SAFETY DATA SHEET

1. Identification of the Substance / Preparation and of the Company / Undertaking

Product Name: Hydrochloric Acid 20' FCC  
UN/ID No: UN-1789  
Synonyms: Muriatic Acid, Inhibited  
Formula: HCl  
Molecular Weight: 36.46

Company Name: Anderson Chemical Company; 325 S Davis Avenue; Litchfield, MN 55355  
(320-693-2477)

Emergency Telephone: CHEMTREC (US): 1-800-424-9300

2. Hazards Identification

<table>
<thead>
<tr>
<th>GHS - Classification</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Category 3</td>
</tr>
<tr>
<td>Acute toxicity - Inhalation (Gases)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Acute toxicity - Inhalation (Dusts/Mists)</td>
<td>Category 1</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 1A</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td>Category 1A</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Category 1</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure)</td>
<td>Category 1</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>Category 1</td>
</tr>
</tbody>
</table>

Signal Word: Danger

Hazard Statements:
• Toxic if swallowed
• Fatal if inhaled
• Causes severe skin burns and eye damage
• May cause allergy or asthma symptoms or breathing difficulties if inhaled
• Causes damage to organs
• Causes damage to organs through prolonged or repeated exposure
• Very toxic to aquatic life

Physical Hazards

| Corrosive to metals | Category 1 |
3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>EC No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>7647-01-0</td>
<td>31-32</td>
<td>231-595-7</td>
</tr>
</tbody>
</table>

4. First Aid Measures

General Advice: Immediate medical attention is required.

Eye Contact: Keep eye wide open while rinsing. Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelid, for at least 15 minutes. Do not rub affected area.

Skin Contact: Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
941 Hydrochloric Acid 20' FCC

Inhalation: Move to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. Immediate medical attention is required. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.

Note to Physicians: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

Self-protection of the First Aider: Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

5. Fire-fighting Measures

Flammable Properties: Not considered to be a fire hazard; Contact with metals may evolve flammable hydrogen gas

Explosive Properties: Not considered to be an explosion hazard

Suitable Extinguishing Media: Water spray (fog); Water; Neutralize with soda ash or slaked lime

Unsuitable Extinguishing Media: No information available

Specific Hazards Arising from the Chemical: The product causes burns of eyes, skin and mucous membranes; Thermal decomposition can lead to release of irritating and toxic gases and vapors; In the event of fire and/or explosion do not breathe fumes

Protective Equipment and Precautions for Firefighters: In the event of a fire, wear full protective clothing and MSHA/NIOSH (approved or equivalent) self-contained breathing apparatus with full facepiece operated in the pressure-demand or other positive pressure mode; Structural firefighter’s protective clothing is ineffective for fires involving this material; Stay away from ends of tanks; Cool containers with flooding quantities of water until well after fire is out

6. Accidental Release Measures

Personal Precautions: Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental Precautions: Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods for Containment: Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.

Methods for Cleaning Up: Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains. Dam up. After cleaning, flush away traces with water.

Other Information: Not applicable.
7. Handling and Storage

Advice on Safe Handling: Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Storage Conditions: Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Incompatible Materials: Strong acids and bases; Oxidizing agents; Metals; Metal oxides; Hydroxides; Amines; Carbonates; Alkali; Cyanides; Sulphides; Sulphites; Formaldehyde

8. Exposure Controls / Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>Ontario TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>Ceiling: 2 ppm</td>
<td>5 ppm Ceiling</td>
<td>CEV: 2 ppm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>European Union</th>
<th>China</th>
<th>Japan</th>
<th>Korea</th>
<th>Australia</th>
<th>Taiwan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>TWA 5 ppm</td>
<td>Ceiling: 7.5 mg/m³ Ceiling</td>
<td>Ceiling: 5 ppm Ceiling</td>
<td>STEL: 2 ppm Ceiling</td>
<td>7.5 mg/m³ Ceiling</td>
<td>5 ppm Peak 7.5 mg/m³ Peak</td>
</tr>
</tbody>
</table>

Exposure Guidelines: Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

Engineering Controls: Ensure adequate ventilation, especially in confined areas.

Personal protective equipment (PPE):

Eye/Face Protection: Tight sealing safety goggles. Face protection shield.

Body Protection: Gloves made of plastic or rubber. Suitable protective clothing. Rubber boots. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Wear chemical resistant clothing such as gloves, apron, boots or whole bodysuits made from neoprene, as appropriate.

General Hygiene Considerations:
When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

| Property                          | Values                  | Remarks • Method |
|-----------------------------------|                        |                 |
| Physical State:                   | Liquid                 |                   |
| Appearance:                       | Clear liquid           |                   |
| Color:                            | Colorless              |                   |
| pH:                               |                         |                   |
| “Salt Out” Point (°F):            |                         |                   |
| Melting Point/Freezing Point:     |                         |                   |
| Boiling Point/Boiling Range:      | 81 °C / 178 °F         |                   |
| Flash Point:                      |                         |                   |
| Evaporation Rate (BuAc=1):        |                         |                   |
| Flammability (solid, gas):        |                         |                   |
| Flammability Limits in Air:       |                         |                   |
| Upper Flammability Limit:         |                         |                   |
| Lower Flammability Limit:         |                         |                   |
941 Hydrochloric Acid 20' FCC

Vapor Pressure (mm Hg) : No information available
Vapor density (Air =1) : No information available
Specific Gravity (H2O=1): No information available
Specific Gravity (2nd value): No information available
Water Solubility: No information available
Solubility(ies): Infinitely soluble
Partition Coefficient (n-octanol/water) : No information available
Autoignition Temperature: No information available
Decomposition Temperature: No information available
Kinematic Viscosity: No information available
Dynamic Viscosity: No information available
Oxidizing Properties: No information available
Explosive Properties: Not considered to be an explosion hazard

9.2. Other information
Softening Point: No information available
Molecular Weight: 36.46
VOC Content(%): No information available
Density: 1.16
Bulk Density: No information available

10. Stability and Reactivity
Stability: Stable under normal conditions of use and storage
Conditions to Avoid: Exposure to air or moisture over prolonged periods; Heat; Direct sunlight
Incompatible Materials: Strong acids and bases; Oxidizing agents; Metals; Metal oxides; Hydroxides; Amines; Carbonates; Alkali; Cyanides; Sulfides; Sulfites; Formaldehyde
Hazardous Decomposition Products: Thermal decomposition can lead to release of irritating and toxic gases and vapors
Possibility of Hazardous Reactions: None under normal processing

11. Toxicological Information
Product Information
Acute Toxicity: 0.01% of the mixture consists of ingredient(s) of unknown toxicity.
The following values are calculated based on chapter 3.1 of the GHS document

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50 :</th>
<th>Dermal LD50 :</th>
<th>LC50 (Lethal Concentration):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>700 mg/kg (Rat)</td>
<td>5010 mg/kg (Rabbit)</td>
<td>3124 ppm (Rat) 1 h</td>
</tr>
</tbody>
</table>

Chronic Toxicity:

Carcinogenicity: This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>IARC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>3</td>
</tr>
</tbody>
</table>

IARC (International Agency for Research on Cancer)
Not classifiable as a human carcinogen
Target Organ Effects: Eyes, Respiratory system, Skin

12. Ecological Information

Ecotoxicity

67.97% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Very toxic to aquatic life

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Toxicity to algae</th>
<th>Toxicity to fish</th>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td></td>
<td>282: 96 h Gambusia affinis mg/L</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LC50 static</td>
<td></td>
</tr>
</tbody>
</table>

Persistence and Degradability: No information available.

Bioaccumulation: No information available.

Mobility: No information available.

13. Disposal Considerations

Waste from Residues/Unused Products: Disposal should be in accordance with applicable regional, national and local laws and regulations

Contaminated Packaging: Do not reuse container.

14. Transport Information

IATA

DOT

Proper shipping name Hydrochloric Acid
Hazard Class 8
UN/ID No UN-1789
Packing Group II
Description UN1789, HYDROCHLORIC ACID, 8, PG II

15. Regulatory Information

International Inventories
All of the components in the product are on the following Inventory lists: TSCA (United States), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), China (IECSC).
This product contains a substance not listed on international inventories - it is for research and development use only.

AICS: Complies
TSCA: Complies
DSL/NDSL: Complies
EINECS/ELINCS: Complies
ENCS: Complies
IECSC: Complies
KECL: Complies
PICCS: Complies

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>AICS</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
<td>(1)-215</td>
<td>Listed</td>
<td>KE-20189</td>
<td>Present</td>
</tr>
</tbody>
</table>

Inventory Legend
AICS - Australian Inventory of Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

RESTRICTIONS - REACH TITLE VII  No information available

US Federal Regulations

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CERCLA Hazardous Substances and the Reportable Quantities</th>
<th>SARA Extremely Hazardous Substances EPCRA RQ</th>
<th>SARA Extremely Hazardous Substances TPQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>5000 lb 2270 kg</td>
<td>5000 lb EPCRA RQ (gas only)</td>
<td>500 lb TPQ</td>
</tr>
</tbody>
</table>

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories
Acute health hazard: Yes
Chronic Health Hazard: Yes
Fire hazard: No
Sudden release of pressure hazard: No
Reactive Hazard: No

U.S. State Right-to-Know Regulations
California Proposition 65:
This product does not contain any Proposition 65 chemicals
16. Other Information

National Fire Protection Association (NFPA) Ratings

Prepared By:  Imt
Issue Date:  04-Oct-2012
Revision Date:  04-Oct-2012
Revision Note:  MSDS converted to GHS SDS Format.

Disclaimer:
Please be advised that it is your responsibility to inform your employees of the hazards of this substance, to advise them of what these properties mean and be sure they understand exposure information. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication.

The information presented herein, while not guaranteed, was prepared by competent technical personnel and is true and accurate to the best of our knowledge. No warranty or guaranty, express or implied, is made regarding performance, stability, or otherwise. This information is not intended to be all-inclusive as to the manner and conditions of use, handling, and storage. Other factors may require additional safety or performance considerations. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, the handling and use remains the responsibility of the consumer. No suggestions are intended as, and should not be constructed as, a recommendation to infringe on any existing patents or to violate any Federal, State, or local laws.

End of Safety Data Sheet