

MSDS Number: **A6048** \* \* \* \* \* *Effective Date: 07/21/04* \* \* \* \* \* *Supersedes:*  
*11/02/01*



## Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.  
222 Red School Lane  
Phillipsburg, NJ 08865



Mallinckrodt  
CHEMICALS



24 Hour Emergency Telephone: 908-859-2151  
CHEMTREC: 1-800-424-9300

National Response in Canada  
CANUTEC: 613-996-6666

Outside U.S. and Canada  
Chemtec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

# AMMONIUM NITRATE

## 1. Product Identification

**Synonyms:** Nitric acid, ammonium salt

**CAS No.:** 6484-52-2

**Molecular Weight:** 80.04

**Chemical Formula:** NH<sub>4</sub>NO<sub>3</sub>

**Product Codes:**

J.T. Baker: 0729, 0731

Mallinckrodt: 3436

## 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Hazardous		
-----	-----	-----
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Ammonium Nitrate	6484-52-2	99 - 100%
Yes		

### 3. Hazards Identification

#### Emergency Overview

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**DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE OR EXPLOSION. MAY BE HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.**

**SAF-T-DATA<sup>(tm)</sup>** Ratings (Provided here for your convenience)

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Health Rating: 2 - Moderate

Flammability Rating: 1 - Slight

Reactivity Rating: 3 - Severe (Oxidizer)

Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: Yellow (Reactive)

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#### Potential Health Effects

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##### **Inhalation:**

May cause irritation to the respiratory tract; symptoms may include coughing, sore throat, and shortness of breath. At high temperatures, exposure to toxic nitrogen oxides decomposition products can quickly cause acute respiratory problems. Inhalation of large amounts causes systemic acidosis and abnormal hemoglobin.

##### **Ingestion:**

Large oral doses of nitrates may cause dizziness, abdominal pain, vomiting, bloody diarrhea, weakness, convulsions, and collapse. Harmful if swallowed. May cause methemoglobinemia resulting in cyanosis.

##### **Skin Contact:**

Causes irritation to skin. Symptoms include redness, itching, and pain.

##### **Eye Contact:**

Causes irritation, redness, and pain.

##### **Chronic Exposure:**

Small repeated oral doses of nitrates may cause weakness, depression, headache, and mental impairment.

##### **Aggravation of Pre-existing Conditions:**

No information found.

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## 4. First Aid Measures

**Inhalation:**

Remove to fresh air. Get medical attention for any breathing difficulty.

**Ingestion:**

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Skin Contact:**

Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

**Eye Contact:**

Wash thoroughly with running water. Get medical advice if irritation develops.

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## 5. Fire Fighting Measures

**Fire:**

Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. May support combustion in an existing fire.

**Explosion:**

Contact with oxidizable substances may cause extremely violent combustion. Sealed containers may rupture when heated. Sensitive to mechanical impact.

**Fire Extinguishing Media:**

Use flooding amounts of water in early stages of fire involving ammonium nitrate. Use any means suitable for extinguishing surrounding fire.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## 6. Accidental Release Measures

Remove sources of heat and ignition.

Collected waste may be transferred to a closed, preferably metal, container and sent to a RCRA approved waste disposal facility.

Alternatively, sweep spill into noncombustible container and dissolve in large amount of water. Add soda ash. Mix and neutralize with 6M-HCl. Neutralized sludge may be sent to an approved waste disposal facility.

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## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Protect against physical damage. Store in a dry location separate from combustible, organic or other readily oxidizable materials. Avoid storage on wood floors. Remove and dispose of any spilled dichromates; do not return to original containers. Do not store above 54C (130F) preferably below 30C (86F). 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.

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## 8. Exposure Controls/Personal Protection

### **Airborne Exposure Limits:**

None established.

### **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

### **Personal Respirators (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.

### **Skin Protection:**

Wear protective gloves and clean body-covering clothing.

### **Eye Protection:**

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

### **Appearance:**

Colorless crystals.

### **Odor:**

Odorless.

### **Solubility:**

118g/100g water @ 0C (32F).

### **Specific Gravity:**

1.73 @ 23C (77F)

### **pH:**

5.4

**% Volatiles by volume @ 21C (70F):**

0

**Boiling Point:**

210C (410F) Decomposes.

**Melting Point:**

170C (338F)

**Vapor Density (Air=1):**

No information found.

**Vapor Pressure (mm Hg):**

No information found.

**Evaporation Rate (BuAc=1):**

No information found.

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## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage. Hygroscopic.

**Hazardous Decomposition Products:**

Emits nitrous oxides when heated to decomposition. Liberates ammonia in reaction with strong alkalis.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Aluminum, antimony, chromium, copper, iron, lead, magnesium, manganese, nickel, zinc, brass, oil, charcoal, organic material, acetic acid, ammonium chloride, bismuth, cadmium, chlorides, cobalt, phosphorus, potassium and ammonium sulfate, sodium, sodium hypochlorite, sodium perchlorate, sodium-potassium alloy, and sulfur.

**Conditions to Avoid:**

Heat, flame, ignition sources, dusting and incompatibles. Moisture and combustible materials. Shock sensitive.

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## 11. Toxicological Information

Oral rat LD50: 2217 mg/kg.

-----\Cancer Lists\-----			
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Ingredient Category	---NTP Carcinogen---		
	Known	Anticipated	IARC
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Ammonium Nitrate (6484-52-2)	No	No	
None			

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## 12. Ecological Information

### Environmental Fate:

When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is not expected to evaporate significantly. When released into water, this material is expected to readily biodegrade.

### Environmental Toxicity:

No information found.

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## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste 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.

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## 14. Transport Information

### Domestic (Land, D.O.T.)

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**Proper Shipping Name:** AMMONIUM NITRATE

**Hazard Class:** 5.1

**UN/NA:** UN1942

**Packing Group:** III

**Information reported for product/size:** 300LB

### International (Water, I.M.O.)

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**Proper Shipping Name:** AMMONIUM NITRATE

**Hazard Class:** 5.1

**UN/NA:** UN1942

**Packing Group:** III

**Information reported for product/size:** 300LB

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## 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----

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Ingredient  
Australia

TSCA EC Japan

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Ammonium Nitrate (6484-52-2)          Yes  Yes  Yes
Yes

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-----\Chemical Inventory Status - Part 2\-----
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Ingredient                                Korea  --Canada--
Phil.                                   DSL    NDSL
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Ammonium Nitrate (6484-52-2)          Yes   Yes   No
Yes

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-----\Federal, State & International Regulations - Part 1\-----
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313-----
Ingredient                                -SARA 302-  -----SARA
Chemical Catg.                          RQ    TPQ    List
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Ammonium Nitrate (6484-52-2)          No    No    No
Nitrate cmpd

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-----\Federal, State & International Regulations - Part 2\-----
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TSCA-
Ingredient                                -RCRA-      -
CERCLA                                261.33      8(d)
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Ammonium Nitrate (6484-52-2)          No          No          No

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Chemical Weapons Convention: No      TSCA 12(b): No      CDTA: No  
SARA 311/312: Acute: Yes      Chronic: No      Fire: No      Pressure: No  
Reactivity: Yes      (Pure / Solid)

**Australian Hazchem Code:** 1[S]

**Poison Schedule:** None allocated.

#### WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## 16. Other Information

**NFPA Ratings:** Health: **0** Flammability: **0** Reactivity: **3** Other: **Oxidizer**

#### Label Hazard Warning:

DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY

CAUSE FIRE OR EXPLOSION. MAY BE HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

**Label Precautions:**

Keep from contact with clothing and other combustible materials.

Do not store near combustible materials.

Store in a tightly closed container.

Avoid breathing dust.

Avoid contact with eyes, skin and clothing.

Remove and wash contaminated clothing promptly.

Use only with adequate ventilation.

Wash thoroughly after handling.

Store preferably below 30C

**Label First Aid:**

If inhaled, remove to fresh air. Get medical attention for any breathing difficulty. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In all cases, get medical attention.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

MSDS Section(s) changed since last revision of document include: 3, 16.

**Disclaimer:**