

Material Safety Data Sheet**Section 1. Product and Company Identification****Product Name** Hydrochloric Acid 1.000N**Product Code** VW3202**Manufacturer** EMD Chemicals Inc.P.O. Box 70
480 Democrat Road
Gibbstown, NJ 08027
Prior to January 1, 2003 EMD Chemicals Inc. was
EM Industries, Inc. or EM Science, Division of
EM Industries, Inc.**Effective Date** 3/4/2003**For More Information Call**856-423-6300 Technical Service
Monday-Friday: 8:00 AM - 5:00 PM**In Case of Emergency Call**
800-424-9300 CHEMTREC
(USA)
613-996-6666 CANUTEC
(Canada)
24 Hours/Day; 7 Days/Week**Synonym** None.**Material Uses** Laboratory Reagent**Chemical Family** Mineral Acid solution**Section 2. Composition and Information on Ingredients**

Component	CAS #	% by Weight
Hydrochloric acid	7647-01-0	3
Water	7732-18-5	97

+ Section 3. Hazards Identification**Physical State and Appearance** Liquid.**Emergency Overview**WARNING !
CAUSES EYE BURNS.
MAY CAUSE RESPIRATORY TRACT AND EYE BURNS.
HARMFUL IF INHALED OR SWALLOWED.
CAUSES RESPIRATORY TRACT AND EYE IRRITATION.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: LUNGS, RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA.
MAY CAUSE BIRTH DEFECTS BASED ON ANIMAL DATA.**Routes of Entry**

Dermal contact. Eye contact. Inhalation. Ingestion.

Potential Acute Health Effects**Eyes** Hazardous in case of eye contact (corrosive, irritant). Causes eye burns. Inflammation of the eye is characterized by redness, watering, and itching.**Skin** Hazardous in case of skin contact (corrosive). Skin contact may produce burns.**Inhalation** May be hazardous in case of inhalation (lung corrosive, lung irritant).**Ingestion** Hazardous in case of ingestion.**Potential Chronic Health Effects**

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Carcinogenic Effects This material is not known to cause cancer in animals or humans.

Additional information See Toxicological Information (section 11)

Medical Conditions Aggravated by Overexposure: Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.**Section 4. First Aid Measures****Eye Contact** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.**Skin Contact** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.**Inhalation** If inhaled, 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 unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.**+ Section 5. Fire Fighting Measures****Flammability of the Product** May be combustible at high temperature.**Auto-ignition Temperature** Not available.**Flash Points** Not available.**Flammable Limits** Not available.**Products of Combustion** Not applicable.**Fire Hazards in Presence of Various Substances** Not available.**Explosion Hazards in Presence of Various Substances** Risks of explosion of the product in presence of static discharge: No.**Explosion Hazards in Presence of Various Substances** Risks of explosion of the product in presence of mechanical impact: No.**Fire Fighting Media** SMALL FIRE: Use DRY chemical powder.**and Instructions** LARGE FIRE: Use water spray, fog or foam. Do not use water jet.**Protective Clothing (Fire)** Be sure to use an approved/certified respirator or equivalent.**Special Remarks on Fire Hazards** Flammable hydrogen gas may be produced on prolonged contact with metals such as aluminum, tin, lead and zinc. (Hydrochloric acid)**Special Remarks on Explosion Hazards** Not available.

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+ Section 6. Accidental Release Measures**Small Spill and Leak** Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: **Neutralize the residue with a dilute solution of sodium carbonate.****Large Spill and Leak** Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. **Neutralize the residue with a dilute solution of sodium carbonate.** Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.**Spill Kit Information** The following EM SCIENCE SpillSolv (TM) absorbent is recommended for this product:
SX1310 Acid Treatment Kit**Section 7. Handling and Storage****Handling** Do not ingest. Do not breathe vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.**Storage** Keep container tightly closed. Keep container in a cool, well-ventilated area.**Section 8. Exposure Controls/Personal Protection****Engineering Controls** Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.**Personal Protection****Eyes** Face shield.**Body** Full suit.**Respiratory** Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.**Hands** Gloves.**Feet** No special recommendations.**Protective Clothing (Pictograms)****Personal Protection in Case of a Large Spill** Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.**Product Name**

Hydrochloric acid

Exposure Limits**BAUA (Germany, 1997).**Spitzenbegrenzung: 8 mg/m³TWA: 8 mg/m³ 8 hour(s).**DK-Arbejdstylnet (Denmark, 1996).**Loftværdi: 7 mg/m³

Loftværdi: 5 ppm

GV: 7 mg/m³ 8 hour(s).

GV: 5 ppm 8 hour(s).

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80/1107/EEC (Europe, 1996).STEL: 10 mg/m³ 15 minute(s).

STEL: 15 ppm 15 minute(s).

TWA: 5 mg/m³ 8 hour(s).

TWA: 8 ppm 8 hour(s).

EH40-OES (United Kingdom (UK), 1997).STEL: 8 mg/m³ 15 minute(s).

STEL: 5 ppm 15 minute(s).

TWA: 2 mg/m³ 8 hour(s).

TWA: 1 ppm 8 hour(s).

ACGIH (United States, 1994).CEIL: 7.5 mg/m³

CEIL: 5 ppm

NIOSH REL (United States, 1994).CEIL: 7 mg/m³

CEIL: 5 ppm

OSHA Final Rule (United States, 1989).CEIL: 7 mg/m³

CEIL: 5 ppm

Water Not available.**Section 9. Physical and Chemical Properties****Odor** mild Hydrogen chloride odour**Color** Clear. Colorless.**Physical State and Appearance** Liquid.**Molecular Weight** Not applicable.**Molecular Formula** Not applicable.**pH****Boiling/Condensation Point** The lowest known value is 99.9°C (211.8°F) (Water). Weighted average: 100.2°C (212.4°F)**Melting/Freezing Point** May start to solidify at -0.1°C (31.8°F) based on data for: Water.

Weighted average: -2.32°C (27.8°F)

Critical Temperature The lowest known value is 51.5°C (124.7°F) (Hydrochloric acid).**Specific Gravity** The only known value is 1.2 (Water = 1) (Hydrochloric acid).**Vapor Pressure** The highest known value is 21.3 kPa (160 mmHg) (@ 20°C) (Hydrochloric acid).**Vapor Density** The highest known value is >1 (Air = 1) (Hydrochloric acid).**Odor Threshold** Not available.**Evaporation Rate** 0.36 (Water) compared to(n-Butyl Acetate = 1)**LogKow** Not available.**Solubility** Soluble in water.**+ Section 10. Stability and Reactivity****Stability and Reactivity** The product is stable.**Conditions of Instability** Not available.**Incompatibility with** Highly reactive with organic materials, metals, alkalis.

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Hydrochloric Acid 1.000N

Various Substances

Rem/Incompatibility Incompatible with Strong Bases Avoid excessive heat. Reacts with most metals to produce flammable H2 gas. May initiate the polymerization of organic oxides and other monomers.

Hazardous Decomposition Products Hydrogen Chloride (HCl)

Hazardous Polymerization Will not occur.

Section 11. Toxicological Information

RTECS Number:

Hydrochloric Acid MW4025000
Water ZC0110000

Toxicity Acute oral toxicity (LD50): 30000 mg/kg (Rabbit) (Calculated value for the mixture).
Acute toxicity of the vapor (LC50): 18467 ppm 4 hours (Mouse) (Calculated value for the mixture).

Chronic Effects on Humans Not available.

Acute Effects on Humans Hazardous in case of eye contact (corrosive, irritant). Causes eye burns. Inflammation of the eye is characterized by redness, watering, and itching. Hazardous in case of skin contact (corrosive). Skin contact may produce burns. May be hazardous in case of inhalation (lung corrosive, lung irritant). Hazardous in case of ingestion.

Synergetic Products (Toxicologically) Not available.

Irritancy Draize Test: Not available.

Sensitization Slightly hazardous in case of inhalation (lung sensitizer).

Carcinogenic Effects This material is not known to cause cancer in animals or humans.

Toxicity to Reproductive System Not available.

Teratogenic Effects Not available.

Mutagenic Effects Not available.

Section 12. Ecological Information

Ecotoxicity Not available.

BOD5 and COD Not available.

Toxicity of the Products of Biodegradation The products of degradation are as toxic as the product itself.

+ Section 13. Disposal Considerations

EPA Waste Number D002

Treatment Specified technology – Neutralize to pH 6–9. Contact your local permitted waste disposal site (TSD) for permissible treatments sites. ALWAYS CONTACT PERMITTED WASTE DISPOSER (TSD) TO

Hydrochloric Acid 1.000N

ASSURE COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND FEDERAL REGULATIONS.

Section 14. Transport Information

DOT Classification Proper Shipping Name: HYDROCHLORIC ACID SOLUTION
Hazard Class: 8
UN number: UN1789
Packing Group: II
RQ: Not applicable.

TDG Classification Not available.

IMO/MDG Classification Not available.

ICAO/IATA Classification Not available.

Section 15. Regulatory Information

U.S. Federal Regulations TSCA 8(b) inventory: Hydrochloric Acid 1.000N

SARA 302/304/311/312 extremely hazardous substances: Hydrochloric acid
SARA 302/304 emergency planning and notification: Hydrochloric acid
SARA 302/304/311/312 hazardous chemicals: Hydrochloric acid
SARA 311/312 MSDS distribution – chemical inventory – hazard identification: Hydrochloric acid: Sudden Release of Pressure, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard
SARA 313 toxic chemical notification and release reporting: Hydrochloric acid 3%
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: Hydrochloric acid
Clean air act (CAA) 112 accidental release prevention: Hydrochloric acid
Clean air act (CAA) 112 regulated flammable substances: No products were found.
Clean air act (CAA) 112 regulated toxic substances: Hydrochloric acid

WHMIS (Canada) CLASS E: Corrosive liquid.
CEPA DSL: Hydrochloric acid; Water
This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information.

International Regulations

EINECS Hydrochloric acid 231–595–7
Water 231–791–2

DSCL (EEC) R36/38– Irritating to eyes and skin.

International Lists Australia (NICNAS): Hydrochloric acid; Water

Japan (MITI): Hydrochloric acid; Water

Korea (TCCL): Hydrochloric acid; Water

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State Regulations Philippines (RA6969): Hydrochloric acid; Water
China: No products were found.
Pennsylvania RTK: Hydrochloric acid: (environmental hazard, generic environmental hazard)
Massachusetts RTK: Hydrochloric acid
New Jersey: Hydrochloric Acid 1.000N
California prop. 65: No products were found.

Section 16. Other Information

National Fire Protection Association (U.S.A.) 0 0
Health²

Fire Hazard

Reactivity

Specific Hazard

Changed Since Last Revision +

Notice to Reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.