Current Date: 14-AUG-2008

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Muriatic Acid (7-23 deg. Baume)

SYNONYMS: Hydrochloric Acid (2.00 to 37.5 %), FCC grade, NF grade, Reagent G, Semi-Cond. Grade, 20BE inhibited, CMC-22, Hydrochloric Acid Print CIR grade

MSDS No : 105099

SUPPLIER: HARCROS CHEMICALS, INC.
5200 Speaker Road
Kansas City, KS 66106-1095
913-321-3131
Transportation Emergency Telephone Number: 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material/CAS Number	Percent
Hydrochloric Acid 7647-01-0	< or = to 40.00%

(10.15% @ 7, 14.85% @ 10, 18.0% @ 12, 22.92% @ 15, 27.9% @ 18, 31.5% @ 20, 35.2% @ 22, 37.1% @ 23 deg. Baume')

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

DANGER! Corrosive - Causes severe burns to eyes and skin. Severely irritating to the respiratory tract and mucous membranes. Harmful or fatal if inhaled. Causes severe burns of the digestive tract. Harmful or fatal if swallowed. Never add water to product. Always add the product to large quantities of water.

Environmental Hazard -- This product is toxic to fish. Keep out of lakes, streams, ponds, or other waters.

Precautions: Do not get in eyes, on skin, or on clothing. This product is corrosive and can cause severe burns. It can cause severe irritation and/or burns to the skin. Even small amounts splashed

into the eyes can cause blindness. Do not breathe mist or vapors. Vapor may cause severe irritation of nasal and respiratory tract. Use only with adequate ventilation. Ventilation must be sufficient to limit employee exposure to this product below permissible exposure limits. Do not swallow. Swallowing can cause severe internal burns and may be fatal. Wash thoroughly every day after work. Remove and wash contaminated clothing before reuse. Do not eat, drink or smoke in work area.

4. FIRST AID MEASURES

INHALATION: Remove from area to fresh air. Contact a poison control center, emergency room or physician right away as further treatment will be necessary.

EYE/SKIN CONTACT: EYE: Remove contact lens and pour a gentle stream of warm water through the affected eye for at least 15 minutes. Contact a poison control center, emergency room or physician right away as further treatment will be necessary. SKIN: Run a gentle stream of water over the affected area for 15 minutes. A mild soap may be used if available. Contact a poison control center, emergency room or physician right away as further treatment will be necessary.

INGESTION: Gently wipe or rinse the inside of the mouth with water. Sips of water may be given if person is fully conscious. Never give anything by mouth to an unconscious or convulsing person. Do Not induce vomiting. Contact a poison control center, emergency room or physician right away as further treatment will be necessary.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Does not flash.

EXTINGUISHING MEDIA: Use extinguishers appropriate for surrounding fire.

SPECIAL FIREFIGHTING PROCEDURES: Emits toxic fumes under fire conditions. Fire-fighters must wear NIOSH approved pressure demand, self-contained breathing apparatus and full protective clothing when fighting chemical fires. Contact with most metals can rapidly generate hydrogen, which is explosive.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
Unprotected personnel should move upwind of spill. Only personnel equipped with proper respiratory and eye/skin protection should be permitted in the area. Dike area to contain spill. Dilute spill with large amounts of water then neutralize with dilute caustic or soda ash. Use a vacuum truck to pick up neutralized material for proper disposal. Properly neutralized liquid residues (pH 6 to 9) may be disposed of in waste water treatment facilities which allow the discharge of neutral salt solutions. After all visible traces have been removed, flush area with large amounts of water.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN DURING HANDLING AND STORAGE:
FOR DRUM, TOTE, AND BOTTLE STORAGE CONTAINERS: Store in a cool, dry, well-ventilated place. Store only in closed, properly labeled containers. Keep container closed when not in use. When opening container, loosen closure slowly and carefully to relieve possible internal pressure or preferably, utilize a safety relief valve where available.

FOR BULK STORAGE CONTAINERS: Bulk storage tanks should be constructed of corrosion-resistant materials such as rubber- or glass-lined steel, fiberglass, or plastic and should be vented to a scrubber to remove acid fumes. Bulk storage tanks should contain a dike sufficiently large enough to contain entire contents.

Do not use in poorly ventilated or confined spaces without proper respiratory protection. Wear appropriate personal protective equipment when handling this product. Wear respiratory protection whenever exposure to vapor is likely. Prevent acid from contacting strong alkalies or metals. Add compound slowly to water, never water to compound.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:
8-hour Time Weighted Average (TWA); 15-minute Short-Term Exposure Limit (STEL)

OSHA: The OSHA exposure limit(s) for hydrochloric acid 5 ppm (7 mg/cu.m.) ceiling. (1989 Vacated PEL's)

ACGIH: The ACGIH exposure limit(s) for hydrochloric acid 2 ppm Ceiling.

ONTARIO: The Ontario Exposure limit(s) for hydrochloric acid 5 ppm CEV.

RESPIRATORY PROTECTION: Where ventilation is inadequate, use a regulatory compliant full facepiece air purifying respirator with the appropriate chemical cartridges or positive-pressure, air-supplied respirator. Carefully read and follow the respirator manufacturer's instructions and information.

VENTILATION: Use local exhaust or general room/dilution ventilation sufficient to maintain employee exposure below permissible exposure limits.

EYE AND FACE PROTECTION: Close fitting chemical safety goggles with faceshield.

PROTECTIVE GLOVES: Butyl rubber. Neoprene. Polyvinylchloride (PVC). Viton®.

OTHER PROTECTIVE EQUIPMENT: Boots, aprons, or chemical suits should be used when necessary to prevent skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	Azeotrope 226°F (108°C) (20.2%)
Vapor Density (Air=1):	1.267 (heavier)
Specific Gravity (Water=1):	1.051/1.074/1.090/1.115/1.142/1.16/1.179/1.189 *
pH:	Acidic (1 @ 0.1 N)
FREEZING/MELTING POINT:	NA/NA/NA/-95°F/-68.3°F/-44.5°F/-23.8°F/-17.5°F * (NA/NA/NA/-70.6°C/-55.7°C/-42.5°C/-31°C/-27.5°C)
SOLUBILITY (wt.% in water):	Complete
Bulk Density (kg/M3):	8.8/9.0/9.1/9.3/9.5/9.7/9.8/9.9 lbs/gal *
VOLUME % VOLATILE:	100

VAPOR PRESSURE:	15/13/11/10/14/24/100/150 mm Hg *
Evaporation Rate:	NA
HEAT OF SOLUTION:	Extremely exothermic
Physical State:	Liquid.
Odor:	Pungent, irritating.
COLOR:	Clear water white to slightly yellow

*At 7/10/12/15/18/20/22/23 deg. baume' respectively.

10. STABILITY AND REACTIVITY

Stability: Stable.

HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBILITY (CONDITIONS/MATERIALS TO AVOID):
Contact with metals. Strong alkalies.

HAZARDOUS THERMAL DECOMPOSITION/COMBUSTION PRODUCTS:
Chlorine. Flammable explosive hydrogen evolved from contact with metals.

11. TOXICOLOGICAL INFORMATION

ACUTE INHALATION LC50:	3124 ppm (rat) (1 hour). Slight to very low toxicity.
ACUTE DERMAL LD50:	>5010 mg/kg. (rabbit) Slight to very low toxicity.
SKIN IRRITATION:	Corrosive.
EYE IRRITATION:	Corrosive.
ACUTE ORAL LD50:	900 mg/kg (rabbit) Moderate toxicity. Corrosive.

CARCINOGENICITY STATUS: This product is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, ACGIH, or OSHA.

MEDICAL CONDITIONS AGGRAVATED: None known.

EFFECTS OF OVEREXPOSURE:

ACUTE:

Inhalation: Muriatic acid mists or hydrogen chloride vapors are severely irritating to the respiratory tract and mucous membranes. Inhalation of sufficiently high concentrations may result in laryngeal spasms and/or edema, and lead to rapidly developing pulmonary edema. Mists may also cause bleeding of the nose and gum, ulceration of the nasal and oral mucosa, and severe skin and eye irritation.

Eye/skin: Muriatic acid is corrosive to the eyes and skin. Direct eye contact can result in blindness even after a short exposure to small amounts.

Ingestion: Ingestion of muriatic acid causes severe burns of the digestive tract because of its

corrosive nature and may be fatal.

CHRONIC: The effects of long-term, low level exposures to this product have not been determined. Safe handling of this material on a long-term basis should emphasize the prevention of all contact with this material to avoid any effects from repetitive acute exposures.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:
LC_{100}: 10 mg/L (24 hr, trout) - High Toxicity.
LC_{50}: 3.6 mg/L (48 hr, bluegill) - High Toxicity.
LC_{50}: 100-330 ppm (0.149-0.492 mg/L) (48 hr, shrimp, salt water) - Extreme Toxicity.
LC_{50}: 100-330 ppm (0.149-0.492 mg/L) (48 hr, starfish) - Extreme Toxicity.

ENVIRONMENTAL FATE:

Mobility:
Completely soluble.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:
Waste material must be disposed of in accordance with federal, state, provincial, and local environmental control regulations. Empty containers should be recycled or disposed of through an approved waste management facility.

14. TRANSPORT INFORMATION

Proper Shipping Name: Hydrochloric Acid Solution
Hazard Class: 8 (Corrosive)
UN Number: UN1789
Packing Group: II
USA-RQ, Hazardous Substance and Quantity: 5000 lbs./2270 kg. (Hydrochloric acid)
Marine Pollutant: None
Additional Information: USA Shipments Only - Hazardous Substances are regulated in the USA when shipped above their Reportable Quantity (RQ).

15. REGULATORY INFORMATION

USA TSCA: All components of this product are listed on the TSCA Inventory.
EU EINECS: All components in this product are listed on EINECS or meet the polymer definition.
CANADA DOMESTIC SUBSTANCES LIST (DSL): This product and/or all of its components are listed on the Canadian DSL.
AUSTRALIA AICS: All components of this product are listed on AICS.
KOREA ECL: All components in this product are listed on the Korean Existing Chemicals Inventory (KECI).
JAPAN MITI (ENCS): All components in this product are listed on the Japanese Existing and New Chemical Substances (ENCS) chemical inventory.
PHILIPPINES PICCS: All of the components in this product are listed

on the Philippines Inventory of Chemicals and Chemical Substances (PICCS).
CHINA IECSC: All components of this product are listed on the Inventory of Existing Chemical Substances in China (IECSC) or otherwise exempt.

SARA TITLE III:
SARA (311, 312) Hazard Class:
Acute Health Hazard. Reactive Hazard. Sudden Release of Pressure.
SARA (313) Chemicals:
This product contains toxic chemical(s) listed below which is(are) subject to the reporting requirement of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
HYDROGEN CHLORIDE//7647-01-0
SARA Extremely Hazardous Substance:
Liquid not listed as an Extremely Hazardous substance, but hydrogen chloride gas is listed.

CERCLA Hazardous Substance:
The following materials are listed as CERCLA Hazardous Substances in Table 302.4 of 40 CFR Part 302: Hydrogen chloride (7641-01-1) RQ = 5000 lbs./2270 kg.

CANADA REGULATIONS (WHMIS): Class E - Corrosive Material. Class D1A - Very Toxic Materials. Class D1B - Toxic Materials.

16. OTHER INFORMATION

The information provided in this Material Safety Data Sheet has been obtained from sources believed to be reliable. Harcros Chemicals, Inc. provides no warranties, either expressed or implied and assumes no responsibility for the accuracy or completeness of the data contained herein. This information is offered for your information, consideration, and investigation. You should satisfy yourself that you have all current data relevant to your particular use. Harcros Chemicals, Inc., knows of no medical condition other than those noted on this Material Safety Data Sheet, which are generally recognized as being aggravated by exposure to this product.

Previous revision date: 10/14/2005

NA = Not Available