



15185 Main Street  
Lemont, IL 60439  
630-257-3900

# Hydrochloric Acid

## Material Safety Data Sheet

### SECTION 1: PRODUCT IDENTIFICATION

<u>PRODUCT NAME</u> Hydrochloric Acid	<u>ID NUMBER</u> UN 1789	<u>REVISION DATE</u> April 1, 2002
<u>MOLECULAR WEIGHT</u> 36.46	<u>CHEMICAL FAMILY</u> Inorganic Acid	<u>HAZARD CLASS</u> 8 Corrosive Liquid
<u>CAS NUMBER</u> 7647-01-0	<u>CHEMICAL FORMULA</u> Hcl	<u>CHEMICAL NAME</u> Hydrogen Chloride - Aqueous Solution. Synonym - Muriatic Acid

#### EMERGENCY NUMBERS

24 HOUR EMERGENCY NUMBER: CHEMTREC 1-800-424-9300  
FOR PRODUCT INFORMATION: LEMONT, IL. 1-630-257-3900

### SECTION 2: PHYSICAL DATA & INGREDIENTS

<u>APPEARANCE</u> Colorless to slightly yellow	<u>ODOR</u> Sharp, pungent, and irritating	<u>VAPOR PRESSURE</u> 78mm Hg. @ 68 °F ( 20 °C)
<u>BOILING POINT</u> 142° F - 230° F ( 61° - 110° C)	<u>SPECIFIC GRAVITY</u> Approx. 1.18 @ 68 ° F ( 20° C)	<u>SOLUBILITY</u> Complete in water
<u>VAPOR DENSITY ( Air = 1)</u> 1.27	<u>INGREDIENTS</u> MATERIALS Hydrogen Chloride Water	<u>PERCENT</u> 30 - 36% 64 - 70%

### SECTION 3: FIRE & EXPLOSION INFORMATION

#### FIRE

Not Flammable  
Flammable limits in air ( % by volume)      LEL: N/A      UEL: N/A

#### FIRE EXTINGUISHING MEDIA

Use any means suitable for extinguishing surrounding fire.

#### SPECIAL FIRE FIGHTING PROCEDURES

No fire hazards exist directly from Hydrochloric Acid. However, when Hydrochloric Acid comes in contact with common

metals, it can generate hydrogen gas. In sufficient concentrations hydrogen can form explosive mixtures in air. Firefighters exposed to Hydrochloric Acid vapors should wear a self-contained breathing apparatus and full protective acid resistant clothing. Water spray should be used to cool fire exposed containers and to control vapors.

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## **SECTION 4: REACTIVITY DATA**

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### **STABILITY**

Stable under ordinary conditions of use and storage.

### **HAZARDOUS DECOMPOSITION PRODUCTS**

Contact with common metals produces hydrogen which may form explosive mixtures with air. Thermal decomposition may release corrosive hydrogen chloride gas. Contact with strong oxidizers may produce chlorine gas.

### **HAZARDOUS POLYMERIZATION**

This substance does not polymerize.

### **INCOMPATIBILITY: ( SPECIFIC MATERIALS TO AVOID)**

Oxidizers, metals and caustics.

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## **SECTION 5: LEAK, SPILL, DISPOSAL INFORMATION**

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Evacuate area and deny entry by unauthorized personnel. Do not breathe vapors and keep upwind, For large spills, contain and pump into tank which has been constructed for Hydrochloric Acid service. Full acid resistant suits and self-contained breathing apparatus should be worn during emergency operations. Knock down vapors with water spray or water fog. Water used to knock down vapors may become corrosive and should be contained properly for later disposal. Neutralize spill with lime, sodium bicarbonate or crushed limestone. Since neutralization with these bases will generate heat ( exothermic), the reaction can be violent. The acid should be diluted and cooled before attempting to neutralize. DO NOT FLUSH TO SEWER BEFORE NEUTRALIZING AND CONSULTING FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS. For small spills, take up with sand or other absorbent material and react with dry alkali ( soda ash or lime). Place into container for later disposal.

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## **SECTION 6: HEALTH HAZARD DATA**

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IS CHEMICAL LISTED AS A CARCINOGEN OR POTENTIAL CARCINOGEN?

NTP - NO      IARC- NO      OSHA - NO

MEDICAL CONDITION GENERALLY AGGRAVATED BY EXPOSURE:

Asthma, other respiratory disorders( bronchitis, emphysema), skin allergies and eczema.

PERMISSIBLE EXPOSURE LIMIT:

OSHA : 5 ppm Ceiling

### **ACUTE TOXICITY**

#### **PRIMARY ROUTES OF EXPOSURE**

Inhalation, Skin.

#### **INHALATION**

Hydrogen chloride gas, mist and vapor can cause irritation of respiratory tract, with burning, choking, coughing, headaches and rapid heartbeat. Levels of 10 to 35 ppm can cause irritation of throat and 50-100 ppm is nearly unbearable for 1 hour. Inflammation, destruction of nasal passage and breathing difficulties can occur with higher concentrations and may be delayed in onset. 1000-2000 ppm can be fatal.

#### **SKIN**

Liquid hydrogen chloride or concentrated vapors can rapidly cause burning of skin. Repeated or prolonged contact with dilute solutions, and concentrated vapors, can cause irritations and dermatitis.

**EYE**

Liquid or concentrated vapors can cause eye irritations, severe burns and permanent damage including blindness.

**INGESTION**

Can cause severe burns of mouth, esophagus and stomach. Nausea, pain and vomiting frequently occur. Depending upon amounts swallowed, holes in the intestinal tract, kidney inflammation, shock and death can occur.

**CHRONIC TOXICITY**

Exposures of 100 ppm for 6 hours a day for 50 days caused only slight unrest and irritation to the eyes and nose of rabbits, guinea pigs and pigeons. The hemoglobin content of the blood was also slightly diminished. Monkeys receiving twenty exposures of 33 ppm for 6 hours did not display any adverse effects. Higher exposures ( unspecified) have caused weight loss which paralleled the severity of exposure. Baboons exposed to 500, 5,000, or 10,000 ppm for 15 minutes did not have significant alterations in any pulmonary function parameters 3 days or 3 months after exposure. In humans, long term over exposures have been associated with erosion of the teeth.

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## **SECTION 7: EMERGENCY & FIRST AID PROCEDURES**

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**INHALATION**

Move person to fresh air. If breathing stops, administer artificial respiration. Get medical attention immediately.

**SKIN**

Remove contaminated clothing and wash skin thoroughly for a minimum of 15 minutes with large quantities of water ( preferably a safety shower). Get medical attention immediately.

**EYE**

Wash eyes immediately with large amounts of water ( preferable eye wash fountain), lifting the upper and lower eyelids and rotating eyeball. Continue washing for a minimum of 15 minutes. Get medical attention immediately.

**INGESTION**

If conscious, give large quantities of water. Do not induce vomiting. Get medical attention immediately.

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## **SECTION 8: OCCUPATIONAL CONTROL MEASURES**

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**EYE PROTECTION REQUIREMENTS**

Splash-proof safety goggles and a full face shield to prevent contact.

**SKIN PROTECTION REQUIREMENTS**

Rubber or neoprene gloves and boots, and acid resistant coats or overalls appropriate for work conditions. Employees should wash their hands and face before eating, drinking or using tobacco.

**VENTILATION REQUIREMENTS**

Provide local exhaust or process enclosure ventilation to maintain levels below the recommended exposure limit.

**RESPIRATOR REQUIREMENTS**

Full face NIOSH/MSHA approved respirator for acid gases. Do not exceed the working limits of the respirator.

**ADDITIONAL PROTECTIVE MEASURES**

Eye wash and safety showers should be immediately available. Full acid suits and NIOSH/MSHA approved self contained breathing apparatus should be readily available to handle major spills.

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## SECTION 9: HANDLING & STORAGE

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### STORAGE TEMPERATURE ( MIN / MAX)

Ambient / Ambient

### SHELF LIFE

Unlimited in tightly closed containers.

### SPECIAL SENSITIVITY

None known.

### HANDLING / STORAGE PRECAUTIONS

Keep container tightly closed when not in use. Hydrochloric Acid should be handled and stored in equipment suitable designed for acid service. Store in a dry, cool place in original or similar waterproof container.

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## SECTION 10: REGULATORY INFORMATION

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### DOT HAZARD CLASS

8

### DOT PLACARD REQUIRED

Corrosive - UN 1789

### DOT LABEL

Corrosive-8

Reportable quantity - 5000 lbs - 2270 kg.

### NFPA / HMIS RATINGS

Health - 3

Flammability - 0

Reactivity - 0

### OSHA STATUS

This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

### CERCLA REPORTABLE QUANTITY

5000 Lbs - 2270 kg for Hydrochloric Acid

### SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCE

None

### SECTION 311-312 HAZARD CATEGORY

Immediate Health Hazard

### SECTION 313 TOXIC CHEMICALS

Hydrochloric Acid, CAS# 7647-01-0, Approx. 36%

### TSCA STATUS

On TSCA inventory

### RCRA STATUS

When discarded in its purchased form, this product meets the criteria of corrosivity, and should be managed as a hazardous waste ( EPA Hazardous Waste Number D002). The information contained herein is provided in good faith and is believed to be correct as of the date hereof. However, K.A. Steel Chemicals makes no representation as to the comprehensiveness or accuracy of the information. It is expected that individuals receiving information will exercise their independent judgement in determining its appropriateness for a particular purpose. Accordingly, K.A. Steel Chemicals will not be responsible for damages of any kind resulting from the use of or reliance upon such information. No representation, or warranties, either express or implied, of merchantability fitness for a particular purpose or of any nature are made hereunder with respect to the information set forth herein or to the product to which the information refers.