Material Safety Data Sheet  
Ammonium chloride, ACS

Section 1 - Chemical Product and Company Identification

MSDS Name:  
Ammonium chloride, ACS

Catalog Numbers:  
LC10972

Synonyms:  
Ammonium muriate, sal ammonia, salmiac.

Company Identification:  
LabChem, Inc.  
200 William Pitt Way  
Pittsburgh, PA 15238

Company Phone Number:  
(412) 826-5230

Emergency Phone Number:  
(800) 424-9300

CHEMTREC Phone Number:  
(800) 424-9300

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name:</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>12125-02-9</td>
<td>Ammonium chloride</td>
<td>100%</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

Emergency Overview

Appearance: white crystalline powder

Caution! Causes eye irritation. May be harmful if swallowed. May cause skin and respiratory tract irritation. Hygroscopic (absorbs moisture from air.)

Target Organs: Eyes.

Potential Health Effects

Eye:  
Causes eye irritation.

Skin:  
May cause skin irritation. May be harmful if absorbed through the skin.

Ingestion:  
May cause irritation of the digestive tract. May cause systemic toxicity with acidosis. May be harmful if swallowed.

Inhalation:  
If heated, dust or fume may cause respiratory tract irritation. May be harmful if inhaled. Ammonium chloride fume may cause an asthma-like allergy. Future exposure may trigger asthma attacks with shortness of breath, wheezing, coughing, and chest tightness.
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Chronic:
Prolonged or repeated skin contact may cause dermatitis. Ammonium ions may accumulate in individuals with liver or kidney disease producing jerky respirations and periods of apnea.

Section 4 - First Aid Measures

Eyes:
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid at once.

Skin:
Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid at once.

Ingestion:
Do not induce vomiting. If victim is conscious, give 2-4 glasses of water or milk. Get medical aid at once.

Inhalation:
Give artificial respiration if necessary. Move victim to fresh air. Keep victim warm and at rest. Get medical aid at once.

Notes to Physician:
Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information:
Negligible fire and explosion hazard when exposed to heat or flame. Irritating and highly toxic gases may be generated by thermal decomposition or combustion. Move container if possible; avoid breathing vapors or dust. May polymerize explosively in a fire.

Extinguishing Media:
For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

Autoignition Temperature:
No information found.

Flash Point:
No information found.

NFPA Rating:
Health-2; flammability-0; reactivity-0

Explosion Limits:
Lower: n/a  Upper: n/a

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. Avoid creating airborne particles. Provide ventilation.
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Section 7 - Handling and Storage

Handling:
Wash thoroughly after handling. Avoid breathing dust, vapor, mist, or gas.

Storage:
Store capped at room temperature. Protect from heat and incompatibles.

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 general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium chloride</td>
<td>10 mg/m3 TWA (fume); 20 mg/m3 STEL (fume)</td>
<td>10 mg/m3 TWA (fume)</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs:
Ammonium chloride: 10 mg/m3 TWA

Personal Protective Equipment

Eyes:
Do not wear contact lenses when working with chemicals. An eye wash fountain should be available in the immediate work area. Wear appropriate protective eyeglasses or chemical safety goggles as described in 29 CFR 1910.133.

Skin:
Wear appropriate protective gloves to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.

Respirators:
Follow the OSHA respirator regulations found in 29 CFR 1910.134. Use a NIOSH/MSHA approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State:</td>
<td>Crystalline powder</td>
</tr>
<tr>
<td>Color:</td>
<td>Colorless or white</td>
</tr>
<tr>
<td>Odor:</td>
<td>Odorless</td>
</tr>
<tr>
<td>pH:</td>
<td>5.0 (10% solution at 25°C)</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>1 mm Hg @ 160.4°C</td>
</tr>
<tr>
<td>Vapor Density:</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>Negligible</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>520°C (sublimes)</td>
</tr>
</tbody>
</table>
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Freezing/Melting Point: 328°C
Decomposition Temperature: Not available
Solubility in water: 39.6% at 176°F
Specific Gravity/Density: 1.53 (Water = 1)
Molecular Formula: NH₄Cl
Molecular Weight: 53.4877

Section 10 - Stability and Reactivity

Chemical Stability:
Stable at room temperature in closed containers under normal storage and handling conditions. Hygroscopic; absorbs moisture from the air.

Conditions to Avoid:
Excess heat, exposure to moist air or water.

Incompatibilities with Other Materials:
Acids, bases, bromine trifluoride, nitrates, potassium chlorates, silver salts, carbonates, bromine pentafluoride, lead salts.

Hazardous Decomposition Products:
Ammonia and hydrochloric acid fumes.

Hazardous Polymerization:
May occur.

Section 11 - Toxicological Information

RTECS:
CAS# 12125-02-9: BP4550000; BP4570000

LD50/LC50:
CAS# 12125-02-9: Draize test, rabbit, eye: 500 mg/24H Mild;
    Draize test, rabbit, eye: 100 mg Severe;
    Oral, mouse: LD50 = 1300 mg/Kg;
    Oral, rat: LD50 = 1650 mg/Kg.

Carcinogenicity:
CAS# 12125-02-9: Not listed by ACGIH, IARC, NTP, or CA Proposition 65.

Epidemiology:
No information available.

Teratogenicity:
No information available.

Reproductive:
No information available.

Mutagenicity:
Cytogenetic analysis: hamster fibroblast, 400 mg/L.

Neurotoxicity:
No information available.
Section 12 - Ecological Information

No information found.

Section 13 - Disposal Considerations

Dispose of in accordance with Federal, State, and local regulations.

Section 14 - Transport Information

US DOT
Shipping Name: Not regulated.
Hazard Class:
UN Number:
Packing Group:

Section 15 - Regulatory Information

US Federal

TSCA:
CAS# 12125-02-9 is listed on the TSCA inventory. Does not have a Significant New Use Rule.

SARA Reportable Quantities (RQ):
CAS# 12125-02-9: 5000 lb. final RQ; 2270 Kg final RQ.

CERCLA/SARA Section 313:
Not reportable under Section 313.

OSHA - Highly Hazardous:
Not considered highly hazardous by OSHA.

US State

State Right to Know:
CAS# 12125-02-9 is listed on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Regulations:
Not listed.

European/International Regulations

Canadian DSL/NDSL:
CAS# 12125-02-9 is listed on Canada’s DSL List.

Canada Ingredient Disclosure List:
CAS# 12125-02-9 is listed on the Ingredient Disclosure List at 1%.
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Section 16 - Other Information

MSDS Creation Date: July 24, 2006
Revision Date: None

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