

Material Safety Data Sheet

Version 2.0
Revision Date 01/03/2007

MSDS Number 300000008302
Print Date 05/02/2010

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Ammonium Nitrate

Product Use Description : Solvent.

Company : Air Products and Chemicals, Inc
7201 Hamilton Blvd.
Allentown, PA 18195-1501
GST No. 123600835 RT0001
QST No. 102753981 TQ0001

Telephone : 1-610-481-4911 Corporate
1-800-345-3148 Chemicals Cust Serv
1-800-752-1597 Gases/Electronics Cust Serv

Emergency telephone number : 800-523-9374 USA
01-610-481-7711 International

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Concentration (Weight)
Ammonium nitrate	6484-52-2	98.2 %
Magnesium nitrate	10377-60-3	1.8 %

CHEMICAL FAMILY: Nitrogen Hydride.

3. HAZARDS IDENTIFICATION

Emergency Overview

Oxidant. Strongly supports combustion. May react violently with combustible materials.
Oxidizer, will increase risk of fire or the intensity of a fire. Emergency responders must practice extreme caution when approaching, because of the reactivity potential; may cause violent and sometimes explosive reactions.
Moderate respiratory irritant.
Mild skin irritant.
Moderate eye irritant.

Potential Health Effects

Inhalation : May cause nose, throat, and lung irritation. Inhalation of vapors and/or aerosols in high concentration may cause irritation of respiratory system.

Eye contact : Causes eye irritation.

Skin contact : Mild skin irritation.

Chronic Health Hazard : This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater.

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Exposure Guidelines

- Target Organs : Respiratory system.
Eyes.
Blood.
- Symptoms : Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: Sore throat.

Aggravated Medical Condition

Blood chemistry changes (such as methemoglobinemia leading to cyanosis or loss of consciousness). Adverse respiratory effects (such as cough, tightness of chest or shortness of breath). Asthma. Adverse eye effects (such as conjunctivitis or corneal damage). Eye disease

4. FIRST AID MEASURES

- General advice : Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.
- Eye contact : Rinse immediately with plenty of water also under the eyelids for at least 20 minutes. Remove contact lenses.
- Skin contact : Wash off immediately with plenty of water for at least 20 minutes. Wash off with soap and water. Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay.
- Ingestion : If a person vomits when lying on his back, place him in the recovery position. Prevent aspiration of vomit. Turn victim's head to the side.
- Inhalation : If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Move to fresh air.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water streams
Alcohol-resistant foam.
Carbon dioxide (CO₂).
Dry chemical.
Dry sand.
Limestone powder.
- Specific hazards : Downwind personnel must be evacuated. This product is not flammable, but it is an oxidizing material and can increase risk of fire or the intensity of a fire. Danger of explosion on contact with flammable liquids and other organic materials. Becomes unstable at elevated temperatures. Container may rupture on heating. Material is a strong oxidizer.
- Special protective equipment : In the event of fire, wear self-contained breathing apparatus. Use personal

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for fire-fighters	protective equipment. Wear self contained breathing apparatus for fire fighting if necessary.
Further information	: Use flooding amounts of water in early stages of fire. The product, as distributed, is noncombustible.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	: Wear suitable protective clothing, gloves and eye/face protection. Use self-contained breathing apparatus and chemically protective clothing. Contact with combustible material may cause fire. Evacuate personnel to safe areas.
Methods for cleaning up	: Approach suspected leak areas with caution. Contact Air Products' Emergency Response Center for advice. Place in appropriate chemical waste container.
Additional advice	: Open enclosed spaces to outside atmosphere. Never return spills in original containers for re-use. If possible, stop flow of product.

7. HANDLING AND STORAGE

Handling

Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Contact with combustible material may cause fire. Prevent contamination by any source during handling or storage. This product should be kept in its original container until time of use to avoid any contamination. Never return unused product to its original storage container. All equipment that may contact this product should be cleaned thoroughly to avoid potential reactions with organic contaminants. Empty containers may contain residual liquid or vapors; therefore, empty containers should be handled with care. Dispose of in accordance with local regulations. Avoid contact with eyes. Use only in well-ventilated areas. Use personal protective equipment. When using, do not eat, drink or smoke.

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Full containers should be stored so that oldest stock is used first. Isolate from incompatible materials. Keep away from organic materials. Keep away from combustible material. Keep in a well-ventilated place. See requirements both in OSHA and NFPA 490 for the storage of Ammonium Nitrate Prills (AN). Extreme care should be taken to ensure that stored AN does not become sensitized by intimate mixing with carbonaceous, organic, or combustible material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures

Because of potential high hazard with this material, stringent control measures such as enclosure or isolation may be necessary. To prevent release of material due to equipment failure, back-up controls (e.g. double mechanical seals for process pumps) should be provided. Provide readily accessible eye wash stations and safety showers. Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

Personal protective equipment

Respiratory protection : Wear appropriate respirator when ventilation is inadequate.

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Hand protection	: Neoprene gloves. The breakthrough time of the selected glove(s) must be greater than the intended use period.
Eye protection	: Chemical safety glasses.
Skin and body protection	: Long sleeve shirts and trousers without cuffs.
Special instructions for protection and hygiene	: Provide readily accessible eye wash stations and safety showers. Wash at the end of each workshift and before eating, smoking or using the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: Granular.
Color	: White.
Odor	: Odorless.
Relative density	: 1.7 (water = 1)
Vapor pressure	: < 6.92 mmHg at 21 °C
Density	: 106.128 lb/ft ³ (1.7 g/cm ³) at 70 °F (21 °C)
Boiling point/range	: 262 °F (128 °C)
Melting point/range	: 336 °F (168.89 °C)
Water solubility	: 6.64 g/l

10. STABILITY AND REACTIVITY

Stability	: Stable under normal conditions.
Conditions to avoid	: Avoid oil, grease and all other combustible materials.
Materials to avoid	: Oxidizing agents. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Organic acids (i.e. acetic acid, citric acid etc.). Mineral acids. Incompatible with bases. Reducing agents. Powdered metals. Hydrogen Sulfide. Flammable materials. Organic materials. Combustible material. When contaminated with oil, charcoal, or other organic materials, ammonium

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nitrate should be considered an explosive capable of detonation by combustion.
Reacts violently with reducing agents, strong acids, and powdered metals.

Hazardous decomposition products : Nitrogen oxides (NO_x).
Nitrogen oxide can react with water vapors to form corrosive nitric acid.

11. TOXICOLOGICAL INFORMATION

Acute Health Hazard

Ingestion : LD50 : > 2,000 mg/kg
Species : Rat.
Method : Estimated.

Inhalation : LC50 (1 h) : > 20 mg/l
Species : Rat.
Method : Estimated.

Skin. : LD50 : > 2,000 mg/kg
Species : Rabbit.
Method : Estimated.

Eye irritation/corrosion : Moderate eye irritation.

Acute dermal irritation/corrosion : Mild skin irritation.

Chronic Health Hazard

Absorption of this product into the body leads to the formation of methemoglobin.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Aquatic toxicity : No data is available on the product itself.

Toxicity to other organisms : No data available.

Persistence and degradability

Mobility : No data available.

Bioaccumulation : No data is available on the product itself.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused : ignitable, hazardous waste number D001 Contact supplier if guidance is

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products required.

Contaminated packaging : Dispose of container and unused contents in accordance with federal, state, and local requirements.

14. TRANSPORT INFORMATION

DOT

Proper shipping name : Ammonium nitrate
Class : 5.1
UN/ID No. : UN1942
Packing group : III

IATA

Proper shipping name : Ammonium nitrate
Class : 5.1
UN/ID No. : UN1942
Packing group : III

IMDG

Proper shipping name : AMMONIUM NITRATE
Class : 5.1
UN/ID No. : UN1942
Packing group : III

TDG

Proper shipping name : AMMONIUM NITRATE
Class : 5.1
UN/ID No. : UN1942
Packing group : III

Further Information

Note: If regulated as a hazardous material (Dangerous Good) in transportation, please refer to shipping papers or contact Air Products for complete shipping description information.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard (29 CFR 1910.1200) Hazard Class(es)
Irritant. Oxidizer.

Country	Regulatory list	Notification
USA	TSCA	Included on Inventory.
EU	EINECS	Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer.
Canada	DSL	Included on Inventory.
Australia	AICS	Included on Inventory.

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Japan	ENCS	Included on Inventory.
South Korea	ECL	Included on Inventory.
China	SEPA	Included on Inventory.
Philippines	PICCS	Included on Inventory.

EPA SARA Title III Section 312 (40 CFR 370) Hazard Classification:
Acute Health Hazard Fire Hazard.

EPA SARA Title III Section 313 (40 CFR 372) Component(s) above 'de minimus' level:
Ammonium nitrate
Magnesium nitrate

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)
This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other harm.

WHMIS Hazard Classification
Oxidizing Material, Toxic Material Causing Other Toxic Effects

16. OTHER INFORMATION

HMIS Rating

Health : 2
Flammability : 0
Physical hazard : 3

REVISION NOTES : 15. REGULATORY INFORMATION

Prepared by : Air Products and Chemicals, Inc. Global EH&S Product Safety Department

For additional information, please visit our Product Stewardship web site at
<http://www.airproducts.com/productstewardship/>