS # 7647-01-0: immediate.

**Section 313**

This material contains Hydrogen chloride (CAS# 7647-01-0, 22%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**Clean Air Act:**

CAS# 7647-01-0 is listed as a hazardous air pollutant (HAP).  
This material does not contain any Class 1 Ozone depletors.  
This material does not contain any Class 2 Ozone depletors.

**Clean Water Act:**

CAS# 7647-01-0 is listed as a Hazardous Substance under the CWA.  
None of the chemicals in this product are listed as Priority Pollutants under the CWA.  
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**

CAS# 7647-01-0 is considered highly hazardous by OSHA.

**STATE**

CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.  
CAS# 7647-01-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

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**California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**

T C

**Risk Phrases:**

- R 23 Toxic by inhalation.
- R 35 Causes severe burns.

**Safety Phrases:**

- S 1/2 Keep locked up and out of reach of children.
- S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S 9 Keep container in a well-ventilated place.

**WGK (Water Danger/Protection)**

- CAS# 7732-18-5: No information available.
- CAS# 7647-01-0: 1

**Canada - DSL/NDSL**

- CAS# 7732-18-5 is listed on Canada's DSL List.
- CAS# 7647-01-0 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of E, D2A.

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

**Canadian Ingredient Disclosure List**

- CAS# 7647-01-0 is listed on the Canadian Ingredient Disclosure List.

**Section 16 - Additional Information**

This Material Safety Data Sheet has been prepared in accordance with 29 CFR 1910.1200 and contains information believed to be accurate and complete at the date of preparation. The statements contained herein are offered for informational purposes only and are based upon technical data. MIDI Inc. believes them to be accurate but does not purport to be all-inclusive. The above-stated product is intended for use only by persons having the necessary technical skills and facilities for handling the product at their discretion and risk. Since conditions and manner of use are outside our control, we (MIDI Inc.) make no warranty of merchantability or any such warranty, express or implied with respect to information and we assume no liability resulting from the above product or its use. Users should make their own investigations to determine suitability of information and product for their particular purposes.