

NIACET CORPORATION
400 47th St.
Niagara Falls, NY 14304
Fx (716) 285 1497
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MSDS
HYDROCHLORIC ACID
20' Be
Issued: January 2007

EMERGENCY PHONE NUMBER: (800) 424 9300, (202) 483-7616

MATERIAL SAFETY DATA SHEET HYDROCHLORIC ACID, 20' Be

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SECTION I - PRODUCT IDENTIFICATION

Product Name: Hydrochloric acid
Chemical Synonyms: HCl, Chlorohydric acid, Hydrogen chloride, Muriatic acid
Chemical Family: Inorganic acid
Chemical Formula: HCl

SECTION II - HAZARDOUS INGREDIENTS

<u>Ingredient</u>	<u>% by wt.</u>	<u>CAS #</u>
Hydrogen Chloride	31-33	7647-01-0
Water	balance	7732-18-5

OSHA Hazard Classification: Corrosive, eye hazard, lung toxin

SECTION III - PHYSICAL DATA 20 deg. Be'

Appearance:	clear, colorless fuming liquid	Vapor pressure:	not applicable
Odor:	characteristic, pungent	Specific Gravity:	1.16 to 1.17 at 25°C
Freezing Point:	-45°C	Reactivity in Water:	miscible, does not react
Boiling Point:	80°C		

SECTION IV - FIRE & EXPLOSION HAZARD

Flash Point: None by Tag Closed Cup
Flammable Limits: LFL - Not Applicable, UFL - Not Applicable
Auto-Ignition Temperature: Not Applicable
Extinguishing Media: Use extinguishing media appropriate for surrounding fire.
Special Procedures: Use pressure demand, self-contained breathing apparatus and impervious, full protective clothing.
Unusual Hazards: Emits toxic and corrosive fumes under fire conditions.
May emit hydrogen gas when in contact with metal.

SECTION V - REACTIVITY DATA

Hazardous Decomposition Products: Hydrogen
Hazardous Polymerization: Will not occur.
Incompatibility: Alkalis: exothermic reaction, may splatter or boil out of container.
Metals: Produces explosive or flammable levels of hydrogen gas.

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SECTION VI - TOXICITY DATA

<u>Route</u>	<u>Test</u>	<u>Upper Limit</u>	<u>Route</u>	<u>Test</u>	<u>Upper Limit</u>
inhal-human	LCLO	1300 ppm/30 min	inhal-rat	LC50	3124 ppm/60 min
inhal-mouse	LC50	2124 ppm/30 min	oral-rabbit	LD50	900 mg/kg

Occupational Exposure: 5 ppm OSHA ceiling, 5 ppm ACGIH ceiling
Carcinogen: IARC: NO, NTP: NO, OSHA: NO

SECTION VII - HEALTH HAZARD INFORMATION

Primary Routes of Exposure:

Inhalation: Corrosive. 100 PPM immediately dangerous to life or health.

Acute Exposure:

Exposure to gas or fumes may cause coughing, burning of the throat or nose, choking, dizziness, weakness and difficulty swallowing. Exposure above 5 ppm may be followed by inflammation and occasional ulceration of the nose, throat or larynx; laryngitis, bronchitis, pneumonia, headache, palpitations, dental erosion or nasal septum perforation. Concentrations above 50 ppm may be followed by bleeding of the nose and gums. Following a 6-8 hour latency period, laryngeal spasm or pulmonary edema with tightness of the chest, air hunger, dizziness, frothy sputum and cyanosis may occur. Shortness of breath and expectoration of blood may occur for several weeks following a single exposure. Pyloric obstruction may develop. Severe exposure may cause circulatory shock, asphyxiation, gastric hemorrhage, infection, cyanosis and death.

Chronic Exposure:

May cause erosion of teeth, followed by jaw necrosis. Bronchial irritation with chronic cough, frequent attacks of bronchial pneumonia, skin tenderness, gastrointestinal disturbances, mucous membrane irritation which may mimic viral infection of the upper respiratory tract characterized by fever and muscle tenderness. see animal mutagenic references in toxicity section.

First Aid:

Remove from exposure area to fresh air immediately. If breathing has stopped, give artificial respiration. Maintain airway and blood pressure and administer oxygen, if available. Keep affected person warm and at rest. Administration of oxygen should be performed by qualified personnel. **Get medical attention immediately.**

Skin Contact: Corrosive.

Acute Exposure:

Direct contact may cause severe pain and brownish or yellow stains. Burns may be deep with sharp edges and heal slowly with scar tissue formation.

Chronic Exposure:

Repeated or prolonged exposure to low levels may cause dermatitis.

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First Aid:

Remove contaminated clothing and shoes, directing a stream of water under clothing while it is being removed. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15-20 minutes). In case of burns, cover area with sterile, dry dressing. Bandage securely, but not too tightly. **Get medical attention.**

Eye Contact: Corrosive.

Acute Exposure:

Vapors which escape from the solution are immediately irritating to the eyes. The substance is so irritating that humans have rarely submitted to damaging concentrations. However, in animals, 1350 ppm in air for 1.5 hours has caused clouding of the cornea and 300 ppm for 6 hours has caused slight erosion of the corneal epithelium. Contact with the liquid may cause conjunctival fluid build up (edema) and corneal destruction with pain, lacrimation, blurred vision and photosensitization. Severity of damage depends on the quantity, concentration and duration of contact. In humans, the effects have from redness and irritation of the conjunctiva, to total corneal opacification and loss of the eye. Rarely, lens opacity may occur. Most commonly, a drop of the liquid splashed in the eye and immediately washed out with water may cause white coagulation of the corneal and conjunctival epithelium. Corneal sloughing may occur within a few days and the eyes return to normal. A 2% aqueous solution of hydrochloric acid has been applied to human eyes for a few seconds without significant injury. The liquid is injurious to rabbit corneas at pH less than 3. Solutions of 0.25N to 1N have caused scarring of rabbit corneas.

Chronic Exposure:

Prolonged vapor contact may cause conjunctivitis. 100 ppm for six hours daily for fifty days caused slight unrest and eye irritation, but no injury in rabbits. The liquid may cause corneal damage and scarring.

Eye Contact: Continued

First Aid:

Wash eyes immediately with large amount of water, lifting the upper and lower lids, until no evidence of the chemical remains (at least 15-20 minutes). In case of burns, apply sterile bandages loosely without medication. **Get medical attention immediately!**

Ingestion: Corrosive.

Acute Exposure:

May cause burns of the mouth, esophagus and stomach with consequent pain, nausea, salivation, vomiting, chills, shock and thirst. May cause ulceration of all membranes and tissues which the acid contacts. Asphyxia or nephritis may occur. After initial recovery, fever may indicate perforation of the esophagus or stomach. In severe cases, circulatory collapse may occur which, if not corrected, may lead to renal, liver or heart failure.

First Aid:

If victim is conscious and not convulsive, give him large quantities of water immediately to dilute the acid. Do not induce vomiting. If respiration is depressed, give oxygen. **Get medical attention immediately!**

Medical Conditions Aggravated by Exposure:

Respiratory and cardiovascular disease.

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SECTION VIII - EMPLOYEE PROTECTION

Ventilation:

Recommend control of vapors with local ventilation, use caustic scrubber.

Respiratory Protection:

Exposure limit to: **50 ppm** - half face mask with acid gas cartridge
51-100 ppm - full face mask with acid gas cartridge
over 100 ppm - self contained breathing apparatus with full face piece operated in pressure demand or other positive pressure mode
Escape - gas mask with an acid cartridge, self contained breathing apparatus

Protective Clothing:

Body covering clothing, impervious rubber gloves, rubber boots and face shield required where any chance of exposure exists. Neoprene is recommended.

Eye Protection:

Splash proof or dust proof chemical goggles or full face shield.
Eye wash and safety shower at the work station.

SECTION IX - SPILL AND DISPOSAL PROCEDURES

Action to be Taken for Spills:

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind.
Hazardous concentrations in air may be found in local spill area and immediately down wind.

Response to this material may require positive pressure, self-contained breathing apparatus. Additional chemical protective clothing must be worn to prevent personal contact with this material. These items include, but are not limited to: boots, gloves, hard hat, splash-proof goggles, full face shield, impervious clothing.

Contain spill with earthen dike. Pump solution to a suitable container. Knock down vapors with a water spray or fog. Water used to knock down vapors may become corrosive or toxic. This liquid should be contained properly for later disposal. Small amounts of material may be neutralized with excess soda ash or lime until all liquid is absorbed. Collect material for disposal. Wash down neutralized area of spill with large quantities of water.

Disposal Methods:

Dispose of in accordance with applicable Federal, state and local regulations. This material is defined as a hazardous substance under CERCLA.

SECTION XI - TRANSPORTATION REGULATORY REQUIREMENTS

DOT Proper Shipping Name: Hydrochloric acid, solution UN 1789
Hazard Class or Division: 8
Primary: CORROSIVE
Packing Group: II
Labels: CORROSIVE

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SECTION XII - OTHER REGULATORY CONTROLS

Hydrochloric acid, CAS # 7647-01-0

TSCA Inventory:	YES
Regulated under RECRA:	NO
Regulated under CERCLA:	YES
Regulated under SARA Title III:	YES
Section 302 & 313:	YES

OSHA Health Hazards: corrosive; eye hazard; lung toxin
SARA Hazard Class: Acute: YES, Chronic: YES
Fire: NO, Pressure: NO, Reactivity: NO

Hydrochloric acid is regulated as a Hazardous Substance under the state laws of Massachusetts, New Jersey and Pennsylvania.

IMPORTANT

Hydrochloric acid is an extremely hazardous substance and a toxic chemical subject to reporting requirements of Section 302 & 313 of the Emergency Planning and Community Right to Know Act of 1986, Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III.

In New York State, this product may not be delivered to a tank that is not registered with New York State Department of Environmental Conservation under regulation 6NYCRR Part 596, Registration of Hazardous Substances Bulk Storage Tanks. Similar regulations may exist in other states.

The information herein is given in good faith and believed to be accurate and has been compiled from sources believed to be reliable. Buyer assumes all risk of use, storage and handling of this product in compliance with applicable federal, state, and local laws and regulations.