



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name HYDROCHLORIC ACID, 6 MOLAR, VERITAS® REDISTILLED
Catalog # 504
Version # 02
Revision date 22-May-2009
CAS # Mixture
Synonym(s) MURIATIC ACID
Manufacturer information GFS Chemicals, Inc.
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2. Hazards Identification

Emergency overview DANGER

Corrosive. Causes skin and eye burns. Harmful if swallowed. Irritating to respiratory system. Prolonged exposure may cause chronic effects.

OSHA regulatory status This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Potential health effects

Routes of exposure Inhalation. Ingestion. Skin contact. Eye contact.

Eyes Causes eye burns. Risk of serious damage to eyes. Do not get this material in contact with eyes.

Skin Causes skin burns. Do not get this material in contact with skin.

Inhalation Causes burns. Irritating to respiratory system. Avoid breathing vapors or mists of this product.

Ingestion May be harmful if swallowed. Components of the product may be absorbed into the body by ingestion. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. Do not ingest.

Target organs Eyes. Respiratory system. Skin.

Potential environmental effects Components of this product are hazardous to aquatic life. May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
HYDROGEN CHLORIDE	7647-01-0	10 - 20
Non-hazardous components	CAS #	Percent
WATER	7732-18-5	60 - 80

Composition comments

US OSHA Table Z-1-A: Ceiling Limit Value (mg/m³ & ppm)

HYDROGEN CHLORIDE 7647-01-0 PPM 5 MGM3 - 7

4. First Aid Measures

First aid procedures

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Skin contact Remove and isolate contaminated clothing and shoes. Immediately flush skin with plenty of water. Get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.

Inhalation

Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.

Ingestion

Have victim rinse mouth thoroughly with water. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If material is ingested, immediately contact a poison control center.

Notes to physician

In case of shortness of breath, give oxygen. Keep victim warm.

General advice

Immediate medical attention is required. In case of shortness of breath, give oxygen. Keep victim warm. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures**Flammable properties**

The product is not flammable. Not a fire hazard.

Extinguishing media**Suitable extinguishing media**

Water. Use extinguishing agent suitable for type of surrounding fire.

Protection of firefighters**Specific hazards arising from the chemical**

Irritating, corrosive and/or toxic gases or fumes will be released during a fire.

Protective equipment and precautions for firefighters

In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers. Cool containers exposed to flames with water until well after the fire is out.

Specific methods

In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers.

6. Accidental Release Measures**Personal precautions**

Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Keep upwind. Keep out of low areas. Keep people away from and upwind of spill/leak. Ventilate closed spaces before entering them. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not contaminate water.

Methods for containment

Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas.

Methods for cleaning up

Should not be released into the environment. Use water spray to absorb gas.

Large Spills: Dike far ahead of spill for later disposal. Neutralize with sodium hydroxide, soda ash or lime.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Following product recovery, flush area with water.

Never return spills in original containers for re-use. Neutralize the spilled material before disposal.

7. Handling and Storage**Handling**

Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get this material on clothing. Use only with adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Avoid release to the environment. Handle and open container with care.

Storage

Store in a well-ventilated place. Keep container tightly closed. Keep this material away from food, drink and animal feed. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Components	CAS #	Type	Value	Form
HYDROGEN CHLORIDE	7647-01-0	Ceiling	2 ppm	

U.S. - OSHA

Components	CAS #	Type	Value	Form
HYDROGEN CHLORIDE	7647-01-0	Ceiling	5 ppm 7 mg/m3	

Engineering controls

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Respiratory protection

Use a chemical cartridge respirator for concentrations exceeding the Occupational Exposure Limit. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. Avoid breathing dust/fume/gas/mist/vapors/spray.

Hand protection

Wear protective gloves.

Eye / face protection

Do not get this material in contact with eyes. Wear chemical goggles. Face-shield.

Skin protection

Do not get this material in contact with skin. Do not get this material on clothing. Wear chemical protective equipment that is specifically recommended by the manufacturer. Wear appropriate chemical resistant clothing. It may provide little or no thermal protection. Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations. Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent). Wear appropriate chemical resistant gloves.

General hygiene considerations

Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not get this material on clothing. When using, do not eat, drink or smoke. Wash hands after handling and before eating. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

General

Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations.

9. Physical & Chemical Properties

Appearance	Clear. Aqueous solution.
Color	Colorless.
Odor	Pungent.
Odor threshold	Not available.
Physical state	Liquid.
Form	Liquid.
pH	1.01 0.1 N Solution.
Melting point	-101.2 °F (-74 °C)
Freezing point	Not available.
Boiling point	228.2 °F (109 °C) Constant boiling concentration
Flash point	Not available.
Evaporation rate	Not available.
Flammability	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	190 torr
Vapor density	Not available.
Specific gravity	1.1

Relative density	1.1 g/cm ³
Solubility (water)	Completely miscible with water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Percent volatile	100 %
Molecular weight	36.4600
Molecular formula	HCl

10. Chemical Stability & Reactivity Information

Chemical stability	Stable at normal conditions.
Conditions to avoid	Reacts violently with alkaline material.
Incompatible materials	Bases Contact with most metals produces highly flammable hydrogen gas.
Hazardous decomposition products	No hazardous decomposition products are known.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Acute effects	Causes burns.	
Acute Dermal: LD 50		
HYDROGEN CHLORIDE	7647-01-0	Mouse 1449 mg/kg
Acute Inhalation: LC 50		
HYDROGEN CHLORIDE	7647-01-0	Mouse 1108 mg/l 1 h
HYDROGEN CHLORIDE	7647-01-0	Rat 3124 mg/l 1 h
Acute Oral: LD 50		
HYDROGEN CHLORIDE	7647-01-0	Rabbit 900 mg/kg
Acute Toxicity other routes: LD 50		
HYDROGEN CHLORIDE	7647-01-0	Mouse 1449 mg/kg Intraperitoneal

Toxicology data for the preparation

Acute LD50: 7245 mg/kg, Mouse, Dermal, estimated
 Acute LC50: 5540 mg/l, Mouse, Inhalation, estimated

Local effects	Irritating to respiratory system.
Chronic effects	Hazardous by OSHA criteria. Prolonged exposure may cause chronic effects.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs: Evidence of carcinogenicity in humans	
HYDROGEN CHLORIDE	7647-01-0 Inadequate data.
US ACGIH Threshold Limit Values: A4 carcinogen	
HYDROGEN CHLORIDE	7647-01-0 Group A4 Not classifiable as a human carcinogen.
Corrosivity	Hazardous by OSHA criteria.

12. Ecological Information

Ecotoxicity	Components of this product are hazardous to aquatic life. Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.
Environmental effects	Harmful to aquatic life.
Persistence and degradability	Not available.

13. Disposal Considerations

Waste codes	D002: Waste Corrosive material [pH ≤2 or ≥12.5, or corrosive to steel]
Disposal instructions	Dispose of this material and its container at hazardous or special waste collection point. Do not allow this material to drain into sewers/water supplies. Solutions with low pH-value must be neutralized before discharge. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Not applicable.

14. Transport Information

DOT

Basic shipping requirements:

Proper shipping name	Hydrochloric acid
Hazard class	8
UN number	UN1789
Packing group	II
Additional information:	
Special provisions	A3, A6, B3, B15, IB2, N41, T8, TP2, TP12
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242
ERG number	157



15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Spill: Reportable quantity

HYDROGEN CHLORIDE 7647-01-0 5000 LBS

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold Planning Quantity

HYDROGEN CHLORIDE 7647-01-0 500 LBS

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

HYDROGEN CHLORIDE 7647-01-0 1.0 %

CERCLA (Superfund) reportable quantity

HYDROGEN CHLORIDE: 5000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance No

Section 311 hazardous chemical Yes

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - New Jersey Community RTK (EHS Survey): Reportable threshold

HYDROGEN CHLORIDE 7647-01-0 500 LBS

US - Pennsylvania RTK - Hazardous Substances: Listed substance

HYDROGEN CHLORIDE 7647-01-0 Listed.

16. Other Information**Further information**

HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings

Health: 3*
Flammability: 0
Physical hazard: 1

NFPA ratings

Health: 3
Flammability: 0
Instability: 1

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Issue date

22-May-2009

This data sheet contains changes from the previous version in section(s):

This document has undergone significant changes and should be reviewed in its entirety.