

MATERIAL SAFETY DATA SHEET

MURIATIC ACID 20 DEG.

MSDS ID: AC0020

Revised: 10-06-2005

Replaces: 10-20-2000

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: MURIATIC ACID 20 DEG.
MSDS ID: AC0020
Synonyms: Hydrochloric Acid; Hydrogen Chloride
CAS Number: 7647-01-0
Chemical Family: Inorganic Acid
Formula: 31.5% HCl

DISTRIBUTED BY:
Hydrite Chemical Co.
300 N. Patrick Blvd.
Brookfield, WI 53008-0948
(262) 792-1450

EMERGENCY RESPONSE NUMBERS:
24 Hour Emergency #: (414) 277-1311
CHEMTREC Emergency #: (800) 424-9300

MANUFACTURED BY: PVS; DuPont (Rowell Chemical Corp.); Jones-Hamilton Co.; Basic Chemical Solutions; Vertex Chemical Corp.; K.A. Steel; Hawkins; ERCO Worldwide; BHS Marketing

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! CORROSIVE. Causes severe burns to eyes, skin, and respiratory tract. Harmful or fatal if swallowed. Harmful or fatal if inhaled.

Physical State: Liquid.
Color: Clear. Colorless to faint yellow.
Odor: Sharp, pungent, irritating odor.

POTENTIAL HEALTH EFFECTS

Routes Of Exposure: Eyes. Ingestion. Inhalation. Skin.

Target Organs: Eyes. Skin. Respiratory System.

Eye Contact: CORROSIVE-Causes severe irritation and burns. Liquid or vapor may cause: irritation. burns. pain. blurred vision. tissue destruction. permanent eye damage. blindness.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Prolonged or repeated exposure with dilute solutions may cause: irritation. dermatitis (inflammation of the skin).

Skin Absorption: No absorption hazard expected under normal use.

Inhalation: CORROSIVE-Causes severe irritation and burns. Vapors or mists may irritate: nose. throat. respiratory tract. High vapor or mist concentrations may damage: upper respiratory tract. lungs. Severe cases may cause: laryngeal spasms. laryngeal edema. pulmonary edema. circulatory failure. death. Effects may be delayed.

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Ingestion: CORROSIVE-Causes severe irritation and burns. May cause damage to the: mouth. throat. esophagus. gastrointestinal tract. May cause: severe pain. difficulty swallowing. intense thirst. nausea. vomiting. diarrhea. perforation of the intestinal tract. kidney inflammation. shock. collapse. unconsciousness. death.

Medical Conditions Aggravated By Exposure To Product: Eye disorders. Respiratory system disorders. Skin disorders. Gastrointestinal disorders.

Other: Chronic or prolonged exposure may be associated with changes in pulmonary function, laryngitis, glottal edema, chronic bronchitis, dermatitis, erosion of tooth enamel, conjunctivitis and upper respiratory tract irritation. Individuals with preexisting diseases of the skin, asthma, or other respiratory disorders may have increased susceptibility to excessive exposures.

Cancer Information: This product does not contain greater than 0.1% of the known or potential carcinogens listed in NTP, IARC, or OSHA.

Potential Environmental Effects: See Section 12.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS Number</u>	<u>OSHA Hazard</u>	<u>% by Wt.</u>
Water	7732-18-5	NO	68.5 %
Hydrogen Chloride	7647-01-0	YES	31.5 %

4. FIRST-AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention. Do not attempt to neutralize with chemical agents.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Do not apply oils or ointments unless ordered by the physician. Keep affected area cool. Do not reuse clothing until cleaned. Discard contaminated leather articles such as shoes and belt.

Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY.

Ingestion: If fully conscious, drink a quart of water. DO NOT induce vomiting. CALL A PHYSICIAN IMMEDIATELY. If unconscious or in convulsions, take immediately to a hospital or a physician. NEVER induce vomiting or give anything by mouth to an unconscious victim. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Not combustible. For fires in area use appropriate media. For example: Water spray. Carbon dioxide. Dry chemical. Foam.

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Fire Fighting Methods: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers and disperse vapors. Product generates heat upon addition of water, with possible spattering. Neutralize run-off with Lime, Soda Ash, etc., to prevent corrosion of metals and formation of Hydrogen gas. Run-off from fire control may cause pollution.

Fire And Explosion Hazards: Product may react with some metals (ex.: Aluminum, Zinc, Tin, etc.) to release flammable hydrogen gas. Explosive concentrations of Hydrogen may accumulate inside metal equipment. Heat can cause evolution of gaseous Hydrogen Chloride.

Hazardous Combustion Products: Hydrogen Chloride gas. Hydrogen gas.

6. ACCIDENTAL RELEASE MEASURES

Spill Clean-Up Procedures: CORROSIVE MATERIAL. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit. Contain spill, place into drums for proper disposal. Flush remaining area with water and neutralize with Soda Ash or Lime and dispose of properly. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs. Keep upwind of leak or spill. Adequate ventilation is required if soda ash or limestone is used, because of the consequent release of carbon dioxide gas. CAUTION: This product may react violently with alkalis and water.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling.

Storage: CORROSIVE MATERIAL. Store in a cool, well ventilated area, out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Highly corrosive to most metals with evolution of hydrogen gas. Relieve pressure in drums weekly.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

<u>Component</u>	<u>OSHA PEL</u>	<u>OSHA STEL/C</u>	<u>ACGIH TWA</u>	<u>ACGIH STEL/C</u>
Water	Not Estab.	Not Estab.	Not Estab.	Not Estab.
Hydrogen Chloride	Not Estab.	C 5 ppm	Not Estab.	C 2 ppm

Note: C = Denotes Ceiling Limit.

Engineering Controls: General room ventilation is required. Local exhaust ventilation, process enclosures or other engineering controls may be needed to maintain airborne levels below recommended exposure limits. Avoid creating dust or mist. Maintain adequate ventilation. Do not use in closed or confined spaces. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.

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Eye/Face Protection: Wear chemical safety goggles and a full face shield while handling this product. Do not wear contact lenses.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Acid-proof. Gauntlet-type. Neoprene. Polyvinyl chloride. Rubber. Butyl rubber. Saranex (R).

Respiratory Protection: Respiratory protection must be worn if ventilation does not eliminate symptoms or keep levels below recommended exposure limits. If exposure limits are exceeded, wear: NIOSH-Approved air-purifying respirator with: Acid gas cartridge and HEPA filter. NIOSH-Approved self-contained breathing apparatus. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Rubber apron. Rubber boots. Protective clothing. Full-rubber acid suit.

General Hygiene Conditions: Wash with soap and water before meal times and at the end of each work shift.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Color: Clear. Colorless to faint yellow.

Odor: Sharp, pungent, irritating odor.

Boiling Point (deg. F): 176 - 183

Freezing Point (deg. F): < -49

Melting Point (deg. F): N.D.

Vapor Pressure (mm Hg): 35 @ 25C

Vapor Density (air=1): 1.3

Solubility in Water: Complete

pH: < 1

Specific Gravity: 1.16 @ 60F

% Volatile (wt%): N.D.

Evaporation Rate (nBuAc = 1): > 1

VOC (wt%): 0

VOC (lbs/gal): 0

Viscosity: N.D.

Flash Point: None.

Flash Point Method: N.A.

Lower Explosion Limit: N.A.

Upper Explosion Limit: N.A.

Autoignition Temperature: N.A.

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

MATERIAL SAFETY DATA SHEET

MURIATIC ACID 20 DEG.

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Conditions To Avoid: Avoid contact with water. Avoid heat, sparks or open flames. Avoid direct sunlight. Keep away from incompatibles.

Incompatible Materials: Metals. Oxidizing agents. Alkalies. Bases. Amines. Carbonates. Cyanides. Sulfides. Carbides. Oleum. Perchloric Acid. Metal Oxides. Formaldehyde. Acetylides. Phosphides. Sulfuric acid. Acetic Anhydride. Mercuric Sulfate. Hypochlorites. Sulfites. Esters. Water-reactive materials.

Hazardous Decomposition Products: Hydrogen chloride gas. Hydrogen gas. Chlorine.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions. Contact with water may cause violent reaction with evolution of heat. To dilute: Add product slowly to lukewarm water; not water to product. May react with certain metals to produce flammable hydrogen gas. Hazardous gases are evolved on contact with chemicals such as cyanides, sulfides, carbides, etc. Contact with oxidizing agents may produce chlorine gas. May react violently with incompatible substances, releasing large amounts of heat.

11. TOXICOLOGICAL INFORMATION

LD50 Oral: Rabbit: 900 mg/kg (100% HCl)

LD50 Skin: No Data

LC50 Inhalation: Rat: 2810-3124 ppm/1H (100% HCl)

For detailed toxicological information on this product, contact the address in Section 1 of this MSDS.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: Aquatic Toxicity: Hydrochloric acid is slightly toxic (96 hour LC50 = 50 - 500 mg/L). The 96 hour LC50 in Mosquito fish is 282 mg/L. The 48 hour LC50 in Bluegill is 3.6 mg/L.

Chemical Fate Information: Water: Hydrogen chloride in water dissociates almost completely, and will be neutralized by natural alkalinity and carbon dioxide. Soil: Hydrochloric acid will sink into the soil. This acid will dissolve some soil material (in particular, anything with a carbonate base), and will be somewhat neutralized. The remaining portion is thought to transport downward to the water table.

13. DISPOSAL CONSIDERATIONS

Hazardous Waste Number: D002

Disposal Method: Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations. If approved, neutralize material and flush to sewer. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition.

14. TRANSPORTATION INFORMATION

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DOT (Department of Transportation):

Proper Shipping Name: Hydrochloric Acid
Hazard Class: 8
Identification Number: UN1789
Packing Group: II
Label Required: CORROSIVE
Reportable Quantity (RQ): 5000# (Hydrogen Chloride)

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA Inventory Status: This product or all components of this product are listed on the EPA/TSCA Inventory of Chemical Substances.

SARA Title III Section 311/312 Category:

Immediate (Acute) Health Hazard: Y

Delayed (Chronic) Health Hazard: Y

Fire Hazard: N

Sudden Release Of Pressure Hazard: N

Reactive Hazard: N

SARA Section 302/304/313/HAP:

<u>Component</u>	<u>CERCLA RQ</u>	<u>SARA RQ</u>	<u>SARA TPQ</u>	<u>SARA 313</u>	<u>U.S. HAP</u>
Water	N.A.	N.A.	N.A.	NO	NO
Hydrogen Chloride	5000	5000	500	YES	YES

Note: RQ, TPQ, Section 313 reporting requirements are dependent upon individual ingredients. Hydrogen Chloride (gas and aerosol forms only) is on the Extremely Hazardous Substance List. In liquid form, Hydrogen Chloride (Hydrochloric Acid) is not required to be reported as an Extremely Hazardous Substance, but is subject to SARA 311 and 312 reporting requirements. Hydrochloric Acid also appears on the Section 313 list; however, the listing only applies to the gas and aerosol forms of Hydrochloric Acid.

U.S. STATE REGULATIONS

California - The following components are listed under Proposition 65:

Arsenic, as As (0.5 ppm max.)

Lead (1 ppm max.)

Wisconsin - The following components are listed as a Wisconsin HAP:

Hydrogen Chloride.

16. ADDITIONAL INFORMATION

Hydrite Rating System

Health: 3*

Flammability: 0

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Reactivity: 1

* = Chronic Health Hazard

NFPA Rating System

Health: 3

Flammability: 0

Reactivity: 0

Special Hazard: None

MSDS Abbreviations

N.A. = Not Applicable

N.D. = Not Determined

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

C = Ceiling Limit

N.E./Not Estab. = Not Established

MSDS Prepared by: NAO

Reason for Revision: New format. Changes made throughout the MSDS.

The data in this Material Safety Data Sheet relates to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.