

## Safety Data Sheet

### 1. IDENTIFICATION

<b>Product Identifier:</b>	<b>Ammonium Carbonate</b>
<b>Product Code(s):</b>	A1069
<b>Synonyms:</b>	Crystal Ammonia; Baker's Ammonia; Salt of Hartshorn
<b>Recommended Use:</b>	For manufacturing, industrial, and laboratory use only. Use as a catalyst or as a laboratory solute.
<b>Uses Advised Against:</b>	Not for food, drug, or household use.
<b>Supplier:</b>	Rocky Mountain Reagents, Inc. 4621 Technology Drive, Golden, CO 80403 Phone: (303) 762-0800 Fax: (303) 762-1240
<b>Emergency Phone Number:</b>	For health emergency, call poison control: (800) 222-1222.

### 2. HAZARDS IDENTIFICATION

<b>Hazard Classifications:</b>	Acute Toxicity – Oral: Category 4
	Eye Damage/Irritation: Category 2A

**Signal Word:** WARNING

**Hazard Statements:** Harmful if swallowed.  
Causes serious eye irritation.

**Pictograms:**



**Precautionary Statements:**

**Prevention:** Wash thoroughly after handling.  
Do not eat, drink, or smoke when using this product.  
Wear protective gloves, protective clothing, eye protection, and face protection.

**Response:** If swallowed: Call a poison center or doctor if you feel unwell. Rinse mouth.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

**Storage:** Not applicable.

**Disposal:** Dispose of contents and container in accordance with local, regional, national, and international regulations.

**Hazards Not Otherwise Classified:** Harmful to aquatic life. Avoid release to the environment.

**Toxicity Statement:** Not applicable.

### 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Component	Common Name / Synonyms	CAS#	Chemical Formula	% by Weight
Ammonium Carbamate	Ammonium Aminoformate	1111-78-0	NH <sub>2</sub> COONH <sub>4</sub>	50.0
Ammonium Bicarbonate	Ammonium Hydrogen Carbonate	1066-33-7	NH <sub>4</sub> HCO <sub>3</sub>	50.0

**Trade Secret Statement:** Not applicable.

### 4. FIRST AID MEASURES

#### First Aid Procedures:

**Inhalation:** Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician if symptoms occur.

**Ingestion:** Rinse mouth. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, keep head low so that vomit does not enter lungs. Never give anything by mouth to an unconscious person. Call a physician or poison control center if symptoms occur.

**Skin Contact:** Wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if symptoms occur.

**Eye Contact:** Check for and remove contact lenses, if present and easy to do. Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician if symptoms occur.

**General Advice:** Poison information centers in each state can provide additional assistance for scheduled poisons. Ensure that those providing first aid and medical personnel are aware of the material(s) involved and take precautions to protect themselves.

**Symptoms and Effects:** Irritation, difficulty breathing, coughing, nausea, vomiting, pulmonary edema. Harmful if swallowed. May cause irritation to the eyes, skin, respiratory tract, and gastrointestinal tract. Prolonged or repeated exposure may affect the lungs.

**Immediate Medical Care/  
Special Treatment:** Get medical attention if feeling unwell or concerned. Treat symptomatically.

### 5. FIREFIGHTING MEASURES

**Suitable Extinguishing Media:** Water spray, dry powder, alcohol resistant foam, carbon dioxide.

**Unsuitable Extinguishing Media:** Do not use a solid (straight) water stream, as it may scatter and spread fire.

**Hazardous Combustion Products:** Nitrogen oxides, carbon oxides, ammonia.

**Specific Hazards:** Excessive thermal conditions or exposure to incompatible materials (see Section 10) may yield corrosive and/or toxic fumes.

**Special Protective Equipment/Precautions for Firefighters:** As in any fire, wear MSHA/NIOSH-approved (or equivalent), self-contained, positive-pressure or pressure-demand breathing apparatus and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions and Protective Equipment:** Isolate hazard area and keep unnecessary and unprotected personnel away from the area of the leak or spill. Keep upwind. Wear appropriate personal protective equipment (see Section 8). Avoid contact with eyes, skin, and clothing.

**Emergency Procedures:** In case of chemical emergency, or if unsure how to address an accidental release, consult a professional (see Section 1).

**Methods for Containment:** Prevent entry into waterways, sewer, basements, or confined areas. Avoid generation of product as dust. Product should not be released to the environment. Contain and recover waste when possible.

**Methods for Cleanup:** Sweep or collect spill with an inert material (e.g. vermiculite, dry sand, earth, cloth, or fleece) and place in a non-combustible container for reclamation or disposal. Do not flush to sewer. Clean contaminated surface thoroughly. Residues from spills can be diluted with water. Never return spills in original containers for reuse. Clean up in accordance with all applicable regulations.

## 7. HANDLING AND STORAGE

**Handling:** Wear personal protective equipment (see Section 8). Use only in well-ventilated areas. Provide sufficient air exchange and/or exhaust in work rooms. Limit exposure to air and moisture. Avoid contact with skin, eyes, and clothing. Avoid generation of dust. Do not breathe product dust. Do not ingest. When using, do not eat, drink, or smoke. Keep away from incompatible materials (see Section 10). Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Containers of this material may be hazardous when empty, as they retain product residues. Observe all warnings and precautions listed for this product.

**Storage:** Store in a cool, dry, ventilated area. Store away from heat and incompatible materials (see Section 10). Store in original container. Keep containers tightly closed and upright. Keep away from food, drink, and animal foodstuffs. Keep out of the reach of children. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of this product.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Exposure Limits:** Ammonium Carbamate: No information found.

Ammonium Bicarbonate: No information found.

**Engineering Controls:** Ensure adequate ventilation. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls

to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Personal Protective Measures:**

**Eye/Face Protection:** Wear safety glasses with side shields or goggles. Maintain approved eye wash station and accessible rinse facilities in work area.

**Skin Protection:** Wear appropriate chemical resistant clothing (with long sleeves) and appropriate chemical resistant gloves.

**Respiratory Protection:** An air-purifying, NIOSH-approved respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a positive-pressure, air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are unknown, or if any other circumstances exist where air-purifying respirators may not provide adequate protection.

**Specific Requirements for Personal Protective Equipment:** Ensure that glove material is compatible with this product. This information is available from glove manufacturers.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

*Unless otherwise indicated, all properties are given at 25 °C and standard pressure.*

**Appearance:** White, opaque, crystalline solid.  
**Odor:** Ammoniac.  
**Odor Threshold:** No information found.  
**Formula Weight:** Mixture.  
**pH:** 9 (100 g/L aqueous at 20 °C)  
**Melting/Freezing Point:** No information found.  
**Boiling Point/Range:** No information found.  
**Decomposition Temperature:** ≥ 59 °C  
**Flash Point:** Not applicable.  
**Auto-ignition Temperature:** Not applicable.  
**Flammability:** Not flammable.  
**Flammability/Explosive Limits:** Not applicable.  
**Solubility:** 320 g/L aqueous at 20 °C  
**Vapor Pressure:** 52 mmHg at 20 °C; 141 mmHg at 30 °C  
**Vapor Density:** No information found.  
**Specific Gravity:** 1.6 (Water = 1)  
**Evaporation Rate:** No information found.  
**Viscosity:** No information found.  
**Partition Coefficient (n-octanol/water):** No information found.

**10. STABILITY AND REACTIVITY**

**Reactivity Data:** No information found.

<b>Chemical Stability:</b>	Stable under normal conditions. Sensitive to air. Hygroscopic.
<b>Conditions to Avoid:</b>	Excessive heat, exposure to air, exposure to moisture, incompatible materials.
<b>Incompatible Materials:</b>	Oxidizers, acids, bases.
<b>Hazardous Decomposition Products:</b>	Carbon oxides, nitrogen oxides, ammonia.
<b>Possibility of Hazardous Reactions:</b>	May react vigorously or violently with the incompatible materials listed above. Excessive thermal conditions may yield hazardous decomposition products listed above.
<b>Hazardous Polymerization:</b>	Will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>Routes of Exposure:</b>	Inhalation, ingestion, skin contact, eye contact.												
<b>Acute Effects:</b>	Harmful if swallowed. May cause irritation to the eyes, skin, respiratory tract, and gastrointestinal tract.												
<b>Chronic Effects:</b>	Prolonged or repeated exposure may affect the lungs.												
<b>Toxicological Data:</b>	<table> <tr> <td>Ammonium Carbamate:</td> <td>LD<sub>50</sub> Oral, Rat:</td> <td>681 mg/kg</td> </tr> <tr> <td></td> <td>LD<sub>50</sub> Inhalation, Rat:</td> <td>6.6 mg/L 4 h</td> </tr> <tr> <td></td> <td colspan="2">Causes eye irritation based on animal data.</td> </tr> <tr> <td>Ammonium Bicarbonate:</td> <td>LD<sub>50</sub> Oral, Rat:</td> <td>1580 mg/kg</td> </tr> </table>	Ammonium Carbamate:	LD <sub>50</sub> Oral, Rat:	681 mg/kg		LD <sub>50</sub> Inhalation, Rat:	6.6 mg/L 4 h		Causes eye irritation based on animal data.		Ammonium Bicarbonate:	LD <sub>50</sub> Oral, Rat:	1580 mg/kg
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<b>Symptoms of Exposure:</b>	Irritation, difficulty breathing, coughing, nausea, vomiting, pulmonary edema.												
<b>Carcinogenic Effects:</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.												

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicological Data:</b>	<table> <tr> <td>Ammonium Carbamate:</td> <td></td> </tr> <tr> <td>EC<sub>50</sub>, Water Flea (<i>Daphnia magna</i>):</td> <td>63.7 mg/L 48 h</td> </tr> <tr> <td>LC<sub>50</sub>, Fathead Minnow (<i>Pimphales promelas</i>):</td> <td>37.0 mg/L 96 h</td> </tr> <tr> <td>Ammonium Bicarbonate:</td> <td></td> </tr> <tr> <td>EC<sub>50</sub>, Water Flea (<i>Daphnia magna</i>):</td> <td>145.6 mg/L 48 h</td> </tr> <tr> <td>LC<sub>50</sub>, Rainbow Trout (<i>Oncorhynchus mykiss</i>):</td> <td>63.4 mg/L 96 h</td> </tr> </table>	Ammonium Carbamate:		EC <sub>50</sub> , Water Flea ( <i>Daphnia magna</i> ):	63.7 mg/L 48 h	LC <sub>50</sub> , Fathead Minnow ( <i>Pimphales promelas</i> ):	37.0 mg/L 96 h	Ammonium Bicarbonate:		EC <sub>50</sub> , Water Flea ( <i>Daphnia magna</i> ):	145.6 mg/L 48 h	LC <sub>50</sub> , Rainbow Trout ( <i>Oncorhynchus mykiss</i> ):	63.4 mg/L 96 h
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<b>Persistence and Degradability:</b>	Not expected to bioaccumulate or biodegrade.												
<b>Environmental Effects:</b>	Harmful to aquatic organisms. Avoid release to the environment.												

## 13. DISPOSAL INFORMATION

<b>Disposal Instructions:</b>	Dispose of this material and its container to an approved waste collection point. Minimize exposure to product waste (see Section 8). Do not dispose unused waste down drains or into sewers. All wastes must be handled in accordance with local, state, and federal regulations.
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**Contaminated Packaging:** Because containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

**Waste Codes:** No information found.

## 14. TRANSPORT INFORMATION

**DOT:** Not regulated.

**Environmental Hazard Regulations:** No information found.

**Other Transport Precautions:** No information found.

## 15. REGULATORY INFORMATION

### U.S. Federal Regulations:

**OSHA:** This product is considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Inventory:** All components of this product are on the U.S. TSCA Inventory.

### U.S. EPCRA (SARA Title III):

**Section 302:** No information found.

**Sections 311/312:**

Hazard Category	List (Yes/No)
Section 311 – Hazardous Chemical	Yes
Immediate Hazard	Yes
Delayed Hazard	No
Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No

**Section 313:** No information found.

**CERCLA Reportable Quantities:** Ammonium Carbamate: 5000 lb  
Ammonium Bicarbonate: 5000 lb

**International Inventories:**

Country or Region	Inventory Name	On Inventory (Yes/No)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

\*A "Yes" indicates that the listed component(s) of this product comply with the inventory requirements administered by the governing country(s).

**16. OTHER INFORMATION****Disclaimer:**

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**Issue Date:**

May 18, 2016

**Reason for Revision:**

Update of Section 9 over 12/08/2015 version.