Material Safety Data Sheet
Ammonium nitrate

ACC# 01290

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Ammonium nitrate
**Catalog Numbers:** AC205860000, AC205860010, AC205861000, AC205865000, AC423350000, AC423350010, AC423350250, S70708, S70711, S70711, S93123, S93124, A676-212, A676-500, S75244, XXA676100LB
**Synonyms:** Nitric acid, ammonium salt; Norway saltpeter.

**Company Identification:**
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>6484-52-2</td>
<td>Ammonium nitrate</td>
<td>&gt; 98</td>
<td>229-347-8</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: white to gray to brown solid.

**Danger!** Strong oxidizer. Contact with other material may cause a fire. Causes eye, skin, and respiratory tract irritation. May cause methemoglobinemia. Hygroscopic (absorbs moisture from the air). Ammonium nitrate when contaminated with oil, charcoal, or other organic materials should be considered an explosive capable of detonation by combustion or by explosion of adjacent explosive materials.

**Target Organs:** Blood, respiratory system, eyes, skin.

**Potential Health Effects**

**Eye:** Causes eye irritation.

**Skin:** Causes skin irritation.

**Ingestion:** Ingestion of large amounts may cause gastrointestinal irritation. Methemoglobinemia is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), rapid heart rate and chocolate-brown colored blood.

**Inhalation:** Causes respiratory tract irritation. May cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient oxygenation of blood), convulsions, tachycardia, dyspnea (labored breathing), and death. Methemoglobinemia is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), rapid heart rate and chocolate-brown blood. Inhalation can cause systemic acidosis and methemoglobinemia.

**Chronic:** May cause methemoglobinemia, which is characterized by chocolate-brown colored blood,
headache, weakness, dizziness, breath shortness, cyanosis (bluish skin due to deficient oxygenation of blood), rapid heart rate, unconsciousness and possible death. May cause digestive tract disturbances.

Section 4 - First Aid Measures

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**Skin:** Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

**Ingestion:** If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Notes to Physician:** Absorption of this product into the body may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Moderate degrees of cyanosis need to be treated only by supportive measures: bed rest and oxygen inhalation. For methemoglobinemia, administer oxygen alone or with Methylene Blue depending on the methemoglobin concentration in the blood. Cleansing of the entire contaminated area of the body is of utmost importance.

Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Strong oxidizer. Contact with other material may cause fire. May explode under confinement and high temperatures, especially if contaminated.

**Extinguishing Media:** Use water spray to cool fire-exposed containers. Use flooding quantities of water as spray.

**Flash Point:** Not available.

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 2; Flammability: 0; Instability: 2; Special Hazard: OX

Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Keep combustibles (wood, paper, oil, etc.,) away from spilled material.

Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep away from heat, sparks and flame. Keep from contact with clothing and other combustible
materials. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Avoid breathing dust. Inform laundry personnel of contaminant's hazards. Avoid localized heating of ammonium nitrate, potentially leading to development of high temperature areas. Ensure that ammonium nitrate is not exposed to strong shock waves from explosives. Avoid low pH (acidic) conditions.

**Storage:** Do not store near combustible materials. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from acids. Keep away from reducing agents. Avoid storage on wood floors.

### Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

**OSHA Vacated PELs:** Ammonium nitrate: No OSHA Vacated PELs are listed for this chemical.

**Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

### Section 9 - Physical and Chemical Properties

**Physical State:** solid  
**Appearance:** white to gray to brown  
**Odor:** odorless  
**pH:** 5.4 (0.1 M solution)  
**Vapor Pressure:** Negligible.  
**Vapor Density:** Not available.  
**Evaporation Rate:** Negligible.  
**Viscosity:** Not available.  
**Boiling Point:** Not available.  
**Freezing/Melting Point:** 169 deg C  
**Decomposition Temperature:** 210 deg C  
**Solubility:** Soluble.  
**Specific Gravity/Density:** 1.725 @ 25°C  
**Molecular Formula:** NH₄NO₃  
**Molecular Weight:** 80.04

### Section 10 - Stability and Reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling
conditions. Risk of explosion if heated under confinement. Deliquescent (tending to absorb atmospheric water vapor and become liquid).

**Conditions to Avoid:** Dust generation, contamination, heating in a confined space.

**Incompatibilities with Other Materials:** Strong reducing agents, strong acids, finely powdered metals, organic matter, chlorides, combustible materials.

**Hazardous Decomposition Products:** Oxides of nitrogen.

**Hazardous Polymerization:** Has not been reported.

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**Section 11 - Toxicological Information**

**RTECS#:**
CAS# 6484-52-2: BR9050000

**LD50/LC50:**
CAS# 6484-52-2:
Oral, rat: LD50 = 2217 mg/kg;

**Carcinogenicity:**
CAS# 6484-52-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No data available.

**Teratogenicity:** No data available.

**Reproductive Effects:** No data available.

**Neurotoxicity:** No data available.

**Mutagenicity:** No data available.

**Other Studies:** No data available.

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**Section 12 - Ecological Information**

No information available.

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**Section 13 - Disposal Considerations**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

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**Section 14 - Transport Information**

<table>
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<tr>
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<th>US DOT</th>
<th>Canada TDG</th>
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<tbody>
<tr>
<td><strong>Shipping Name:</strong></td>
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<td>AMMONIUM NITRATE</td>
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<tr>
<td><strong>Hazard Class:</strong></td>
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<td><strong>UN Number:</strong></td>
<td>UN1942</td>
<td>UN1942</td>
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<tr>
<td><strong>Packing Group:</strong></td>
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https://fscimage.fishersci.com/msds/01290.htm

2/7/2005
Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 6484-52-2 is listed on the TSCA inventory.

Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.

Section 12b
None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.

SARA Codes
CAS # 6484-52-2: acute, flammable, reactive.

Section 313
No chemicals are reportable under Section 313.

Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depleters.
This material does not contain any Class 2 Ozone depleters.

Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE
CAS# 6484-52-2 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California Prop 65
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols:
XI O

Risk Phrases:
R 36/37/38 Irritating to eyes, respiratory system and skin.
R 8 Contact with combustible material may cause fire.

Safety Phrases:
S 17 Keep away from combustible material.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 37/39 Wear suitable gloves and eye/face protection.

WGK (Water Danger/Protection)
CAS# 6484-52-2: 1

**Canada - DSL/NDSL**
CAS# 6484-52-2 is listed on Canada's DSL List.

**Canada - WHMIS**
This product has a WHMIS classification of C, D2B.

### Canadian Ingredient Disclosure List

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Section 16 - Additional Information

**MSDS Creation Date:** 12/12/1997  
**Revision #5 Date:** 8/09/2004

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