



## MATERIAL SAFETY DATA SHEET

PRODUCT NAME: DIAMMONIUM PHOSPHATE (DAP)

EFFECTIVE DATE: 11/25/85

### EMERGENCY QUICK REFERENCE:

- TRANSPORTATION - CALL CHEMTREC - 1-800-424-9300
- HEALTH - CALL YOUR LOCAL POISON CENTER
- READ THE ENTIRE PRODUCT LABEL, IF AVAILABLE

### PRECAUTIONARY INFORMATION SUMMARY:

Avoid excessive exposure to diammonium phosphate (DAP) dust.

#### I. PRODUCT INFORMATION

PRODUCT NAME: Diammonium phosphate (DAP)

CAS NUMBER: 7783-28-0

FORMULA:  $(\text{NH}_4)_2\text{HPO}_4$

CHEMICAL NAME: Ammonium phosphate dibasic

CHEMICAL FAMILY: Ammonium phosphates

SYNONYMS AND COMMON TRADE NAMES: Ammonium phosphate,  
diammonium hydrogen phosphate, dibasic ammonium phosphate,  
secondary ammonium phosphate

| Typical Composition                          | Percentage | CAS Number |
|--|------------|------------|
| Diammonium phosphate                         | 69         | 7783-28-0  |
| Aluminum ammonium fluophosphate              | 7          |            |
| Iron ammonium fluophosphate                  | 1          |            |
| Ammonium fluosilicate                        | 1          | 1309-32-6  |
| Water  | 2          | 7732-18-5  |
| Miscellaneous ammonium & phosphate compounds | 1.5-6 each |            |
| Other minor constituents                     | <1 each    |            |

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## Diammonium Phosphate (Continued)

**EXPOSURE STANDARDS:** Although standards for diammonium phosphate have not been established, the following nuisance dust standard is applicable. The following standards for ammonia may also be applicable because when exposed to air, DAP gradually loses about 8% ammonia.

ACGIH TLV: Nuisance dust standard, 10 mg/m<sup>3</sup> TWA  
Ammonia

18 mg/3 TWA  
27 mg/m<sup>3</sup> STEL

OSHA PEL: Nuisance dust standard, 15 mg/m<sup>3</sup>  
Ammonia, 35 mg/m<sup>3</sup>

### II. PERSONAL PROTECTION INFORMATION

**VENTILATION:** Use process enclosure, local exhaust, or general dilution ventilation to maintain airborne ammonia and dust concentrations below the OSHA standards.

#### SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

**Eyes:** Protect eyes only if dust is not controlled by local ventilation.

**Skin:** Wear appropriate protective clothing to prevent excessive skin contact.

**Respiratory:** Protection is not normally required unless relevant exposure standards are exceeded. Use appropriate respirators during nonroutine operations that generate excessive dust concentrations or when engineering controls of dust concentrations are not feasible.

**Other:** Not applicable

### III. HEALTH HAZARD INFORMATION

**Eyes:** Dust can irritate the eyes and mucous membranes, causing redness and pain.

**Skin:** Dust can cause irritation and rashes.

**Inhalation:** Dust can irritate the respiratory tract; symptoms include coughing, bronchoconstriction, and tightness in the chest.

**Ingestion:** Extremely large amounts can cause local gastrointestinal upset.

## Diammonium Phosphate (Continued)

Toxicity Values: None available

Late Toxicities: No carcinogenic, mutagenic, or reproductive effects were reported in the literature examined.

## EMERGENCY &amp; FIRST AID PROCEDURES

Eyes: Hold eyelids open and flush eyes immediately with plenty of water.

Skin: Remove contaminated clothing immediately and flush affected areas with plenty of water.

Inhalation: Move to fresh air.

Ingestion: If large amounts are swallowed, seek medical attention immediately.

NOTE TO PHYSICIAN: See above.

IV. REACTIVITY DATA

STABILITY (thermal, light, etc.): Stable \_\_\_ Unstable X

Conditions to avoid: Not applicable

INCOMPATIBILITY (Materials to avoid): Not applicable

HAZARDOUS DECOMPOSITION PRODUCTS: Gradually loses about 8% ammonia when exposed to air at room temperature. Decomposes to ammonia and monoammonium phosphate at around 70°C (158°F). At 155°C (311°F), DAP emits oxides of phosphorus, nitrogen oxides, and ammonia.

HAZARDOUS POLYMERIZATION: May occur \_\_\_ Will not occur X

Conditions to avoid: Not applicable

V. PHYSICAL & CHEMICAL PROPERTIES

BOILING POINT: Not applicable

MELTING POINT: Decomposes at 155°C (311°F)

SOLUBILITY IN WATER: 569 g per liter water at 20°C (68°F)

VAPOR DENSITY (Air = 1): Not applicable

EVAPORATION (Butyl acetate = 1): Not applicable

SPECIFIC GRAVITY (H<sub>2</sub>O = 1): 1.619

Heavier than water X Lighter than water \_\_\_

MOLECULAR WEIGHT: 132.08

## Diammonium Phosphate (Continued)

PERCENTAGE VOLATILE BY VOLUME: Gradually loses about 8% ammonia when exposed to air.

pH: Approx. 8

VAPOR PRESSURE: (Ammonia) 15.6 psi at 73°C (163.4°F);  
20.3 psi at 100°C (212°F); 43.5 psi at 125°C (257°F)

APPEARANCE AND ODOR: Odorless light brown granules with a saline, cooling taste.

OTHER (e.g., wt. per gal): Not applicable

### VI. HANDLING & STORAGE PRECAUTIONS

HANDLING & STORAGE PROCEDURES: Keep well closed. Use appropriate techniques to suppress dust generation.

OTHER PRECAUTIONS: Not applicable

### VII. FIRE PROTECTION INFORMATION

NFPA FIRE RATING: Not listed

FLASH POINT (test method): Not applicable

FLAMMABLE LIMITS (by volume in air): Not flammable

LOWER EXPLOSIVE LIMIT: Not applicable

UPPER EXPLOSIVE LIMIT: Not applicable

AUTOIGNITION TEMPERATURE: Not applicable

EXTINGUISHING MEDIA: Not applicable

SPECIAL FIREFIGHTING PROCEDURES: Wear appropriate protective clothing and respirators because toxic gases can be emitted.

UNUSUAL FIRE AND EXPLOSIVE HAZARDS: None

### VIII. TRANSPORTATION REQUIREMENTS: Not listed

### IX. ENVIRONMENTAL PROTECTION

ENVIRONMENTAL IMPACT: Can be harmful to aquatic life at relatively high concentrations (96-hour LC50 for the fathead minnow is 155 ppm). Phosphate can cause algal blooms.

**Diammonium Phosphate (Continued)**

**PROCEDURES IF MATERIAL IS RELEASED OR SPILLED:** Cleanup workers should wear appropriate protective clothing (see Section II). Take immediate steps to contain the spill, if possible, and recover any reusable product. For dust accumulation, sweep, vacuum, or flush with water. Avoid contact with solid and dust. Notify the local fire department, CHEMTREC (800-424-9300), and the National Response Center, if applicable.

**NEUTRALIZING CHEMICALS:** Not applicable

**WASTE DISPOSAL METHODS:** Consult local, state, or federal environmental regulatory agencies for acceptable disposal procedures and locations. Disposal in streams or sewers may be prohibited.

**REPORTABLE QUANTITIES:** No specific quantity listed in 40 CFR 320.

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