1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : MURIATIC ACID 20 DEG. INHIBITED
MSDS ID : AC0021
CHEMICAL NAME SYNONYMS : Hydrochloric Acid; Hydrogen Chloride
CAS NUMBER : 7647-01-0
CHEMICAL FAMILY : Inorganic Acid
FORMULA : 31.5% HCl + Inhibitor

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: HYDRITE CHEMICAL CO.

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS NUMBER	OSHA HAZARD	% BY WT.
Water	7732-18-5	NO	~ 68.5 %
Hydrogen Chloride	7647-01-0	YES	~ 31.5 %

3. HAZARDS IDENTIFICATION

PHYSICAL STATE: Liquid.
COLOR : Clear. Amber.
ODOR : Sharp, penetrating odor.

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

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: blindness. burns. irritation. pain. photophobia. tearing. tissue destruction. Permanent eye damage may result from contact with this product.

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

SKIN ABSORPTION:

3. HAZARDS IDENTIFICATION (Cont.)

No absorption hazard expected under normal use.

INHALATION:
CORROSIVE-Causes severe irritation and burns.
Vapors or mists may irritate: mucous membranes. throat. upper respiratory tract. Dusts or mists may damage: lungs. respiratory tract. Symptoms of exposure may be delayed by several hours. May cause: pulmonary edema. Repeated over-exposure may cause: bleeding of the nose and gums.

INGESTION:
CORROSIVE-Causes severe irritation and burns.
May cause damage to the: esophagus. mouth. stomach. May be fatal if swallowed. May cause: severe pain. diarrhea. death. nausea. shock. vomiting. kidney inflammation. perforation of the intestinal tract. respiratory distress.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE TO PRODUCT:
Eye disorders. Respiratory system disorders. Skin disorders.

OTHER:
Chronic exposure may produce erosion and discoloration of the teeth. Individuals with preexisting diseases of the lungs may have increased susceptibility to the toxicity of excessive exposure.

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.

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.

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. Discard shoes if contaminated. Do not reuse clothing until cleaned.

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.

4. FIRST AID MEASURES (Cont.)

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.

NOTE TO PHYSICIANS: INGESTION: Severe burning of mouth, pharynx, abdomen, corrosion of upper gastro-intestinal tract, followed by vomiting. Dental erosions. Weakness from falling blood pressure. Asphyxia may occur from edema of the glottis. INHALATION: Can completely destroy mucous membranes. Can cause choking, coughing, headache, dizziness. Pulmonary edema may follow after several hours (24-48hrs.). Fatality may occur from gross overexposure, particularly in individuals with pre-existing lung diseases.

5. FIRE FIGHTING MEASURES

FLASH POINT: None.
FLAMMABILITY LIMITS: LEL: N.A. UEL: N.A.
AUTOIGNITION TEMPERATURE: No Data

EXTINGUISHING MEDIA:
For fires in area use appropriate media. For example: Alcohol foam. Carbon dioxide. Dry chemical. Water spray.

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.

6. ACCIDENTAL RELEASE MEASURES (Cont.)

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.

7. HANDLING AND STORAGE

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.

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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

General room ventilation is required.
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.

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 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.

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 (latex).

OTHER PROTECTIVE EQUIPMENT:

8. EXPOSURE CONTROLS/PERSONAL PROTECTION (Cont.)

Eye-wash station. Safety shower. Rubber apron. Chemical safety shoes. Rubber boots. Protective clothing. Full-rubber acid suit.

GENERAL HYGIENE CONSIDERATIONS:
Wash with soap and water before meal times and at the end of each work shift. Good manufacturing practices require gross amounts of any chemical be removed from skin as soon as practical, especially before eating or smoking.

EXPOSURE GUIDELINES:	---------OSHA---------		---------ACGIH----------	
COMPONENT	PEL	STEL/C	TWA	STEL/C
Water	Not Estab.	Not Estab.	Not Estab.	Not Estab.
Hydrogen Chloride	Not Estab.	C 5ppm	Not Estab.	C 5ppm

NOTE: C = Denotes Ceiling Limit.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT (DEG. F) : ~183
FREEZING POINT (DEG. F): ~ <-43
MELTING POINT (DEG. F) : N.D.
VAPOR PRESSURE (MM HG) : ~20-35 @20C
VAPOR DENSITY (AIR=1) : ~1.27
SOLUBILITY IN WATER : Complete
pH : <1

SPECIFIC GRAVITY: 1.161 @ 25C
% VOLATILE (WT%): N.D.
EVAPORATION RATE: N.D.
(nBuAc=1)
VOC (WT%) : <0.30
VOC (LBS/GAL) : <0.03

10. STABILITY AND REACTIVITY

STABILITY:
Stable under normal conditions.

CONDITIONS TO AVOID:
Contact with water may cause violent reaction with evolution of heat. To dilute: Add product slowly to lukewarm water; not water to product. Contact with metals, strong oxidizers and strong bases may cause a high energy release.

INCOMPATIBILITY:
Metals. Strong oxidizing agents. Alkalies. Bases. Amines. Carbonates. Cyanides. Sulfides. Carbides. Oleum. Perchloric Acid. Metal Oxides. Formaldehyde. Acetylides. Phosphides. Sulfuric acid. Acetic Anhydride. Mercuric Sulfate.

HAZARDOUS DECOMPOSITION PRODUCTS:
May react with certain metals to produce flammable hydrogen gas. Hazardous gases are evolved on contact with chemicals such as cyanides, sulfides, carbides, etc.

HAZARDOUS POLYMERIZATION:
Will not occur under normal conditions.

11. TOXICOLOGICAL INFORMATION

LD50 ORAL : Rabbit: 900 mg/kg (100% HCl)
Rat: 700 mg/kg (31.5% HCl)
LD50 SKIN : Rabbit: >5010 mg/kg (31.5% HCl)
LC50 INHALATION: Rat: 2810-3124 ppm/1H (100% HCl)

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

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:
Extensive data on individual chemicals, call for information.

CHEMICAL FATE INFORMATION:
No data available.

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. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition.

14. TRANSPORT INFORMATION (Not meant to be all inclusive)

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

15. REGULATORY INFORMATION

FEDERAL REGULATIONS:
TSCA INVENTORY STATUS:
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

SARA TITLE III SECTION 311/312 CATEGORY:
IMMEDIATE (ACUTE) HEALTH HAZARD : YES
DELAYED (CHRONIC) HEALTH HAZARD : YES
FIRE HAZARD : NO
SUDDEN RELEASE OF PRESSURE HAZARD: NO
REACTIVE HAZARD : NO

15. REGULATORY INFORMATION (Cont.)

SARA SECTION 302/304/313/HAP:

COMPONENT	RQ (LBS) (*1)	RQ (LBS) (*2)	TPQ (LBS) (*3)	SEC 313 (*4)	HAP (*5)
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 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 aerosol forms of Hydrochloric Acid.

FOOTNOTES

*1 = CERCLA Reportable Quantity
*2 = SARA Reportable Quantity
*3 = SARA EHS Threshold Planning Quantity
*4 = SARA 313 Toxic Chemical/Category
*5 = U.S. EPA Hazardous Air Pollutant

STATE REGULATIONS:

CALIFORNIA--The following components are listed under Prop 65:
This product may contain a detectable level of (a) chemical(s) subject to California's Proposition 65. If you require more information regarding Prop. 65, please contact your supplier.

WISCONSIN--The following components are listed as a Wisconsin HAP:
Hydrogen Chloride.

16. OTHER INFORMATION

HMIS RATING SYSTEM		NFPA RATING SYSTEM	
Health	: 3*	Health	: 3
Flammability	: 0	Flammability	: 0
Reactivity	: 1	Reactivity	: 0
* = Chronic Health Hazard		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.

16. OTHER INFORMATION (Cont.)

** **

The data in this Material Safety Data Sheet relates only 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 a warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.

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