Material Safety Data Sheet

Martrex, Inc.

Section 1: Chemical Product and Company Information

Product name: Diammonium Phosphate
Reference Number: Web: www.martrexinc.com
Supplier/ Further Information: Martrex, Inc.
   P. O. Box 1709 Phone: 952/933-5000
   14525 Highway 7 Toll Free: 800/328-3627
   Minnetonka, Minnesota 55345-3793 FAX: 952/933-1889
EPA Registration Number: n/a
CAS#: 7783-28-0
Chemical Name: Diammonium Phosphate
Synonyms: Phosphoric acid, diammonium salt; ammonium phosphate;
DAP; diammonium phosphate, diammonium salt
Chemical Family: Ammonium Phosphates
Product Use: n/a
MSDS Number: n/a

24 Hour Emergency Phone - Chemtrec Transport: 1-800-424-9300; Medical: 1-800-441-3637

Section 2: Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Component</th>
<th>CAS#</th>
<th>%</th>
<th>OSHA Limits</th>
<th>ACGIH Limits</th>
<th>OTHER Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diammonium Phosphate</td>
<td>7783-28-0</td>
<td>86%</td>
<td>TWA 5 mg/cu m</td>
<td>no data</td>
<td>no data</td>
</tr>
</tbody>
</table>

Section 3: Hazards Identification

Emergency Overview: WARNING! CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.
HARMFUL IF SWALLOWED OR INHALED.
NFPA Ratings: Health: 2 Flammability: 0 Reactivity: 1
Potential Health Effects:
   Primary Routes of Exposure / Entry: no data
   Target Organs: no data
   Inhalation (breathing): Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.
   Eye Contact: Causes irritation, redness, and pain.
   Skin Contact: Causes irritation to skin. Symptoms include redness, itching, and pain.
   Ingestion (swallowing): Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea.
Carcinogenicity Data:
   See Section 11 for more Toxicological information

Section 4: First Aid Measures

Eye Exposure: Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention.
Skin Exposure: Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

24 Hour Emergency Phone - Chemtrec: 1-800-424-9300 Transportation 1-800-441-3637 Medical
Ingestion: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get Medical Attention.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get Medical Attention.

Medical Conditions Possibly Aggravated by Exposure: Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

NOTE TO THE PHYSICIAN: Treat symptomatically and supportively.

### Section 5: Fire Fighting Measures

**Flammability Classification:** Not considered to be a fire hazard.

**Fire:** Not considered to be a fire hazard.

**Explosion:** Not considered to be an explosion hazard. See Section 10 Reactivity Incompatibilities.

**Fire Extinguishing Media:** Use any means suitable for extinguishing surrounding fire.

**Special Fire Fighting Information:** Use protective clothing and breathing equipment appropriate for the surrounding fire.

**Hazardous Combustion Products:** See Section 10 Reactivity Incompatibilities.

### Section 6: Accidental Release Measures

**Procedure to be Followed in Case of Leak or Spill:** Ventilate area of leak or spill.

**Spill and Leak Personal Procedures:** Wear appropriate personal protective equipment as specified in Section 8.

**Cleanup and Disposal of Spill:** Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. Consult local waste regulators for proper disposal.

**Environmental and Regulatory Reporting:** See Sections 12, 13 and 15.

### Section 7: Handling and Storage

**Minimum/maximum Storage Temperature:** No data.

**Handling:** Use methods to minimize dust.

**Storage:** Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

**REGULATORY REQUIREMENTS:** Obey all Federal, State and Local regulations when storing or disposing of Diammonium Phosphate. See Section 15.

### Section 8: Exposure Controls / Personal Protection

**Exposure Limits:** OSHA TWA 5 mg/cu m

**Ventilation/Engineering Protection:** In general, dilution ventilation is a satisfactory health hazard control for this substance. However, if conditions of use create discomfort to the worker, a local exhaust system should be considered.

**Eye Protection:** Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

**Skin Protection:** Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Protective Clothing and Equipment:** Wear impervious protective clothing.

**Respiratory Protection:** (NIOSH Approved): For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
**Hygienic Work Practices:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemical Name:</strong></td>
<td>Diammonium Phosphate</td>
</tr>
<tr>
<td><strong>Percent Equivalent:</strong></td>
<td>86%</td>
</tr>
<tr>
<td><strong>Physical State:</strong></td>
<td>Solid</td>
</tr>
<tr>
<td><strong>Color and Appearance:</strong></td>
<td>White Crystals or powder</td>
</tr>
<tr>
<td><strong>Odor:</strong></td>
<td>slight ammonia-like odor</td>
</tr>
<tr>
<td><strong>Odor Threshold:</strong></td>
<td>no data</td>
</tr>
<tr>
<td><strong>pH:</strong></td>
<td>ca. 8.0</td>
</tr>
<tr>
<td><strong>Specific Gravity:</strong></td>
<td>1.62</td>
</tr>
<tr>
<td><strong>Vapor Pressure:</strong></td>
<td>no data</td>
</tr>
<tr>
<td><strong>Vapor Density (Air = 1):</strong></td>
<td>no data</td>
</tr>
<tr>
<td><strong>Density:</strong></td>
<td>no data</td>
</tr>
<tr>
<td><strong>Bulk Density:</strong></td>
<td>no data</td>
</tr>
<tr>
<td><strong>Vaportilities by Volume @ 21°C (70°F):</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Boiling Point:</strong></td>
<td>not applicable</td>
</tr>
<tr>
<td><strong>Melting Point:</strong></td>
<td>155°C (311°F) Decomposes</td>
</tr>
<tr>
<td><strong>Evaporation Rate (Butyl Acetate=1):</strong></td>
<td>no data</td>
</tr>
<tr>
<td><strong>Solubility in water:</strong></td>
<td>1g/1.7ml water</td>
</tr>
<tr>
<td><strong>Viscosity:</strong></td>
<td>no data</td>
</tr>
<tr>
<td><strong>Other Solubilities:</strong></td>
<td>no data</td>
</tr>
<tr>
<td><strong>Chemical Formula:</strong></td>
<td>(NH₄)₂HPO₄</td>
</tr>
<tr>
<td><strong>Formula Wt:</strong></td>
<td>132.06</td>
</tr>
</tbody>
</table>

### Section 10: Stability and Reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemical Stability</strong></td>
<td>Stable X Unstable</td>
</tr>
<tr>
<td><strong>Hazardous Polymerization:</strong></td>
<td>May Occur X Will Not Occur</td>
</tr>
<tr>
<td><strong>Conditions to Avoid:</strong></td>
<td>dusting conditions, extreme heat, extreme humidity. Will gradually lose about 8% ammonia on exposure to air.</td>
</tr>
<tr>
<td><strong>Chemical Incompatibility and Materials to Avoid:</strong></td>
<td>Strong Bases, Sodium hypochlorite.</td>
</tr>
<tr>
<td><strong>Hazardous Decomposition Products:</strong></td>
<td>Burning may produce ammonia and oxides of phosphorus</td>
</tr>
</tbody>
</table>

### Section 11: Toxicological Information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute Toxicity:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Eye Irritation:</strong></td>
<td>No data</td>
</tr>
<tr>
<td><strong>Skin Irritation:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Toxicological Information and Interpretation:</strong></td>
<td>Skin - skin irritation, rabbit. Mildly irritating.</td>
</tr>
<tr>
<td><strong>Dermal Toxicity:</strong></td>
<td>No data</td>
</tr>
<tr>
<td><strong>Respiratory Irritation:</strong></td>
<td>No data</td>
</tr>
<tr>
<td><strong>Inhalation Toxicity:</strong></td>
<td>No data</td>
</tr>
<tr>
<td><strong>Oral Toxicity:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Toxicological Information and Interpretation:</strong></td>
<td>LD50 - lethal dose 50% of test species, &gt; 1000 mg/kg, rat.</td>
</tr>
<tr>
<td><strong>Other Effects on Humans:</strong></td>
<td>no data</td>
</tr>
<tr>
<td><strong>Carcinogen Status:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>OSHA:</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>NTP:</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>ACGIH:</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>IARC:</strong></td>
<td>No</td>
</tr>
</tbody>
</table>
### Section 12: Ecological Information

**Ecotoxicity Data:**
- **Fish Toxicity:** LC50 - lethal concentration 50% of test species, 155 mg/l/96 hr, fish: Pimephales promelas.
- **Chemical Fate Information:** No data found for product.

### Section 13: Disposal Considerations

**Disposal Procedures:** Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

### Section 14: Transport Information

**US DOT Shipping Name:**
No classification assigned.

### Section 15: Regulatory Information

**Inventory Status:**
- UNITED STATES (TSCA) Y
- CANADA (DSL) Y
- EUROPE (EINECS/ELINCS) Y
- AUSTRALIA (AICS) Y
- JAPAN (MITI) Y
- SOUTH KOREA (KECL) Y

- **Y** = All ingredients are on the inventory.
- **E** = All ingredients are on the inventory or exempt from listing.
- **P** = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.
- **N** = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

**FEDERAL REGULATIONS**

**Inventory Issues:** All functional components of this product are listed on the TSCA Inventory.

**SARA Title III Hazard Classes:**
- Fire Hazard - NO
- Reactive Hazard - NO
- Release of Pressure - NO
- Acute Health Hazard - YES
- Chronic Health Hazard - NO

**STATE REGULATIONS:**
This product does not contain any components that are regulated under California Proposition 65.

### Section 16: Other Information

**National Paint & Coating Hazardous Materials Identification System--HMIS(R):**
- 1 - Health Hazard Rating--Slight
- 0 - Flammability Rating--Minimal
- 0 - Reactivity Rating--Minimal

**ACGIH** - American Conference of Governmental Industrial Hygienists
**ANSI** - American National Standards Institute
**CAS** - Chemical Abstracts Service
**CERCLA** - Comprehensive Environmental Response, Compensation & Liability Act of 1980
**CFR** - Code of Federal Regulations
**Rating Number** | **Health Hazard** | **Flamibility Hazard** | **Instability Hazard** | **Rating Symbol** | **Special Hazard**
--- | --- | --- | --- | --- | ---
4 | Can be lethal | Will vaporize and readily burn at normal temperatures | May explode at normal temperatures and pressures | ALK | Alkaline
3 | Can cause serious or permanent injury | Can be ignited under almost all ambient temperatures | May explode at high temperature or shock | ACID | Acidic
2 | Can cause temporary incapacitation or residual injury | Must be heated or high ambient temperature to burn | Violent chemical change at high temperatures or pressures | BIO | BioHazard
1 | Can cause significant irritation | Must be preheated before ignition can occur | Normally stable. High temperatures make unstable | COR | Strong Corrosive
0 | No Hazard | Will not burn | Stable | OXY | Oxidizer

This chart for reference only - For complete specifications consult the NFPA Standard

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**Product name:** Diammonium Phosphate

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**CHEMTREC** - Chemical Transportation Emergency Center

**CPR** - Controlled Products Regulations

**CWC** - Chemical Weapons Convention

**DOT** - U.S. Department of Transportation

**DSL** - Canadian Domestic Substance List

**EHS** - Extremely Hazardous Substance

**EPA** - U.S. Environmental Protection Agency

**HMIS** - Hazardous Material Identification System

**IARC** - International Agency for Research on Cancer

**LEL/UEL** - Lower and Upper Explosive Limit

**mg/m^3** - Milligrams per cubic meter

**MSDS** - Material Safety Data Sheet

**NAERG** - North American Emergency Response Guidebook

**NIOSH** - National Institute of Occupational Safety and Health

**NFPA** - National Fire Protection Association

**NTP** - National Toxicology Program

**OSHA** - Occupational Safety and Health Administration

**PEL** - Permissible Exposure Limit (set by OSHA)

**PPE** - Personal Protective Equipment

**RCRA** - Resource Conservation and Recovery Act of 1976

**SARA** - Superfund Amendments and Reauthorization Act

**TDG** (Canadian): Transport of Dangerous Goods Regulations

**TLV** - Threshold Limit Value (set by ACGIH)

**TWA** - 8-hour Time Weighted Average

**TSCA** - US Toxic Substance Control Act

**WHMIS** - Workplace Hazardous Material Information System

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**MSDS Issue Date:** n/a

**Revised Date:** 5-1-2011

**Supersedes:** n/a

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24 Hour Emergency Phone - Chemtrec: 1-800-424-9300  Transportation 1-800-441-3637  Medical