



# Material Safety Data Sheet

## Section 1. Product and Company Identification

<b>Product Name</b>	Hydrochloric Acid, 37%, Extra Pure	<b>Product Code</b>	1.00314
<b>Manufacturer</b>	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.	<b>Effective Date</b>	6/2/2004
		<b>Print Date</b>	6/2/2004

### 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** MURIATIC ACID

**Material Uses** Analytical reagent.

**Chemical Family** Inorganic Acid.

## + Section 2. Composition and Information on Ingredients

Component	CAS #	% by Weight
Hydrochloric Acid	7647-01-0	100

The 100% indicates this product is a concentrated acid. Assay (HCl) value is approximately 36-38%.

## Section 3. Hazards Identification

**Physical State and Appearance** Liquid. (Colorless.)

**Emergency Overview** DANGER! POISON!  
MAY BE FATAL IF INHALED OR SWALLOWED.  
CAUSES SEVERE EYE AND SKIN BURNS.  
CAUSES SEVERE RESPIRATORY TRACT IRRITATION.  
CAUSES DAMAGE TO THE FOLLOWING ORGANS: LUNGS, RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA.

**Routes of Entry** Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

### Potential Acute Health Effects

**Eyes** Extremely hazardous in case of eye contact (corrosive). Causes severe eye burns.

**Skin** Extremely hazardous in case of skin contact (corrosive). Skin contact produces severe burns.

**Inhalation** Extremely hazardous in case of inhalation (lung irritant). May be fatal if inhaled.

**Ingestion** Extremely hazardous in case of ingestion. May be fatal if swallowed.

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**Potential Chronic Health Effects**

*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

<b>Eye Contact</b>	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.
<b>Skin Contact</b>	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
<b>Inhalation</b>	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
<b>Ingestion</b>	DO NOT induce vomiting. If affected person is conscious give plenty of water to drink. Get medical attention immediately.

### Section 5. Fire Fighting Measures

<b>Flammability of the Product</b>	May be combustible at high temperature.
<b>Auto-ignition Temperature</b>	Not available.
<b>Flash Points</b>	Not available.
<b>Flammable Limits</b>	Not available.
<b>Products of Combustion</b>	These products are carbon oxides (CO, CO <sub>2</sub> ), halogenated compounds.
<b>Fire Hazards in Presence of Various Substances</b>	Not available.
<b>Explosion Hazards in Presence of Various Substances</b>	Risks of explosion of the product in presence of static discharge: No. Risks of explosion of the product in presence of mechanical impact: No.
<b>Fire Fighting Media and Instructions</b>	Use water spray or fog.
<b>Protective Clothing (Fire)</b>	Wear MSHA/NIOSH approved self-contained breathing apparatus or equivalent and full protective gear.
<b>Special Remarks on Fire Hazards</b>	Flammable hydrogen gas may be produced on prolonged contact with metals such as aluminum, tin, lead and zinc.
<b>Special Remarks on Explosion Hazards</b>	Not available.

**Section 6. Accidental Release Measures**

<b>Small Spill and Leak</b>	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
<b>Large Spill and Leak</b>	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. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.
<b>Spill Kit Information</b>	The following EMD Chemicals Inc. SpillSolv® absorbent is recommended for this product: SX1310 Acid Treatment Kit

**Section 7. Handling and Storage**

<b>Handling</b>	Do not ingest. Do not breathe vapor or mist. Keep container closed. Use only with adequate ventilation. Do not get in eyes, on skin, or on clothing.
<b>Storage</b>	Keep container in a cool, well-ventilated area.

**+ Section 8. Exposure Controls/Personal Protection**

<b>Engineering Controls</b>	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.
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**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** Boots.**Protective Clothing (Pictograms)**

<b>Personal Protection in Case of a Large Spill</b>	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.
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**Product Name**

Hydrochloric Acid

The 100% indicates this product is a concentrated acid. Assay (HCl) value is approximately 36-38%.

**Exposure Limits****EH40-OES (United Kingdom (UK), 1997).**STEL: 8 mg/m<sup>3</sup> 15 minute(s).

STEL: 5 ppm 15 minute(s).

TWA: 2 mg/m<sup>3</sup> 8 hour(s).

TWA: 1 ppm 8 hour(s).

**BMWA\_MAK (Austria, 2001).**Spitzenbegrenzung: 16 mg/m<sup>3</sup> 8 times per shift, 5 minute(s).

Spitzenbegrenzung: 10 ppm 8 times per shift, 5 minute(s).

TWA: 8 mg/m<sup>3</sup> 8 hour(s).

TWA: 5 ppm 8 hour(s).

**NOHSC (Australia, 2002). Notes: Documentation for the substances with this footnote can be found in the 5th Edition of the ACGIH**

documentation of the threshold limit values and biological exposure indices.<sup>1</sup> For all other substances with 'H' in Column 7 the documentation can be found in the 6th Edition of the ACGIH documentation of the threshold limit values and biological exposure indices.<sup>2</sup>

AMP: 7.5 mg/m<sup>3</sup> 15 minute(s).

AMP: 5 ppm 15 minute(s).

**Lijst Grenswaarden (Belgium, 2002).**

VCD: 15 mg/m<sup>3</sup> 15 minute(s).

VCD: 10 ppm 15 minute(s).

VL: 8 mg/m<sup>3</sup> 8 hour(s).

VL: 5 ppm 8 hour(s).

**SUVA (Switzerland, 2001).**

Kurzzeitsgrenzwerte: 7.5 mg/m<sup>3</sup> 15 minute(s).

Kurzzeitsgrenzwerte: 5 ppm 15 minute(s).

MAK: 7.5 mg/m<sup>3</sup> 8 hour(s).

MAK: 5 ppm 8 hour(s).

**178/2001 (CZ, 2001).**

STEL: 15 mg/m<sup>3</sup> 10 minute(s).

STEL: 10.185 ppm 10 minute(s).

TWA: 8 mg/m<sup>3</sup> 8 hour(s).

TWA: 5.432 ppm 8 hour(s).

**MAK-Werte Liste (Germany, 2000).**

Spitzenbegrenzung: 7.6 mg/m<sup>3</sup> 15 minute(s).

Spitzenbegrenzung: 5 ML/M3 15 minute(s).

TWA: 7.6 mg/m<sup>3</sup> 8 hour(s).

TWA: 5 ML/M3 8 hour(s).

**TRGS900 MAK (Germany, 2002).**

Spitzenbegrenzung: 8 mg/m<sup>3</sup>

TWA: 8 mg/m<sup>3</sup> 8 hour(s).

**Arbejdstilsynet (Denmark, 2000).**

Loftværdi: 7 mg/m<sup>3</sup>

Loftværdi: 5 ppm

GV: 7 mg/m<sup>3</sup> 8 hour(s).

GV: 5 ppm 8 hour(s).

**INSHT (Spain, 2001).**

STEL: 15 mg/m<sup>3</sup> 15 minute(s).

STEL: 10 ppm 15 minute(s).

TWA: 7.6 mg/m<sup>3</sup> 8 hour(s).

TWA: 5 ppm 8 hour(s).

**EU OEL (Europe, 2000). Notes: Indicative**

STEL: 15 mg/m<sup>3</sup> 15 minute(s).

STEL: 10 ppm 15 minute(s).

TWA: 8 mg/m<sup>3</sup> 8 hour(s).

TWA: 5 ppm 8 hour(s).

**Työterveyslaitos (Finland, 2002).**

STEL: 7.6 mg/m<sup>3</sup> 15 minute(s).

STEL: 5 ppm 15 minute(s).

**INRS (France, 1999). Notes: Advisory**

VLE: 7.5 mg/m<sup>3</sup> 15 minute(s).

VLE: 5 ppm 15 minute(s).

**NAOSH (Ireland, 2002).**

STEL: 14 mg/m<sup>3</sup> 15 minute(s).

STEL: 10 ppm 15 minute(s).

OEL: 7 mg/m<sup>3</sup> 8 hour(s).

OEL: 5 ppm 8 hour(s).

**JSOH (Japan, 1996).**

CEIL: 7.5 mg/m<sup>3</sup>

CEIL: 5 ppm

**Ministry of Labor (KR, 1997).**CEIL: 7 mg/m<sup>3</sup>

CEIL: 5 ppm

**Nationale MAC-lijst (Netherlands, 2003). Notes: Administrative**TGG 15 min: 15 mg/m<sup>3</sup> 15 minute(s).

TGG 15 min: 10 ppm 15 minute(s).

TGG 8 uur: 8 mg/m<sup>3</sup> 8 hour(s).

TGG 8 uur: 5 ppm 8 hour(s).

**Arbeidstilsynet (Norway, 2001).**Takverdi: 7 mg/m<sup>3</sup>

Takverdi: 5 ppm

AN: 7 mg/m<sup>3</sup> 8 hour(s).

AN: 5 ppm 8 hour(s).

**NZ OSH (NZ, 1994).**CEIL: 7.5 mg/m<sup>3</sup>

CEIL: 5 ppm

**AFS (Sweden, 2000).**TGV: 8 mg/m<sup>3</sup>

TGV: 5 ppm

KTV: 8 mg/m<sup>3</sup> 15 minute(s).

KTV: 5 ppm 15 minute(s).

**ACGIH TLV (United States, 2003).**

CEIL: 2 ppm

**NIOSH REL (United States, 2001).**CEIL: 7 mg/m<sup>3</sup>

CEIL: 5 ppm

**OSHA PEL (United States, 1974).**CEIL: 7 mg/m<sup>3</sup>

CEIL: 5 ppm

**OSHA PEL 1989 (United States, 1989).**CEIL: 7 mg/m<sup>3</sup>

CEIL: 5 ppm

**Section 9. Physical and Chemical Properties**

<b>Odor</b>	Pungent.
<b>Color</b>	Clear. Colorless.
<b>Physical State and Appearance</b>	Liquid. (Colorless.)
<b>Molecular Weight</b>	36.46 g/mole
<b>Molecular Formula</b>	Cl-H
<b>pH</b>	Not available.
<b>Boiling/Condensation Point</b>	110°C (230°F)
<b>Melting/Freezing Point</b>	-74°C (-101.2°F)
<b>Critical Temperature</b>	51.5°C (124.7°F)
<b>Specific Gravity</b>	1.2 (Water = 1)
<b>Vapor Pressure</b>	21.3 kPa (160 mmHg) (@ 20°C)
<b>Vapor Density</b>	>1 (Air = 1)
<b>Odor Threshold</b>	Not available.

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Evaporation Rate >1

LogK<sub>ow</sub> 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 Various Substances Reactive with metals, alkalis.

Rem/Incompatibility Not available.

Hazardous Decomposition Products These products are halogenated compounds.

Hazardous Polymerization Will not occur.

### Section 11. Toxicological Information

RTECS Number: Hydrochloric Acid MW4025000

Toxicity Acute oral toxicity (LD<sub>50</sub>): 900 mg/kg [Rabbit].  
Acute toxicity of the vapor (LC<sub>50</sub>): 1108 ppm 1 hour(s) [Mouse].

Chronic Effects on Humans Not available.

Acute Effects on Humans Extremely hazardous in case of eye contact (corrosive). Causes severe eye burns. Extremely hazardous in case of skin contact (corrosive). Skin contact produces severe burns. Extremely hazardous in case of inhalation (lung irritant). May be fatal if inhaled. Extremely hazardous in case of ingestion. May be fatal if swallowed.

Synergetic Products (Toxicologically) Not available.

Irritancy Draize Test (Rabbit):  
Eyes: 5mg/30s. Reaction: Mild.  
Eye: 100 mg/24h moderate

Sensitization Not available.

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

Toxicity to Reproductive System Tests on laboratory animals for reproductive effects are cited in Registry of Toxic Effects on Chemical Substances (RTECS).

Teratogenic Effects Not available.

Mutagenic Effects Tests on laboratory animals for mutagenic effects are cited in Registry of Toxic Effects of Chemical Substances (RTECS).

**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 treatment sites. Always contact a permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal Regulations.

**Section 14. Transport Information**

**DOT Classification** Proper Shipping Name: HYDROCHLORIC ACID  
Hazard Class: 8  
UN number: UN1789  
Packing Group: II  
RQ: 5000 lbs. (2268 kg)

**TDG Classification** Not available.

**IMO/IMDG Classification** Proper Shipping Name: HYDROCHLORIC ACID  
Hazard Class: 8  
UN number: UN1789  
Packing Group: II  
RQ: Not applicable.

**ICAO/IATA Classification** Not available.

**Section 15. Regulatory Information**

**U.S. Federal Regulations** TSCA 8(b) inventory: HYDROCHLORIC ACID  
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  
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 D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).  
CLASS E: Corrosive liquid.

CEPA DSL: HYDROCHLORIC ACID

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**

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**EINECS** HYDROCHLORIC ACID 231-595-7

**DSCL (EEC)** R35- Causes severe burns.

**International Lists** Australia (NICNAS): Hydrochloric Acid

China: Hydrochloric Acid

Germany water class: Hydrochloric Acid

Japan (MITI): Hydrochloric Acid

Korea (TCCL): Hydrochloric Acid

Philippines (RA6969): Hydrochloric Acid

China: Hydrochloric Acid

**State Regulations**

Pennsylvania RTK: HYDROCHLORIC ACID: (environmental hazard, generic environmental hazard)

Massachusetts RTK: HYDROCHLORIC ACID

New Jersey: HYDROCHLORIC ACID

California prop. 65: No products were found.

**Section 16. Other Information**

**National Fire  
Protection  
Association  
(U.S.A.)**



**Other Special Considerations**

Section 2 lists this product as 100% which indicates that it is a concentrated acid.

**Changed Since Last Revision**

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**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.*