MATERIAL SAFETY DATA SHEET

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1. Substance Identity and Company Contact Information

SUBSTANCE: **HYDROCHLORIC ACID 22° BAUME or Less**

DISTRIBUTOR'S NAME: Vertex Chemical Corporation
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(314) 471-0500
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Web Site: www.vertexchemical.com

MANUFACTURER'S NAME: BASF Corporation Polymers Division
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Florham Park, NJ 07932

24 HOUR EMERGENCY TELEPHONE NUMBERS:

314-471-0500	VERTEX CHEMICAL CORPORATION
1-800-832-HELP	**BASF Hotline**
1-800-424-8802	NATIONAL EMERGENCY RESPONSE CENTER
1-800-424-9300	CHEMTREC – Call CHEMTREC **only** in the event of chemical emergencies involving a SPILL, LEAK, FIRE, EXPOSURE, or ACCIDENT involving chemicals.

TRADE NAME AND SYNONYMS: Hydrochloric Acid, HCl, Muriatic Acid

CAS # 7647-01-0 **FORMULA:** HCL in H_20 **CHEMICAL FAMILY:** Inorganic Acid **MOLECULAR WEIGHT:** 36.5

REVISION DATE: July 21, 2009

2. Chemical Composition and Data on Components

COMPONENT	CAS NO.	% by weight	EXPOSURE LIMITS, MG/M3			HAZARD
			OSHA PEL	ACGIH TLV	OTHER LIMIT	
Hydrogen Chloride, HCl	7647-01-0	15.0-36.9	5 ppm CEIL	2 ppm CEIL	N/A	CORROSIVE
Water	7732-18-5	balance	Not Established	Not Established	Not Established	None

3. Hazards Identification

NFPA RATING: Health - 3 Fire - 0 Reactivity – 0
HMIS® RATING: Health – 3 Flammable – 0 Physical Hazard - 0

Primary Routes Of Exposure: Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation (concentrations above 50 ppm will damage the upper respiratory tract). Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Signs and Symptoms of Over Exposure:

Inhalation	Sore throat, coughing, shortness of breath. Severe irritation of the upper respiratory tract. If inhaled deeply, edema of the lungs may occur. Inhalation effects usually limited to inflammation and occasionally ulceration of the nose, throat, and larynx. Vapor has such a sharp, penetrating odor that inhalation of toxic quantities is unlikely unless victim is trapped.
Eye Contact	Corrosive, burns, pain, blurred vision. If the acid is not quickly removed by thorough irrigation with water, there may be prolonged or permanent visual impairment or total loss of sight.
Skin Contact	Corrosive burns to all body tissues unless promptly washed off. Repeated skin contact with dilute solutions may lead to the development of dermatitis.
If Swallowed	Causes severe burns of mucous membranes of mouth, esophagus and stomach. The lips and mouth usually turn white, and later brown. There is pain in the throat and stomach, difficulty in swallowing, intense thirst, nausea and vomiting, followed by diarrhea and in severe cases, by collapse and unconsciousness.

Medical Conditions Generally Aggravated By Exposure: Upper respiratory disease, asthma, bronchitis, diseases of the skin.

Chronic Effects of Exposure: Chronic or prolonged exposure may be associated with changes in pulmonary function, laryngitis, glottal edema, chronic bronchitis, dermatitis, erosion of tooth enamel, conjunctivitis and upper respiratory tract irritation.

4. First Aid Measures

In Case Of Eye Contact	Immediately flush with plenty of water for at least 15 minutes. Flush with water for additional 15 minutes if physician has not arrived. Do not attempt to neutralize the acid with chemicals. Get immediate medical attention.
In Case Of Skin Contact	Immediately flush affected areas with water. Remove contaminated clothing under the shower and launder before reuse. Continue washing with water and soap - do not attempt to neutralize with chemical agents. Do not apply oils or ointments to burned area unless physician prescribes. Severe or extensive burns may be caused by hydrochloric acid producing shock symptoms (rapid pulse, sweating and collapse). In these cases keep the patient on his back and comfortably warm. Obtain immediate medical attention.
If Inhaled	Remove from contaminated atmosphere to fresh air. Keep in upright position. Provide oxygen. If breathing has ceased, start mouth-to-mouth artificial respiration. Get prompt medical attention.
If Swallowed	DO NOT INDUCE VOMITING. Rinse mouth with water, drink plenty of water, give Milk of Magnesia or lime water. Never give fluids if the victim is unconscious or having convulsions. Get prompt medical attention.
In the event of injury resulting from over-exposure	Remove the patient from source of contamination and apply the recommended first aid procedures. Respiration is of prime importance. If breathing has ceased, mouth-to-mouth artificial respiration should be performed. Never give anything by mouth to an unconscious person. Medical attention should be obtained as soon as possible after injury, even if the injury appears slight. The physician should be given a detailed account of the incident.

5. Fire-Fighting Measures

Flash Point: Not Flammable **Flammable Limits In Air, %:** Lower - N/A Upper - N/A

Extinguishing Media: This material is not combustible. Use extinguishing media appropriate for surrounding fire. The presence of HCl will not limit the choice of extinguishing media.

Special Fire Fighting Procedures: Use protective clothing suitable for acids and self-contained breathing apparatus. Water fog will be most effective for controlling HCl vapors. Keep containers cool. If this can be accomplished safely, move containers away from fire area.

Unusual Fire and Explosion Hazards: Flammable and explosive hydrogen gas may be generated by reaction with most metals. Hydrogen gas may cause fire or explosion in air.

6. Accidental Release Measures

Action To Take for Spills Or Leaks: Evacuate immediate area where concentrated fumes are present. Cleanup personnel must wear proper protective equipment (see Section 8. Exposure Controls and Personal Protection). Contain spills or leaks in plastic containers, dikes, ponds, or retention areas where spillage can be diluted cautiously with water and neutralized with soda ash or alkaline solutions and prevent run-off into ground and surface waters or into sewers. If spill occurs indoors, turn off heating and/or air conditioning systems, to prevent vapors from contaminating entire building. Consider recovery if proper equipment is available.

7. Handling and Storage

Handling and Storage: Store in compatible equipment (acid proof), provide ventilation, store away from alkaline material, oxidizing agents and base metals. Design and dike storage areas to contain any spillage to meet Federal, State and Local regulations. Keep metals away from storage area, or contact may cause hydrogen generation. Drum storage should be maintained below 120^{o}. Only trained personnel should handle this material. Someone should be in attendance throughout loading/unloading or transfer operation.

Consult Manufacturing Chemists Association Chemical Safety Data Sheet SD-39 for pertinent data.

Protective Clothing: Disposable plastic suits or rubber gear, rubber boots. Provide safety shower and eye wash stations in handling areas. Avoid body contact and inhalation of fumes. Maintain work area below P.E.L.

8. Exposure Controls and Personal Protection

Exposure Limits: Toxic; eye, skin and respiratory irritant. Inhalation of concentrations of about 1500 ppm in air are fatal in a few minutes. OSHA Health Hazard. CERCLA listed chemical. See REGULATORY INFORMATION Section for SARA-313 list.

Advice on system design: Provide local exhaust ventilation to control vapours/mists

Personal Protective Equipment

Eye Protection	Fitted chemical goggles or face shield and safety goggles.
Clothing	Rubber, latex, or plastic gloves, coveralls, hardhat, boots and rubber apron to avoid skin contact. Contaminated clothing or equipment should be cleaned after each use or disposed of.
Respiratory	Use NIOSH approved respirators equipped with acid canisters or self-contained breathing apparatus.
Ventilation	Provide to meet TLV requirements (ACGIH 19 TLV 7mg/m^3). Equipment must be engineered to prevent any condensation formed from dropping on workers. Exhaust systems should be discharged to absorption or neutralizing equipment.
Other	Safety showers should be near by. Rubber or neoprene acid suit, rubber safety shoes and "hard" hat. Protective clothing or equipment which becomes contaminated with HCL must be removed immediately and laundered before wearing again.

9. Physical and Chemical Properties

	HCL 10°	HCL 13°	HCL 20°	HCL 22°
Specific Gravity (Water=1.0)	1.075	1.0985	1.16-1.17	1.179
pH	Less than 0	Less than 0	1	Less than 1
Freeze Point, °C	N/A	N/A	-46°C	-30°C
Boiling Point, °C	79°C	79°C	84°C	55°C
Vapor Pressure (mmHg. at 20°C)	15	15	16-70	60 - 200
Decomposition Temp, ° C			1782°C	1782°C
Vapor Density (Air=1)	1.3			
Solubility in Water	Infinite			
Color/Appearance	Colorless to light yellow fuming liquid			
Odor	Pungent and suffocating			

10. Stability and Reactivity

Stability: Stable **Polymerization:** Will Not Occur

General Reactivity: Avoid heat sources, contact with metals, hypochlorites or alkalies, body contact. Reactions with metals can release flammable hydrogen gas. Corrosive to most metals; not an oxidizer.

Incompatibility (Materials to Avoid): Corrosives; base metals. Metaloxides, alkaline materials, amines, esters, and certain other organics cause exothermic reactions, possibly violent. Carbonates, cyanides, sulfides yield toxic gases. Water reactive materials such as sulfuric acid, oleum, and acetic anhydride cause exothermic reactions. Avoid hypochlorites, hydroxides, oxidizing materials, materials with pH over 7. Can oxidize to chlorine.

Hazardous Decomposition Products: Hydrogen chloride gas, explosive hydrogen gas, chlorine.

11. Toxicological Information

Carcinogenicity: Hydrochloric acid is not considered a carcinogen by IARC, NTP, or OSHA. Primary routes of entry: Inhalation (concentrations above 50 ppm will damage the upper respiratory tract), Eye and Skin Contact, and Ingestion. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases. See Section 3 – Hazards Identification.

12. Ecological Information

Environmental Fate and transport
Biodegradation Evaluation: Inorganic product which cannot be eliminated from water by biological purification processes.
Bioaccumulation: Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

13. Disposal Considerations

Disposal Methods: Disposal is contingent upon allowable salt concentration and pH in the effluent systems. Dilute and neutralize with controlled quantities of alkaline solution of soda ash. Neutralized waste must be disposed of in accordance with local, state and federal regulations.

Container Disposal: Unused material and empty containers must be disposed of in accordance with local, state and federal regulations.

14. Transport Information

US DOT 49 CFR 172.101:
ID Number: UN1789
Proper Shipping Name: Hydrochloric Acid Solution
Hazard Class or Division: 8 Corrosive Material
Packaging Group: PG II
RQ (Hydrochloric Acid)

15. Regulations

The following selected regulatory requirements may apply to this product. Not all such requirements are identified. Users of this product are solely responsible for compliance with all applicable federal, state and local regulations.

TSCA Inventory Status: Listed on inventory.

SARA - 313 Listed Chemicals: **CAS:** 7647-01-0 **Name:** Hydrochloric Acid

CERCLA Reportable Quantity: 5,000 pounds

SARA hazard categories (EPCRA 311/312): Chronic, Acute

OSHA hazard category: OSHA PEL established, ACGIH TLV established, Skin and/or eye irritant, Corrosive to skin and/or eyes, chronic target organ effects reported, acute target organ effects reported, toxic – inhalation.

State Regulatory Information: (By Component)

		NJ/PA/MA RTK
CAS: 7647-01-0	**NAME:** Hydrochloric Acid	Yes
CAS: 7732-18-5	**NAME:** Water	Yes

16. Other Information

Vertex Chemical Corporation ("Vertex") expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Vertex makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Vertex's control, and, therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes, and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

END OF MSDS.