SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION:

Manufactured by:
Quip Laboratories, Inc.
1500 Eastlawn Avenue
Wilmington, DE  19802
Non-Emergency: (302) 761-2600

Product Name:    Acidulate 1505
Common Name:    Acid Cleaning Solution
Chemical Name: Nitric Acid Mixture
Formula:        Chemical Mixture
Product Use:    Acid Cleaner/Descaler

SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS:

INGREDIENTS: % / Wt.        TLV/ACGIH
Water       (C.A.S. # 7732-18-5)  To qs.   None Established
Nitric Acid    (C.A.S. # 7697-37-2) 2.0 - 7.0  2.00 ppm TWA
Sulfuric Acid  (C.A.S. # 7664-93-9) 3.0 - 8.0  0.2 mg/m³ TWA
Gluconic Acid  (C.A.S. # 526-95-4) 1.0 - 5.0  None Established
Phosphoric Acid (C.A.S. # 7664-38-2) 10.0 - 20.0 1 mg/m³ / 3 mg/m³
Proprietary Ingredients (C.A.S. # N/A) Prop.  N/A

SECTION 3: HEALTH HAZARD IDENTIFICATION DATA:

EMERGENCY OVERVIEW:

ROUTES OF ENTRY: Eyes; Yes  Skin; Yes  Inhalation; Yes  Ingestion; No

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: Can cause permanent eye injury. Symptoms include stinging, redness, tearing and swelling of eyes. Severity of injury depends on frequency of exposure and how soon it is treated.

SKIN CONTACT: Can cause permanent skin damage. Symptoms may include redness, burning, and swelling of skin, burns, and other skin damage.

INHALATION: Breathing of vapor or mist is possible. Prolonged inhalation of particles or mist generated from this material can be harmful. Symptoms may include severe irritation and burns to the nose, throat, and respiratory tract.

INGESTION: Harmful, or even fatal, if swallowed. Can cause pain, nausea, vomiting, diarrhea, weakness and fatigue.

CARCINOGENICITY: No data.

SYMPTOMS OF EXPOSURE: No data.

SECTION 4: EMERGENCY & FIRST AID PROCEDURES:

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open while flushing. If symptoms develop as a result of vapor exposure, immediately move individual away from exposure and into fresh air before flushing as described above. Seek immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is not damaged, and symptoms persist, seek medical attention. Launder contaminated clothing before reuse.
SECTION 4: EMERGENCY & FIRST AID PROCEDURES (Cont.):

INHALATION: if symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, first call 911 or an ambulance, then begin artificial respiration. If breathing is difficult, administer oxygen.

INGESTION: Seek immediate medical attention. Do not induce vomiting. Vomiting will cause further damage to the mouth and throat. If individual is conscious and alert, immediately rinse mouth with water and give milk or water to drink. If possible, do not leave individual unattended.

Note to Physician: Pre-existing disorders of the following organs (or organ systems) may be aggravated by this material: skin, lung (for example, asthma like conditions).

SECTION 5: FIRE FIGHTING MEASURES:

FLASH POINT: Not Applicable AUTO IGNITION: Not Applicable LEL / UEL: Not Applicable
EXTINGUISHING MEDIA: Water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Positive pressure, self contained breathing apparatus. Wear full protective clothing.

UNUSUAL FIRE OR EXPLOSION HAZARDS: Water may be used to cool drums in the surrounding area. May form acid vapors, nitrogen compounds.

SECTION 6: ACCIDENTAL RELEASE MEASURES:

SMALL SPILL: Cover the contaminated area with sodium bicarbonate or a soda ash flaked lime mixture (50/50). Mix and add water in necessary to form a slurry. Scoop up slurry and wash site with soda ash solution. Proper mixing procedure are essential. Trained personnel should conduct this procedure. Untrained personnel should be removed from the spill area.

LARGE SPILL: Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred. Persons not wearing protective clothing should be excluded from area of spill until clean up is complete. Stop spill at source. Dike to prevent spreading. Pump to salvage tank.

SECTION 7: HANDLING AND STORAGE:

Handling: Containers of this material may be hazardous when empty. Treat empties as hazardous. Always add acids TO water, slowly and in small amounts. Never use hot water.

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION INFORMATION:

RESPIRATORY PROTECTION: Use approved respiratory protection if exposure limits are exceeded, or overexposure is likely. If respirator protection is used, follow all requirements for respiratory programs set forth in OSHA regulations (29 CFR 1910.134).

PERSONAL PROTECTIVE EQUIPMENT: Safety Glasses with side shields. Appropriate chemical resistant gloves should be used. Clean, body covering clothing as necessary to prevent skin contact.

VENTILATION: Local Exhaust as necessary to control PELs and TLVs while using this product.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE: Clear to slightly hazy liquid.
SPECIFIC GRAVITY: 1.17
SOLUBILITY IN WATER: Soluble
VAPOR PRESSURE: (mm Hg) Negligible
VAPOR DENSITY (AIR = 1): Not Applicable
ODOR: Musty chemical odor.
PH: 0.5 - 0.9
EVAPORATION RATE: Not Applicable
BOILING POINT: Not Established
SECTION 10: STABILITY & REACTIVITY DATA:

STABILITY: Stable.
CONDITIONS/HAZARDS TO AVOID: None known.
INCOMPATIBILITY (MATERIALS TO AVOID): Organic materials, reducing agents, strong alkalis.
Acid reacts with most metals to form hydrogen, which can be explosive.
HAZARDOUS REACTIONS: None
HAZARDOUS DECOMPOSITION PRODUCTS: Acid vapors, nitrogen compounds.
POLYMERIZATION: Will not occur.
POLYMERIZATION-AVOID: None anticipated.

SECTION 11: TOXICOLOGICAL INFORMATION:

Carcinogenicity Ingredients: Not listed as carcinogen by OSHA, NTP or IARC

Acute Toxicity

<table>
<thead>
<tr>
<th>Product/Ingredient Name</th>
<th>Result</th>
<th>Species</th>
<th>Dose / Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric Acid</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1530 mg/kg</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>2740 mg/kg</td>
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<tr>
<td>Nitric Acid</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt; 90 mg/kg</td>
</tr>
<tr>
<td>Sulfuric Acid</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2140 mg/kg</td>
</tr>
<tr>
<td>Gluconic Acid</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>10380 mg/kg</td>
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</tbody>
</table>

SECTION 12: ECOLOGICAL INFORMATION:

Environmental Effects: No known significant effects or critical hazards.

Aquatic Ecotoxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric Acid</td>
<td>Acute LC50 138 mg/L</td>
<td>Fish - Mosquitofish</td>
<td>96 hours</td>
</tr>
<tr>
<td>Nitric Acid</td>
<td>Acute LC50 15.6 ppm</td>
<td>Fish - Trout</td>
<td>24 hours</td>
</tr>
<tr>
<td>Sulfuric Acid</td>
<td>Acute LC50 10 ppm</td>
<td>Fish</td>
<td>96 hours</td>
</tr>
<tr>
<td>Gluconic Acid</td>
<td>Acute LC50 3220 mg/L</td>
<td>Fish</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

SECTION 13: DISPOSAL CONSIDERATIONS:

PHOSPHORIC ACID CAS# 7664-38-2
NITRIC ACID CAS# 7697-37-2
SULFURIC ACID CAS# 7664-93-9

Federal, state and local disposal laws and regulations will determine the proper waste disposal/recycling/reclamation procedure. Disposal requirements are dependent on the hazard classification and will vary by location and the type of disposal selected. All waste materials should be reviewed to determine the applicable hazards (testing may be necessary).

SECTION 14: TRANSPORT INFORMATION:

INTERNATIONAL: N/A

US TRANSPORTATION REGULATIONS:

DOT Classification: UN3264, 8 (Corrosive)
DOT Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s. (contains phosphoric acid, nitric acid)
Packing Group: III
SECTION 15: REGULATORY INFORMATION:

US FEDERAL REGULATIONS:
TSCA: In TSCA (Toxic Substances Control Act)
SARA 311 and 312 HAZARD CATEGORIES:
- Immediate (Acute): Yes
- Delayed (Chronic): No
- Fire: No
- Reactivity: Yes
- Sudden Release of Pressure: No

SARA SECTION 313 NOTIFICATION:
This product does contain toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

CAA 602 OZONE DEPLETING SUBSTANCES (ODS):
This product neither contains nor is manufactured with an ozone depleting substance subject to the labeling requirements of the Clean Air Act Amendments 1990 and 40 CFR Part 82.

VOLATILE ORGANIC COMPOUNDS (VOC): Not Applicable.

SECTION 16: SPECIAL INFORMATION:
The information in this Material Safety Data Sheet should be provided to all who use, handle, transport, or otherwise are exposed to this product. This information has been prepared for the guidance of plant engineering, operations, management and persons working with or handling this product. The information presented in this MSDS is premised upon proper handling and anticipated uses, and is for the material without chemical additions/alterations. Additionally, if this Material Safety Data Sheet is more than three years old, please contact this supplier at the phone number above Section 1 to make sure this sheet is current.

PREPARED BY: Timothy Hidell
DATE: 1/21/2013
Supersedes: 8/30/2012

The information and recommendations contained herein, are based upon data believed to be correct. No warranty, expressed or implied, is made.