

Ammonium Carbamate - MSDS

1. Product Name and Identification

Product Name: [Ammonium Carbamate](#)

Chemical Formula: NH₄CO₂NH₂

Synonyms: Carbamic acid ammonium salt, Ammonium carbamate

CAS Number: 1111-78-0

Manufacturer/Supplier: [Insert Manufacturer Name]

Emergency Contact Information: [Insert Emergency Contact Details]

2. Composition/Ingredients

Substance: Ammonium Carbamate

Chemical Name: Ammonium Carbamate

CAS Number: 1111-78-0

Percent by Weight: ≥ 98%

3. Hazards Identification

GHS Classification:

- Acute toxicity - Oral (Category 4)
- Eye irritation (Category 2A)
- Specific Target Organ Toxicity - Single Exposure (Category 3, Respiratory System)

Signal Word: Warning

Hazard Statements:

- H302: Harmful if swallowed.
- H319: Causes serious eye irritation.
- H335: May cause respiratory irritation.

Precautionary Statements:

- P261: Avoid breathing dust or mist.
- P264: Wash hands thoroughly after handling.
- P270: Do not eat, drink, or smoke when using this product.
- P280: Wear protective gloves, clothing, and eye protection.
- P301+P312: If swallowed, call a doctor or poison control center if you feel unwell.

Potential Health Effects:

- **Eye Contact:** Causes irritation and redness.
- **Skin Contact:** May cause mild irritation upon prolonged exposure.
- **Inhalation:** Irritates respiratory tract, causing coughing or difficulty breathing.
- **Ingestion:** Can cause nausea, abdominal pain, or gastrointestinal discomfort.

4. First Aid Measures

General Advice: Seek immediate medical attention in severe or prolonged cases.

- **Eye Contact:** Rinse immediately with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Consult a physician if irritation persists.
- **Skin Contact:** Wash affected area with soap and water. Remove contaminated clothing. Seek medical care if skin irritation persists.
- **Inhalation:** Move to fresh air immediately. If symptoms such as coughing or shortness of breath occur, obtain medical attention.
- **Ingestion:** Rinse mouth thoroughly with water. Do NOT induce vomiting. Contact a poison control center or seek immediate medical help.

5. Handling and Storage

Handling:

- Avoid creating dust or breathing vapors.
- Handle only in well-ventilated areas or under local exhaust conditions.
- Wear appropriate personal protective equipment.

Storage:

- Store in a cool, dry, and well-ventilated place.
- Keep containers tightly sealed when not in use.
- Avoid exposure to heat, moisture, and incompatible materials, such as strong acids and bases.

6. Exposure Controls/Personal Protection

Exposure Limits: No specific exposure limits established.

Engineering Controls:

- Use mechanical ventilation or local exhaust to minimize dust or vapor exposure.

Personal Protective Equipment (PPE):

- **Eye Protection:** Safety goggles with side shields.
- **Skin Protection:** Chemical-resistant gloves such as nitrile or latex.

- **Respiratory Protection:** Use an approved dust respirator under conditions of inadequate ventilation.
- **Clothing:** Wear long-sleeved protective clothing to reduce skin exposure.

7. Physical and Chemical Properties

- **Appearance:** White crystalline solid
- **Odor:** Slight ammonia odor
- **Boiling Point:** Decomposes before boiling
- **Melting Point:** Decomposes at approximately 60°C (140°F)
- **Flash Point:** Not applicable
- **Density:** 1.58 g/cm³ at 25°C
- **Vapor Pressure:** Negligible at ambient temperature
- **Solubility:** Soluble in water, forming a slightly alkaline solution
- **pH:** Approximately 8–9 (aqueous solution)

8. Stability and Reactivity

Chemical Stability: Stable under recommended use and storage conditions.

Conditions to Avoid:

- Exposure to heat, moisture, and direct sunlight.
- Prolonged exposure to air may result in decomposition.

Materials to Avoid:

- Strong acids and strong bases.
- Oxidizing agents.

Hazardous Decomposition Products:

- Ammonia gas, carbon dioxide, and carbon monoxide upon decomposition.

9. Toxicological Information

Acute Toxicity:

- **Oral LD50 (Rat):** 1,570 mg/kg
- **Dermal LD50 (Rabbit):** 2,000 mg/kg (estimated)

Irritation Properties:

- Causes eye and respiratory system irritation. Mild skin irritant under prolonged exposure.

Symptoms of Exposure:

- Coughing, difficulty breathing, dizziness, and respiratory discomfort upon inhalation.
- Redness and itching of skin and eyes with contact.
- Abdominal pain, nausea, or vomiting when ingested.

Chronic Effects:

- No evidence of carcinogenic, mutagenic, or reproductive toxicity under typical use conditions. Prolonged exposure may cause sensitization in some individuals.

10. Disposal Considerations

Waste Disposal Methods:

- Dispose of product and packaging in accordance with local, regional, and national environmental regulations. Do not release into sewers, water bodies, or soil.
- Neutralize any residue before disposal, if allowed.

Container Handling:

- Do not reuse empty containers without proper cleaning. Treat all waste materials as hazardous unless decontaminated.