

# MATERIAL SAFETY DATA SHEET

July 1, 1986

## SECTION I NAME

Product	HYDROCHLORIC ACID SOLUTIONS	CHEMTREC 800-424-9300	Health	3
Chemical Synonyms	Dilutions: *1.5, 3.0, 5.0, 6.0, 12.0%	Day 716-226-6177 Night 716-334-4222	Fire	0
Formula	HCl	NFPA HAZARD RATING	Reactivity	2
Unit(s) Size	500 mL, 1 Liter, 4 Liters.	LEAST SLIGHT MODERATE HIGH EXTREME		
C.A.S. No.	7647-01-0	0 1 2 3 4		

## SECTION II HAZARDOUS INGREDIENTS OF MIXTURES

Principal Hazardous Component(s)	%	TLV Units
Hydrochloric Acid Solutions		See Section V
1.5% Dilution *0.54% HCl		
3.0% = 1.08, 5.0% = 1.80, 6.0% = 2.16%, 12% = 4.32%		

WARNING! MAY BE HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO MUCOUS MEMBRANES.

## SECTION III PHYSICAL DATA

Melting Point (°F)	Freezing Point 0°C	Specific Gravity (H <sub>2</sub> O = 1)	Approx. 1.0
Boiling Point (°F)	Approx. 100°C (212°F)	Percent Volatile by Volume (%)	100%
Vapor Pressure (mm Hg)	0.7 (water)	Evaporation Rate = 1)	Greater than 1
Vapor Density (Air = 1)	14 (water)		
Solubility in Water	Complete		
Appearance and Odor	Clear, colorless liquid; may have acrid odor.		

## SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Non-flammable (NA)	Flammable Limits in Air NA	Lower	Upper
Extinguisher Media				

Use any media suitable for extinguishing supporting fire.

## SPECIAL FIREFIGHTING PROCEDURES

In fire conditions, wear MISH-approved, self-contained breathing apparatus and full protective clothing.

## UNUSUAL FIRE AND EXPLOSION HAZARDS

Non-combustible, but contact with common metals produce hydrogen which may form explosive mixtures with air.

\* These are percentage dilutions of a concentrated hydrochloric acid solution containing 36% hydrochloric acid.

D.O.F. CORROSIVE MATERIAL.



**FREY SCIENTIFIC**

905 HICKORY LANE MANSFIELD OHIO 44905

MSDS No.  
Effective Date

Approved by U.S. Department of Labor "essentially similar" to form OSHA-20

## SECTION V HEALTH HAZARD DATA

### Threshold Limited Value

Hydrogen chloride as gas or fume: TWA Ceiling Limits.  
TWA: 5 ppm; 7 mg/m<sup>3</sup> (AIR). (ACGIH 1983-84).

### Effects of Overexposure

Hydrochloric acid solutions at these dilutions are not skin or eye irritant, but may be irritant to mucous membranes.  
INGESTION: May be harmful if swallowed.

### Emergency and First Aid Procedures

EYES: In case of contact, flush eyes thoroughly with water for at least 15 minutes. If irritation develops or persists get medical attention.  
SKIN: Flush with water.  
INGESTION: If swallowed, if conscious, give one or two glasses of water to drink and call physician.

## SECTION VI REACTIVITY DATA

Stability	Unstable	Conditions to Avoid	Excessive temperatures or heat.
Stable	X		

### Incompatibility (Materials to avoid)

Will react with most metals, alkalis, strong oxidants.

### Hazardous Decomposition Products

Hydrogen chloride gas may be evolved by heating. Hydrogen gas evolved by reaction with metals.

### Hazardous Polymerization

May Occur Will Not Occur X Not applicable.

## SECTION VII SPILL OR LEAK PROCEDURES

### Steps to be taken in case material is released or spilled

Carefully neutralize with sodium bicarbonate and flush to sewer with copious amounts of water.

### Waste Disposal Method

Carefully neutralize with sodium bicarbonate, soda ash, or lime and flush to sewer with copious amounts of water.

Discharge, treatment, or disposal may be subject to federal, state, or local laws.

## SECTION VIII SPECIAL PROTECTION INFORMATION

Respiration Protection None needed in normal laboratory handling. In risky conditions work in ventilation (Specify Type) hood or wear MISH-approved respirator.

Ventilation	Local Exhaust	Mechanical (General)	Special No.	Other No.
	None needed.	None needed.		

Protective Gloves	Rubber.	Eye Protection	Chemical safety glasses.
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Other Protective Equipment Sock, apron, eye wash station, goggles, ventilation hood, proper gloves.

## SECTION IX SPECIAL PRECAUTIONS

### Precautions to be Taken in Handling and Storing

Store in a cool place. Wash thoroughly after handling.

Keep container tightly closed when not in use.

### Other Precautions

Read label on container before using.

For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Rev. No.	No. 1	Date	11/2/87	Approved	Charles W. Secor	Chemical Safety Coordinator	CG
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