

MSDS Number: **A5688** \* \* \* \* \* *Effective Date: 02/15/08* \* \* \* \* \*  
*Supercedes: 04/15/05*

**MSDS** **Material Safety Data Sheet**

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



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 Carbonate

## 1. Product Identification

**Synonyms:** Carbonic Acid,Diammonium Salt; Diammonium Carbonate;Crystal Ammonia

**CAS No.:** 506-87-6

**Molecular Weight:** 96.09

**Chemical Formula:** (NH<sub>4</sub>)<sub>2</sub>CO<sub>3</sub>

**Product Codes:**

J.T. Baker: 0642, 0647, 0650, 0651

Mallinckrodt: 3330, 3352

## 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Hazardous		
-----	-----	-----
-----		
Ammonium Carbonate	506-87-6	100%
Yes		

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### 3. Hazards Identification

#### Emergency Overview

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**WARNING! 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: 2 - Moderate

Contact Rating: 3 - Severe

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

Storage Color Code: Green (General Storage)

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#### Potential Health Effects

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##### **Inhalation:**

Dust may cause irritation of the nose, throat, and lungs. Ammonia vapors released upon decomposition may cause irritation of the upper respiratory tract, with coughing, vomiting, and redness to the mucous membranes. Higher concentrations (> 1000 ppm) may cause restlessness, tightness in the chest, pulmonary edema, weak pulse, and cyanosis.

##### **Ingestion:**

Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea.

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

Causes irritation to skin. Symptoms include redness, itching, and pain. Causes burning or serious burns if decontamination is delayed.

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

Causes irritation, redness, and pain. Causes burning or serious burns if decontamination is delayed.

**Chronic Exposure:**

No information found.

**Aggravation of Pre-existing Conditions:**

Persons with pre-existing lung disease may be more susceptible to the effects of this substance.

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## 4. First Aid Measures

**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:**

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

**Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

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## 5. Fire Fighting Measures

**Fire:**

Not considered to be a fire hazard.

**Explosion:**

Generation of ammonia gas may be an explosion hazard.

**Fire Extinguishing Media:**

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

Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

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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. Isolate from incompatible substances. Store below 30C. 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:**

For Ammonia:

- OSHA Permissible Exposure Limit (PEL) - 50 ppm
- ACGIH Threshold Limit Value (TLV) - 25 ppm (TWA), 35 ppm (STEL)

### **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. 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):**

If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece respirator with an ammonia/methylamine cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Protection:**

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

**Appearance:**

Colorless crystal or white powder.

**Odor:**

Strong ammonia-like odor.

**Solubility:**

Soluble in water, decomposes in hot water

**Specific Gravity:**

1.50 @ 20C/4C

**pH:**

9.0 (100g/L H<sub>2</sub>O)

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

0

**Boiling Point:**

@ 760 mm Hg (Decomposes)

**Melting Point:**

58C (136F)

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

No information found.

**Vapor Pressure (mm Hg):**

760 @ 60C (140F)

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

No information found.

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## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage. Becomes unstable upon exposure to air and converts into ammonium bicarbonate. This process liberates ammonia and carbon dioxide.

**Hazardous Decomposition Products:**

Burning may produce ammonia, carbon monoxide, carbon dioxide, nitrogen oxides. Contact with water or prolonged contact with air may liberate ammonia.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Sodium hypochlorate, acids and acid salts, iron salts, zinc, alkaloids, aluminum and calomel, sodium nitrate and nitrites. Corrosive to nickel, copper and other alloys.

**Conditions to Avoid:**

Exposure to heat, prolonged exposure to air, contact with water, and incompatibles.

## 11. Toxicological Information

For Ammonium Carbonate, Oral rat LD50: 2150 mg/kg

Ingredient Category	---NTP Carcinogen---		IARC
	Known	Anticipated	
Ammonium Carbonate (506-87-6)	No	No	None

## 12. Ecological Information

**Environmental Fate:**

No information found.

**Environmental Toxicity:**

96 Hr LC50 fathead minnow: 37 mg/L

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. 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

Not regulated.

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## 15. Regulatory Information

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-----\Chemical Inventory Status - Part 1\-----
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Ingredient                                TSCA  EC   Japan
Australia
-----
Ammonium Carbonate (506-87-6)            Yes  Yes  Yes   Yes
```

```
-----\Chemical Inventory Status - Part 2\-----
--
Ingredient                                Korea  DSL   NDSL  Phil.
-----
Ammonium Carbonate (506-87-6)            Yes   Yes   No    Yes
```

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-----\Federal, State & International Regulations - Part 1\-----
--
Ingredient                                -SARA 302-  -SARA 313-
Catg.                                     RQ   TPQ   List  Chemical
-----
Ammonium Carbonate (506-87-6)            No   No    No    No
```

```
-----\Federal, State & International Regulations - Part 2\-----
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Ingredient                                CERCLA  -RCRA-  -TSCA-
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Ammonium Carbonate (506-87-6)            5000   261.33  8(d)
```

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

**Australian Hazchem Code: None allocated.**

**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.

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## 16. Other Information

**NFPA Ratings:** Health: **2** Flammability: **0** Reactivity: **2**

**Label Hazard Warning:**

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

**Label Precautions:**

Avoid contact with eyes, skin and clothing.

Wash thoroughly after handling.

Avoid breathing dust or vapors.

Keep container closed.

Use only with adequate ventilation.

**Label First Aid:**

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

No Changes.

**Disclaimer:**

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