

MATERIAL SAFETY DATA SHEET

MURIATIC ACID



SECTION 01: PRODUCT IDENTIFICATION

Product Identifier:	Hydrochloric Acid 20 Be
WHMIS Classification:	D-1A: Materials causing immediate and serious effects, E: Corrosive materials
Product Use	Concrete Cleaner
Manufacturer's Name:	Concretech Inc., #106, 2567- 192 Street, Surrey, BC, V3S 3X1, Canada
Supplier's Name	Concretech Inc., #106, 2567- 192 Street, Surrey, BC, V3S 3X1, Canada
Preparation Date of MSDS:	March 19 th , 2002
Revision Date of MSDS:	April 19 th , 2011
MSDS Prepared By:	Farhad Kazemian
Phone Number of Preparer:	1 604 210 1147
Emergency Phone Number	1 888 503 6780

SECTION 02: HAZARDOUS INGREDIENTS

Ingredients:	% by Weight	CAS#	LD/50	LC/50	Comments
Hydrogen Chloride	32 - 35	7647-01-0	900 mg/kg (Oral Rabbit)	1562 ppm 4h. (Vapor Rat)	UN 1789

SECTION 03: HAZARDOUS IDENTIFICATION

Route of Entry:	Eye Contact, skin contact, inhalation, ingestion
Skin Contact:	Extremely hazardous (corrosive). May produce burns, redness, pain and severe irritation.
Skin Absorption:	IT may be absorbed through the skin and cause pain.
Eye Contact:	Corrosive. Contact can cause blurred vision, redness, pain and severe tissue burns. May cause corneal injury or blindness.
Inhalation:	Extremely destructive to tissues of the mucous membranes and upper respiratory tract. May cause ulceration and perforation of the nasal septum. Symptoms may include sore throat, coughing, shortness of breath and labored breathing.
Ingestion:	Corrosive, Swallowing muriatic acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract. May cause nausea, vomiting, and diarrhea. Swallowing may be fatal.
Emergency Overview:	POISON, DANGER, CORROSIVE, LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION MAY CAUSE LUNG DAMAGE.
WHMIS Symbols:	 D1  E
Potential Health Effects:	Health=3 Severe, Flammability = 0, Reactivity= 2 Moderate, Contact = Severe (Corrosive)

SECTION 04: FIRST AID MEASURES

Skin Contact:	Flush affected skin with gently flowing water for 20-60 minutes and remove contaminated clothing while rinsing. Wash contaminated skin with mild soap and water for 15 minutes. Obtain medical attention immediately.
Eye Contact:	Flush eyes with gently flowing water for at least 15 minutes or until the chemical are removed, while holding the eyelids(s) open. Take care not to rinse the contaminated water into the unaffected eye or face. Seek immediate medical attention.
Inhalation:	If symptoms are experienced, remove source of contamination or move victim to fresh air. If symptoms

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	persist, get medical attention. If the affected person is not breathing, apply artificial respiration. If breathing is difficult, give oxygen. It is preferred to administer oxygen under a doctor's supervision or advice. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation (CPR) immediately. Immediately medical assistance is required.
Ingestion:	Seek immediate medical attention. DO NOT induce vomiting. Never give anything by mouth to an unconscious or convulsing person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Administer artificial respiration if breathing has stopped. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation (CPR) immediately.

SECTION 05: FIRE FIGHTING MEASURES

Flammable (Yes / No)	No
Yes-Under What Condition	Extreme heat or contact with metals can cause release of flammable hydrogen gas
Means of Extinction	If involved in a fire, use water spray. Neutralize with soda ash and slaked lime.
Flash Point (°C / Method)	NA
Upper Flammable Limit (% by Volume)	NA
Lower Flammable Limit (% by Volume)	NA
Autoignation Temperature (°C)	NA
Explosion Data- Sensitivity to Impact	Not considered to be an explosion hazard.
Explosion Data- Sensitivity to Static Discharge	NA
Hazardous combustion Products	Hydrogen chloride and chlorine
Special Fire Fighting Procedures	In the event of 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 firefighters protective clothing is ineffective for fires involving muriatic acid. Stay away from ends of tanks. Cool tanks with water spray until after fire is out.

SECTION 06: ACCIDENTAL RELEASE MEASURES

Leak and Spill Procedures	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.
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SECTION 07: HANDLING AND STORAGE

Handling Procedures and Equipment	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.
Storage requirements	Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage.

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SECTION 08: EXPOSURE CONTROL / PERSONAL PROTECTION

Airborne Exposure Limit	ACGIH	2 ppm (Ceiling), A4 Not classifiable as a human carcinogen
	OSHA	5 ppm (Ceiling)
	Other	NA
Engineering Controls	General	A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits.
	Local Exhaust	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.
	Other	Please refer to the ACGIH document, <i>Industrial Ventilation, A Manual of Recommended Practices</i> , most recent edition, for details.
Personal Protective Equipment	Gloves	Rubber or neoprene gloves
	Respirator	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
	Eye	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.
	Footwear	impervious boots
	Clothing	apron, or coveralls
	Other	NA
Hazard Index		H=3, F=0, R=2

SECTION 09: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Fuming Liquid
Odor and Appearance	Pungent odor, clear to yellowish
Odor Threshold (ppm)	The highest known value is 5 ppm
Specific Gravity (Water=1)	1.18 g/cm ³
Vapor Density (air = 1)	No information found
Vapor Pressure (mmHg)	190 mmHg @ 25 C (77 F)
Evaporation Rate	Equal to water
Boiling Point °C	109 C (228 F)
Freezing Point °C	Not applicable
Volatile % By Weight	100
PH	Acidic
Coefficient of Water / Oil Distribution	NA
Solubility in Water	Infinite in water with slight evolution of heat

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability	Stable under ordinary conditions of use and storage. Containers may burst when heated.
Incompatibility With Other Substances	A strong mineral acid, concentrated hydrochloric acid is incompatible with many substances and 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.
Reactivity	It will react with common metals such as aluminum, tin, and copper to produce

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Hazardous Decomposition Products	hydrogen gas. 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.
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SECTION 11: TOXICOLOGICAL INFORMATION

Effects on Acute Exposure	Inhalation rat LC50: 3124 ppm/1H; oral rabbit LD50: 900 mg/kg (Hydrochloric acid concentrated);
Effects on Chronic Exposure	May cause dermatitis, discoloration of the skin or hair, blood and liver damage.
Irritancy of Product	May produce burns, redness, pain and severe irritation of skin
Skin Sensitization	Not Recorded.
Respiratory sensitization	Not recorded
Carcinogenicity	NA
Other Toxicity Information	NA
IARC (1,A2 or 2B)	NA
ACGIH (A1, A2 or A3)	See Section 2
Reproductive Toxicity	NA
Teratogenicity	NA
Embryotoxicity	NA
Mutagenicity	NA
Name of Synergistic Products / Effects	NA

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicological 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.
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SECTION 13: DISPOSABLE CONSIDERATIONS

Waste Disposal	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.
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SECTION 14: TRANSPORT INFORMATION

Special Shipping Information	Hydrochloric Acid
PIN	Class: 8, UN: 1789, PG: II
TDG	Class: 8, UN: 1789, PG: II
DOT	Class: 8, UN: 1789, PG: II
IMO	NA
ERAP	NA

SECTION 15: REGULATORY INFORMATION

WHMIS Classification	D-1A: Materials causing immediate and serious effects, E: Corrosive materials
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OSHA	NA
SARA 302	Hydrochloric Acid: listed 5000 required
TSCA	TSCA 12 (b) : No
DSL	Listed

SECTION 16: OTHER INFORMATION

Regulatory Information	POISON! DANGER! CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION MAY CAUSE LUNG DAMAGE.
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. It is provided solely for the customer's consideration, and verification. Hereby specifically claims. It shall not be held liable for any damage resulting from handling or from contact with the above products.

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