1. PRODUCT DATA
Date of Preparation: March 1, 2015
Product Name: 940 Iron & Manganese Remover
Producer: Diedrich Technologies, A Hohmann & Barnard
Company, 310 Wayto Road, Schenectady, NY 12303
Company Contact: Mike Eglin
Telephone: 800-283-3888
24-Hour Emergency Contact: CHEMTREC 800-424-9300
This product is manufactured for Commercial/Industrial use. Not recommended for: Household use.

2 - HAZARDS IDENTIFICATION

GHS Ratings:
Oral Toxicity: Acute Tox. 4
Oral >300 + <=2000mg/kg

Inhalation Toxicity: Acute Tox. 2
Gases >100 + <=500ppm, Vapors >0.5 + <=2mg/l, Dusts & mists >0.05 + <=0.5mg/l

Skin corrosive: 1A
Destruction of dermal tissue: Exposure <3 min. Observation <1 hour, visible necrosis in at least one animal

Eye corrosive: 1
Serious eye damage: Irreversible damage 21 days after exposure, Draize score: Corneal opacity >= 3, Iritis >1.5

Carcinogen: 1B
Presumed Human Carcinogen, Based on demonstrated animal carcinogenicity

Reproductive toxin: 2
Human or animal evidence possibly with other information

GHS Hazards:
H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage
H318 Causes serious eye damage
H330 Fatal if inhaled
H350 May cause cancer
H361 Suspected of damaging fertility or the unborn child

GHS Precautions:
P260 Do not breathe dust/fume/gas/mist/vapors/spray
P264 Wash skin thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P271 Use only outdoors or in a well-ventilated area
P280 Wear protective gloves/protective clothing/eye protection/face protection
P281 Use personal protective equipment as required
P284 Wear respiratory protection
P310 Immediately call a POISON CENTER or doctor/physician
P320 Specific treatment is urgent (see section 4)
P321 Specific treatment (see section 4)
P330 Rinse mouth
P363 Wash contaminated clothing before reuse
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P308+P313 IF exposed or concerned: Get medical advice/attention
P405 Store locked up
P403+P233 Store in a well ventilated place. Keep container tightly closed
P501 Dispose of contents/container according to local regulations
3. COMPOSITION

<table>
<thead>
<tr>
<th>Chemical Name/ CAS No.</th>
<th>OSHA Exposure Limits</th>
<th>ACGIH Exposure Limits</th>
<th>Other Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid 7664-38-2 13 percent</td>
<td>1 mg/m³ TWA</td>
<td>3 mg/m³ STEL</td>
<td>NIOSH: 1 mg/m³ TWA 3 mg/m³ STEL</td>
</tr>
<tr>
<td>Sulfuric acid 7664-93-9 10 percent</td>
<td>1 mg/m³ TWA</td>
<td>0.2 mg/m³ TWA (thoracic fraction)</td>
<td>NIOSH: 1 mg/m³ TWA</td>
</tr>
<tr>
<td>Ammonium bifluoride 1341-49-7 6 percent</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Inhalation: Remove from further exposure. For those providing assistance, avoid exposure to yourself. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, a trained individual should attempt to resuscitate while getting immediate medical aid.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for 15 minutes.

Skin Contact: In case of skin contact, remove contaminated clothing. Flush the skin with large amounts of water, then wash the skin with soap and water.

Ingestion: If conscious, give 2 to 3 glasses of water. Do not induce vomiting and seek medical attention immediately.

Notes to Physician: No data found.

5. FIRE FIGHTING MEASURES

Flammable Limits: LEL: N/A UEL: N/A
Flash Point: No data available.
Extinguishing Media: Use extinguishing agent suitable for type of surrounding fire.

Unusual Fire or Explosion Hazards: No data available.
Hazardous Combustion Products: See Section 10 for a list of hazardous decomposition products for this mixture.

Fire Fighting: If evacuation of personnel is necessary, evacuate to an upwind area. Decontaminate personnel and equipment with a water wash-down after fire and smoke exposure.

Fire Fighting: Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Isolate the area and contain the spilled material. Persons not wearing the appropriate PPE should be removed from the area until the spill is cleaned up. Stop leak if you can do it without risk, stay upwind, and avoid run off to waterways and sewers.

SMALL SPILLS: Prevent entry into waterways, sewers, basements or confined areas. Use a non-combustible material like vermiculite or sand to soak up the product and place into a container for later disposal.

LARGE SPILLS: Prevent entry into waterways, sewers, basements or confined areas. Dike to collect large liquid spills, collect leaking liquid in sealable compatible containers.

ACID SPILLS: Neutralize with Soda Ash, (Sodium Carbonate) Hydrated Lime, (Calcium Hydroxide) or Baking Soda (Sodium Bicarbonate). Cautiously neutralize remainder. Then wash away with plenty of water.

7. HANDLING AND STORAGE

Handling Precautions: Wear all appropriate Personal Protective Equipment (PPE). Wear respiratory protection or ensure adequate ventilation at all times as vapors can accumulate in confined or poorly ventilated areas. Use the product in a manner which minimizes splashes and/or the creation of dust. Keep containment closed when not in use. Do not handle or store material near heat, sparks, or open flames, or other sources of ignition.

Storage: Prevent from freezing. Store at room temperatures, i.e., 40° to 95°F (4° to 35°C)

Regulatory Requirements: No data found
8. EXPOSURE CONTROL AND PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Chemical Name/ CAS No.</th>
<th>OSHA Exposure Limits</th>
<th>ACGIH Exposure Limits</th>
<th>Other Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid 7664-39-2</td>
<td>1 mg/m3 TWA</td>
<td>3 mg/m3 STEL 1 mg/m3 TWA</td>
<td>NIOSH: 1 mg/m3 TWA 3 mg/m3 STEL</td>
</tr>
<tr>
<td>Sulfuric acid 7664-93-9</td>
<td>1 mg/m3 TWA</td>
<td>0.2 mg/m3 TWA (Thoracic fraction)</td>
<td>NIOSH: 1 mg/m3 TWA</td>
</tr>
<tr>
<td>Ammonium bifluoride 1341-49-7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Engineering controls:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Ensure that eyewash stations and safety showers are close to the workstation location.

**Ventilation Control:** Provide adequate ventilation to control airborne concentration below the exposure guidelines/limits.

**Administrative controls:** No data found.

**Personal Protection:** As prescribed in the OSHA Standard for Personal Protective Equipment (29 CFR 1910.132), employers must perform a hazard Assessment of all workplaces to determine the need for proper protective equipment for each employee.

**Eye Protection:** Normal industrial eye protection practices should be employed.

**Skin Protection:** In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

**Respiratory:** If airborne concentration limits are not met, an approved respirator must be worn.

**Contaminated Equipment:** Dispose of the waste in compliance with federal, state, regional, and local regulations.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling range</td>
<td>100°C</td>
</tr>
<tr>
<td>Flash point</td>
<td>999°C, 999°F</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Flammability</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear, Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Pungent</td>
</tr>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not Determined</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not Determined</td>
</tr>
<tr>
<td>pH</td>
<td>Strong Acid &lt;1</td>
</tr>
<tr>
<td>Explosive Limits</td>
<td>0%</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

**Stability:** STABLE

**Incompatibilities:** Avoid contact with strong bases.

**Hazardous Decomposition Products:** Note: these are all possible decomposition products based on molecular structure of components.

- Oxides of Sulfur
- Oxides of Phosphorus
- Hydrogen or Hydrogen Fluoride
- Oxides of Nitrogen or Ammonia
- Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

**Mixture Toxicity**
- Oral Toxicity: 1,679.00 mg/kg
- Inhalation Toxicity: 0.27 mg/L

**Component Toxicity**
- 7664-38-2 Phosphoric acid
  - Oral: 1,530.00 mg/kg (Rat)
  - Dermal: 2,730.00 mg/kg (Rabbit)

**Routes of entry:** No data found.

**Target Organs:** Eyes, Skin, Respiratory System

**Effects of Overexposure:** Causes severe skin burns and eye damage

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Description</th>
<th>% Weight</th>
<th>Carcinogen Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>7664-93-9</td>
<td>Sulfuric acid</td>
<td>10</td>
<td>Sulfuric acid: IARC: Human carcinogen OSHA: listed</td>
</tr>
</tbody>
</table>

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12. ECOLOGICAL INFORMATION
Ecotoxicity: No data available for this product.
Component Ecotoxicity: Sulfuric acid 96 Hr LC50 Brachydanio rerio: > 500 mg/L [static]

13. DISPOSAL
Disposal Instructions: Refer to the latest federal, state, and local regulations regarding proper disposal.

14. TRANSPORTATION INFORMATION
The following is for US DOT Highway transportation. Other modes/jurisdictions may have different classifications.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Proper Shipping Name</th>
<th>UN Number</th>
<th>Packaging Group</th>
<th>Hazard Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>US DOT</td>
<td>Corrosive Liquid NOS. (Sulfuric Acid Phosphoric Acid)</td>
<td>UN1760</td>
<td>II</td>
<td>8</td>
</tr>
</tbody>
</table>

15 - REGULATORY INFORMATION
This listing is to highlight federal level regulation of the product. Individual states, and other nations may have further regulations not listed below.

US DOT List of Marine Pollutants (172.101 - Appendix B): None

- 1341-49-7 Ammonium bifluoride 6%
- 7664-93-9 Sulfuric acid 10%
- 7664-38-2 Phosphoric acid 13%

US DOT List of Severe Marine Pollutants (172.101 - Appendix B): None

SARA Section 302 Extremely Hazardous Substances (40 CFR 355): 7664-93-9 Sulfuric acid 10%

Sara Section 302 Threshold Planning Quantity.
7664-93-9 Sulfuric acid 10%

SARA Section 313, Toxic Chemicals (40 CFR 372.65):
7664-93-9 Sulfuric acid 10%

EU RISK PHRASES
Toxic Substances Control Act (TSCA): All components are listed or exempt from the Toxic Substances Control Act except those listed below.
- None

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1985 (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.
7664-93-9 Sulfuric acid 10.4%

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>1</td>
<td>D</td>
</tr>
</tbody>
</table>

HMIS & NFPA Hazard Rating Legend
* = CHRONIC HEALTH HAZARD
0 = INSIGNIFICANT
1 = SLIGHT
2 = MODERATE
3 = HIGH
LEGEND

0 = LEAST  1 = SLIGHT  2 = MODERATE  3 = HIGH  4 = EXTREME

N.D. = NOT DETERMINED  N.A. = NOT AVAILABLE  N/A = NOT APPLICABLE

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