



PMC WATER SYSTEMS SERVICES INC.

124 CONNIE CRES. UNIT 9 CONCORD, ONTARIO.

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SAFETY DATA SHEET HYDROCHLORIC ACID

Protection Required



SECTION 1 - MATERIAL IDENTIFICATION AND USE

Manufacturer's Name : PMC Water Systems Services Inc.
Manufacturer's Address : 124 Connie Crescent, Unit 9, Concord, ON L4K 1L7
Manufacturer's Phone # : (905) 669-8262
24 Emergency Phone # : Canutec (613) 996-6666
Product Identifier : Hydrochloric Acid
Product Use : Water Treatment

SECTION 2 – COMPOSITION/INGREDIENTS OF MATERIAL

Ingredients	Concentration	CAS #	LD ₅₀	LC ₅₀
Hydrochloric Acid	15-40%	7647-01-0	700 mg/kg (oral – rat)	3142 ppm (rat – 1hour)

SECTION 3 – HAZARDS IDENTIFICATION

Signal Word DANGER!

Hazard Statement May be corrosive to metals. Harmful if swallowed. Harmful if inhaled. Causes severe skin burns and eye damage. May cause respiratory irritation.

Precautionary Statement Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust/fume gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/clothing and eye/face protection. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Immediately take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. Absorb spillage to prevent material damage. Store in corrosive resistant container with a resistant inner liner. Keep only in original container. Store locked up. Store in a well-ventilated place. Keep container tightly closed. Dispose of contents container in accordance with local/regional/national/international regulations.

Other hazards which do not result in classification Ingestion may cause severe irritation to the mouth, throat and stomach. Contact with metals may release small amounts of flammable hydrogen gas. Prolonged skin contact may cause dermatitis (rash), characterized by red, dry, itching skin. May cause respiratory tract irritation. Prolonged or repeated inhalation of fumes or vapours, may cause chronic lung effects, such as bronchitis, and tooth enamel erosion. Chronic skin contact with low concentrations may cause dermatitis.

SECTION 4 – FIRST AID MEASURES

Eye Contact Immediately flush eye(s) gently with water for at least 15 minutes while holding eyelid(s) open. Get medical attention immediately. Do not transport victim until the recommended flushing period is complete, unless flushing can be continued during transport.

Skin Contact Remove all contaminated clothing and immediately wash exposed areas with plenty of water and water for at least 15 minutes or up to 30 minutes for critical body areas. Obtain medical attention immediately. Do not transport victim until the recommended flushing period is complete, unless flushing can be continued during transport.

Inhalation Remove victim to fresh air. If breathing stops, begin artificial respiration immediately. Contact a poison control centre, emergency room or physician immediately as further treatment will be necessary.

Ingestion Do not induce vomiting. If victim is conscious, wash out mouth with water. 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 lungs. Contact a poison control centre, emergency room or physician immediately as further treatment will be necessary.

SECTION 5 - FIRE FIGHTING MEASURES

Flammability	Non-flammable
Flash Point	Not Applicable
Autoignition	Not Available
Temperature	
Extinguishing media	Use extinguishing media appropriate for surrounding fire.
Exposure Hazards	Reacts with metals to generate flammable hydrogen gas. Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure build-up which could result in container rupture. Use water spray or fog to reduce or direct vapors.
Firefighting Equipment	Fire fighters should wear full protective clothing, including self-contained breathing equipment.
Hazardous Combustion Products	When heated to decomposition, product emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.
NFPA Ratings	Health 3, Flammability 0, Instability 1
HMS Ratings	Health 3, Flammability 0, Reactivity 1

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions	Wear appropriate protective equipment.
Environment precautions	Ensure spilled product does not enter sewers or streams; dike if needed.
Spill Response/Cleanup	Ventilate area. Isolate hazard and restrict access to unprotected personnel. Dike area to contain spill. Neutralize with lime slurry, limestone or soda ash. Transfer liquid to containers for recovery or disposal. Flush area with water to remove trace residue.

SECTION 7 – HANDLING AND STORAGE

Handling	Corrosive Material. For industrial use only. Handle and open containers with care. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid inhalation of chemical. Use only in well ventilated areas. Wash thoroughly after handling. When diluting, always add acid to water – never add water to acid! Empty containers may contain hazardous product residues.
Storage Requirements	Store in a cool, dry, well-ventilated area away from heat and ignition sources. Keep away from direct sunlight. Keep containers tightly closed. Protect against moisture, water and physical damage. Avoid storage with incompatible materials. Store in corrosive resistant container with a resistant inner liner.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation	Use only in well ventilated areas. Use local exhaust if mist or spray is generated.
Respiratory Protection	Use NIOSH approved combination dust/mist and acid gas cartridge or canister respirator for routine work purposes when air concentrations exceed the permissible exposure limit. For dusty or misty conditions, wear NIOSH-approved dust or mist respirator.
Skin Protection	Impervious neoprene or rubber gloves. Chemical resistant clothing and boots
Eye/Face Protection	Chemical splash goggles and face shield
Other Comments	An eyewash station and safety shower must be available in immediate work area.

Ingredients	Exposure Limit – ACGIH	Exposure Limit – OSHA	Immediately Dangerous to Life or Health - IDLH
Hydrogen Chloride Anhydrous	2 ppm Ceiling	5 ppm Ceiling 7 mg/m ³ Ceiling	50 ppm

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State	:	Fuming liquid
Odour and Appearance	:	Sharp pungent choking odour; Colourless to slight yellow
Odour Threshold	:	1 -5 ppm
Specific Gravity (Water = 1)	:	1.16 or 1.178 – 1.187 @ 16C
Vapour Pressure (mmHg)	:	100 (13 kPa) at 20°C (36%)
Vapour Density (Air = 1)	:	1.3 @ 20C
Evaporation Rate	:	Not Available
Boiling Point	:	108.6°C, 227.48°F @ 20.2%
Freezing/Melting Point	:	-35°C, -31°F @ 31.5%
pH	:	1.18 (1%)
Coefficient Water/Oil Distribution	:	12-14
Solubility in Water	:	Soluble in water and alcohol.

SECTION 10 – STABILITY AND REACTIVITY

Stability/Reactivity Incompatible Materials

Stable
Large amounts of heat can be generated when concentrated acid is mixed with water or organic solvents. Very corrosive to most metals, producing flammable hydrogen gas. Reacts violently with bases to produce heat. Reacts with reducing agents to produce heat, fire and flammable hydrogen gas. Reacts with oxidizing agents to produce heat and toxic or corrosive chloride gases. Contact with explosives may cause detonation. Reacts with cyanides to produce toxic cyanide gas, and sulphides to produce toxic hydrogen sulphide gas.

Conditions of Reactivity Hazardous Decomposition Products

Heat. Direct sunlight.
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. Reactive with some incompatible materials (such as aldehydes, epoxides) can cause polymerization.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Entry

Skin Contact

- : Skin and eye contact, ingestion, inhalation
- : Corrosive. Contact with liquid can cause severe irritation, burns, and permanent scarring or even death. Vapor or mist may cause redness, irritation and burns if contact is prolonged.

Eye Contact

- : Corrosive. Low concentrations of vapor or mist (10 - 35 ppm) can be immediately irritating and result in redness. Concentrated vapor, mist or splashed liquid can cause severe irritation, burns and permanent blindness.

Ingestion

- : Corrosive. May be fatal if swallowed. Causes burns to the mouth, throat and stomach. Causes vomiting, nausea, and diarrhea. Aspiration of the material into the lungs can cause chemical pneumonitis which can be fatal.

Inhalation

- : Corrosive to the respiratory passage. Recognition odor in air is 10 ppm. Vapor or mist at 35 ppm cause irritation of the throat, in the 50 to 100 ppm range can cause severe nasal irritation, sore throat, choking, coughing and difficulty breathing. Prolonged exposures can cause burns and ulcers to the nose and throat. Even brief exposures at 1000 to 2000 ppm can cause a life-threatening accumulation of fluid in the lungs called pulmonary edema. Symptoms of pulmonary edema such as shortness of breath may be delayed for 48 hours after exposure.

Chronic Exposure Effects

- : Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product. Repeated and prolonged exposure to low concentrations of mist or vapor can cause discoloration and damage to tooth enamel, bleeding of the nose and gums, and chronic bronchitis and gastritis. Repeated exposure to low concentrations of liquid, mist or vapor can cause redness, swelling and pain (dermatitis).

Irritancy

- : Not Available

Carcinogenicity

- : Listed by IARC as a Group 3 carcinogen; listed by ACGIH as a Group 4 carcinogen

Teratogenicity

- : Not Available

Mutagenicity

- : Not Available

Reproductive Effects

- : Not Available

SECTION 12 – ECOLOGICAL INFORMATION

General Comments

Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams or public waterways. This product may affect the acidity in water with risk of harmful effects to aquatic organisms.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal

Dispose in accordance with federal, provincial or local government requirements. Contact your local, provincial or federal environmental agency for specific regulations.

SECTION 14 – TRANSPORT INFORMATION

Shipping Regulations

UN 1789, Hydrochloric Acid, Class 8, PG II

SECTION 15 – REGULATORY INFORMATION

WHMIS Classification Class D1A: Very Toxic Material
Class E: Corrosive Material

Domestic Substances List All ingredients are listed on the DSL or are not required to be listed.

SECTION 16 – OTHER INFORMATION

Prepared by: Lab Services
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While all the data presented is believed to be accurate at the time of preparation, PMC Water Systems Services Inc. makes no warranty; the data is offered for your consideration, investigation and verification.