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Manufacturer: DSM CHEMICALS NORTH AMERICA, INC.

Common Name: AMMONIUM SULFATE

Revised: 12-27-2004

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MATERIAL SAFETY DATA SHEET
Revised: December 27, 2004

Note: Users of this product should study this data sheet containing important safety information and should make it available to all employees, agents and contractors. If the product is resold, copies of this data sheet should be provided to the purchaser for use with its employees, agents and contractors.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: AMMONIUM SULFATE

SYNONYMS: Diammonium Sulfate; Standard or Granular Ammonium Sulfate;
Ammonium Sulphate.

CHEMICAL FORMULA: (NH₄)₂SO₄

CHEMICAL CATEGORY: Inorganic Salt

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TRANSPORTATION EMERGENCIES, CALL: CHEMTREC, (800) 424-9300

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2. COMPOSITION AND INFORMATION ON INGREDIENTS

Name	CAS #	% by Weight	TLV/PEL
Ammonium Sulfate	7783-20-2	98.5 - 100	None established.

A TWA of 10 mg/m³ total dust and 3 mg/m³ respirable dust is required for all particulates not otherwise regulated. Because of its irritant nature, occupational exposures to ammonium sulfate dust should be maintained at levels somewhat below the regulatory limit for respirable dusts.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Material consists of brownish gray to white crystals or granules. Ammonium sulfate is moderately irritating to the eyes and mildly irritating to the skin. Inhalation may cause sore throat, coughing, or shortness of breath. Moderately toxic by ingestion. Ingestion may cause sore throat, abdominal pain, diarrhea, nausea, and vomiting. Ammonium Sulfate does not burn, but decomposition begins at melting point (235°C) to release ammonia gases and sulfur oxides.

POTENTIAL HEALTH EFFECTS:

EYES: Contact with dust or mist can cause moderate eye irritation.

SKIN: Prolonged contact with dust may cause irritation.

INHALATION: Inhalation of dust may cause sore throat, coughing or shortness of breath.

INGESTION: Ingestion may cause sore throat, abdominal pain, nausea, diarrhea, and vomiting. Animal studies suggest that ulceration or hemorrhage of the G.I. tract could occur. Systemic ammonia poisoning is possible if sufficient absorption occurs.

CHRONIC: No adverse chronic effects are associated with this material.

CARCINOGEN STATUS: Ammonium sulfate is not listed as a carcinogen by the National Toxicology Program (NTP), International Agency for Research on Cancer (IARC), or the Occupational Safety and Health Administration (OSHA).

AGGRAVATED MEDICAL CONDITIONS: Individuals with asthma may be at increased risk from exposure to ammonium sulfate.

For additional toxicology data please refer to Section 11.

4. FIRST AID MEASURES

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EYES: Hold eyelids apart and flush with plenty of water for at least 20 minutes. Get medical attention if irritation persists.

SKIN: Wash contact area with mild soap and water. Get medical attention if irritation persists.

INHALATION: If exposed to excessive levels, remove to fresh air. Get medical attention if cough, irritation, or other symptoms develop.

INGESTION: If swallowed, drink one or two glasses of water and induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES: FLASH POINT: Not flammable

FLAMMABLE LIMITS: LOWER FLAMMABLE LIMIT (% Volume in air): NA
UPPER FLAMMABLE LIMIT (% Volume in air): NA

AUTOIGNITION TEMPERATURE: NA

OSHA FLAMMABILITY CLASS: Noncombustible; substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic vapors. Decomposition starts at temperatures greater than 235°C (455°F).

EXTINGUISHING MEDIA: Extinguish using agent required for type of fire surrounding material. Any standard extinguishing agent may be used.

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should wear NIOSH approved self-contained breathing apparatus with full facepiece and protective clothing to prevent contact with skin and eyes. Use water spray to cool fire exposed containers. Do not spray water directly on material.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Accidental mixing with oxidizers like potassium chlorate, potassium nitrate or potassium nitrite may result in an explosion hazard during fires.

HAZARDOUS DECOMPOSITION PRODUCTS: Sulfur oxides and ammonia gases may be formed in fires involving ammonium sulfate.

6. ACCIDENTAL RELEASE MEASURES

PROCEDURES FOR SPILLS: Wear recommended personal protective equipment (see Section 8). Contain, recover and place material in suitable containers for disposal. See Sections 7 and 13 for storage and waste disposal instructions.

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7. HANDLING AND STORAGE

NORMAL HANDLING: Wear recommended personal protective equipment (see Section 8). Avoid contact with skin, eyes and clothing. Do not breathe dusts. Wash thoroughly after handling. Use with adequate ventilation. Launder contaminated clothing before reuse.

STORAGE RECOMMENDATIONS: Store in a cool, dry area away from strong oxidizers and other incompatible materials.

8. EXPOSURE CONTROL, PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide natural or mechanical ventilation sufficient to maintain levels below the recommended exposure levels.

RESPIRATORY PROTECTION: Not required in adequately ventilated areas. For exposure above the TLV, use NIOSH approved dust respirator.

EYE PROTECTION: Indirectly vented safety goggles are recommended for protection against nuisance dust.

SKIN PROTECTION: Wear long sleeved shirt and pants or coveralls and work gloves when handling to minimize skin contact.

OTHER CONTROLS/PROTECTION: Provide eyewash station and safety shower convenient to work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: NA
MELTING POINT: 235°C (455°F) decomposition starts
SPECIFIC GRAVITY (Water = 1): 1.77
MOLECULAR WEIGHT: 132.16
VAPOR PRESSURE (mm Hg): NA
VAPOR DENSITY (Air = 1): NA
SOLUBILITY IN WATER: 77 g/100g @20°C (68°F)
ODOR: Odorless
APPEARANCE: Brownish-gray to white crystals or granules.
pH: 5.5

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10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.

MATERIALS TO AVOID: Oxidizers, peroxides, potassium chlorate, potassium nitrate, sodium nitrate, metal chlorates, strong bases. Avoid contact or mixing with calcium carbonate (lime) or cement products, due to release of ammonia vapor. Corrosive to carbon steel, copper and copper alloys.

CONDITIONS TO AVOID: Heat: to avoid decomposition.

11. TOXICOLOGICAL INFORMATION

TOXICITY - ACUTE EFFECTS:

ORAL-MAN TDLo: 1500 mg/kg

ORAL-DOMESTIC ANIMAL LDLo: 3500 mg/kg

ORAL-RAT LD50 : 3000 mg/kg

DELAYED (SUBCHRONIC & CHRONIC) EFFECTS: No known adverse chronic effects are associated with ammonium sulfate.

12. ECOLOGICAL INFORMATION

T_{LM} Daphnia magna: 423 mg/l/24 hr. Conditions of bioassay not specified.

13. DISPOSAL CONSIDERATIONS

Dispose of according to applicable federal, state, and local regulations. Incineration or burial in licensed facilities may be appropriate. Mixing with other materials or other alterations to pure product may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

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14. TRANSPORTATION INFORMATION

US DOT ID NUMBER: Not regulated by DOT.

DOT PROPER SHIPPING NAME:

Fertilizer or Fertilizer Materials VIZ: Sulphate of Ammonia, Dry. (Non-Regulated).

US DOT HAZARD CLASS: Not regulated by DOT.

15. REGULATORY INFORMATION

TOXIC SUBSTANCE CONTROL ACT (TSCA) INVENTORY STATUS: Listed on Inventory. Exempt from Update Rule.

SARA TITLE III/CERCLA: Not Regulated.

SARA 313: Ammonium Sulfate solution deleted from TRI effective 6/30/95; must consider any contribution toward total ammonia releases.

SARA 311/312 HAZARD CLASS: Ammonium Sulfate is listed as an acute health hazard.

STATE RIGHT-TO-KNOW REGULATIONS: Listed in: Massachusetts; New Jersey; and Pennsylvania.

FOREIGN INVENTORY STATUS: Listed on: Canadian DSL; European EINECS (EINECS No.: 231-984-1); Japanese ENCS (ENCS No.: 1-400); Korean ECL (ELC Serial No.: KE-01743); Australian AICS; Swiss Giftliste 1 (SWISS No.: G-1121); and the Philippines PICCS.

16. OTHER INFORMATION

HMIS RATINGS:

	HMIS RATING SYSTEM		
Health	1 (slight hazard)	0 - minimal hazard	3 - serious hazard
Flammability	0 (minimal hazard)	1 - slight hazard	4 - severe hazard
Reactivity	0 (minimal hazard)	2 - moderate hazard	

WHMIS CLASSIFICATION (CANADA): D2B

Issued: October 1985

Revisions:

- September 1992
- December 1995
- December 1996
- August 16, 2000: Sections: 2, 5, 9, 12 & 15
- April 16, 2001: Sections: 2, 3, 5, 9, 10 & 15
- November 16, 2001: Sections 4, 7, 14 & 15
- December 27, 2004: Section 8

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