



pH Drop

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Emergency Number: 816-842-5936 or 816-891-6671

Effective Date: September 20, 2007

1. PRODUCT IDENTIFICATION & COMPOSITION

Commercial Product Name: **pH Decreaser**

Manufactured for CassCo Products, Inc.

Synonyms: Muriatic Acid solution; 10:1 Dilute Hydrochloric acid; Hydrochloric acid volumetric solutions (0.2 - 2.0 N)

CAS No.: 7647-01-0

Molecular Weight: 36.46

Chemical Formula: HCl in water

PRODUCT COMPOSITION: Ingredient CAS No Percent Hazardous

Hydrogen Chloride, 7647-01-0, 0.7 - 8% Yes

Water 7732-18-5, 92 - 99%, No

2. PRODUCT COMPOSITION & HAZARDOUS INGREDIENTS

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

Health Rating: 2 - Moderate

Flammability Rating: 0 - None

Reactivity Rating: 2 - Moderate

Contact Rating: 2 - Moderate (Corrosive)

Protective Laboratory Equipment: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: White (Corrosive)

Potential Health Effects: *Health hazards given on this data sheet apply to concentrated solutions of hydrochloric acid.*

Hazards of dilute solutions may be reduced, depending upon the concentration. Degree of hazard for these reduced concentrations is not currently addressed in the available literature.

Hazards Identification Emergency Overview:

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 problems or impaired respiratory function may be more susceptible to the effects of the substance.

First Aid Measures: *First aid procedures given apply to concentrated solutions. Exposures to dilute solutions may not require these extensive first aid procedures.*

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

Ingestion: If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

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

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)

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.

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 and incompatible materials. Do not wash out container and use it for other purposes. When diluting, always add the acid to water; never add water to the acid. When opening metal containers, use non-sparking tools because of the possibility of hydrogen gas being present. Protect from freezing. 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.

3. PHYSICAL PROPERTIES

Appearance: Clear, colorless solution.

Odor: Slight to odorless.

Solubility: Infinitely soluble.

Specific Gravity: 1.01

pH: ~2.0

% Volatiles by volume @ 21C (70F):100 (as water and acid)

Boiling Point: ~ 100C (~ 212F)

Melting Point:ca. 0C (ca. 32F)

Vapor Density (Air=1): Essentially the same as water.

Vapor Pressure (mm Hg): Essentially the same as water.

Evaporation Rate (BuAc=1): Essentially the same as water.

4. FIRE & EXPLOSION DATA

Physical and Chemical Properties:

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.

5. HEALTH INFORMATION / REACTIVITY DATA / FIRE AND SPILL LEAK PROCEDURES / SPECIAL PROTECTION INFORMATION / ADDITIONAL PRECAUTIONS & TRANSPORTATION:

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, incompatibles.

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

Ingredient Known Anticipated IARC Category

Hydrogen Chloride (7647-01-0), No, No, 3

Water (7732-18-5), No, No, None

Ecological Information:

Environmental Fate: *For Hydrochloric Acid (Concentrated Solutions):*

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: For Hydrochloric Acid (Concentrated Solutions): This material may be toxic to aquatic life. LC50 Shrimp: 100-300 ppm/48-hr/salt water; LC100 trout: 10 mg/l/24-hr; TLM mosquito fish: 282 ppm/96-hr.

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.

Other Information:

Product Use: Aquarium and pond pH decriaser.

The above information is given in good faith, and is based upon research of others, and is believed to be accurate by CassCo. No known relevant information has been omitted. The above information is designed to enable the User to use the product safely, and is provided solely for the User's assistance in complying with the Occupational Safety and Health Act of 1970, and the regulations thereunder. Any other use is prohibited. CassCo assumes no responsibility or liability for any loss, injury, or damage, which may occur from the use or misuse of their products. Also, because actual use by others is beyond our control, no guarantee or warranty, is either expressed or implied, by CassCo, as to the product or it's use or misuse. Where the Customer has concerns, it is recommended that the Customer(s) perform their own tests.