

MATERIAL SAFETY DATA SHEET

AmchlorBasic

Ammonium Chloride Solution

1. Product and Company Identification

Supplier

Evans Enterprises, LLC
21884 South Lackman Road
Spring Hill, KS 66083

Company Contact: Bryan Evans
Telephone Number: (913) 533-2214

Manufacturer

Evans Enterprises, LLC
21884 South Lackman Road
Spring Hill, KS

Company Contact: Bryan Evans
Telephone Number: (913) 533-2214

Supplier Emergency Contacts & Phone Number

INFOTRAC: (800) 535-5053
Evans Enterprises, LLC: (913) 533-2214

Manufacturer Emergency Contacts & Phone Number

INFOTRAC: (800) 535-5053
Evans Enterprises, LLC: (913) 533-2214

Issue Date: 2/21/2005
MSDS Number: 104

Product Name: AmChlor Basic (Ammonium Chloride Solution)
Chemical Family: Inorganic Salts
Chemical Formula: NH₄Cl + H₂O

2. Composition/ Information on Ingredients

Component Name	Percent by Weight of Total Volume	CAS Number
Ammonium Chloride	25 — 35	12125-02-9
Water	65 — 75	7732-18-5

3. Hazards Identification

Eye Hazards

Acute exposure may cause severe redness and irritation. Chronic exposure may cause conjunctivitis.

Skin Hazards

Acute exposure may cause redness and irritation. Chronic exposure may cause irritation.

Ingestion Hazards

Acute exposure may produce nausea, vomiting, and gastric irritation. Large doses (more than six grams) may also cause systemic ammonia toxicity. Symptoms may include heavy breathing, blue skin, dullness, restlessness, convulsions and coma.

Inhalation Hazards

Inhalation of some ammonium salts may cause irritation of the mouth, nose, and throat. Severe exposure may cause wheezing, chest pain, and delayed pulmonary edema. Chronic, repeated exposure may cause irritation.

Product Overview

Colorless liquid with a slight ammonia odor. Ammonium Chloride by itself and in combination with Urea is non-flammable. Use water to control fires.

MATERIAL SAFETY DATA SHEET

Ammonium Chloride Solution

4. First Aid Measures

Eye

Wash eyes immediately with large amounts of water occasionally lifting upper and lower eyelids until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.

Skin

Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water (approximately 15-20 minutes) until no evidence of chemical remains. Get medical attention.

Ingestion

If victim is conscious, immediately give 2-4 glasses of water and induce vomiting by touching finger to back of throat. Contact local Poison Control Center or seek medical attention immediately.

Inhalation

Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep affected person warm and at rest. Get medical attention immediately.

5. Fire Fighting Measures

Flash Point: none °F

Fire and Explosion Hazards

Negligible fire or explosion hazard

Extinguishing Media

Dry chemical, carbon dioxide, water spray, or foam. For large fires, use water spray or fog, or alcohol foam.

Fire Fighting Instructions

Move containers from fire area if possible. Do not scatter spilled material with more water than needed for fire control. Dike fire control water for later disposal.

Positive pressure self-contained breathing apparatus (SCBA) should be used when there is a potential for inhalation of vapors and /or fumes.

Extinguish with agents indicated. Avoid breathing hazardous vapors. Keep upwind.

If solids are overheated, (above 500-500 deg F) HCl and NH₃ may be evolved.

6. Accidental Release Measures

For soil spills: Dig a pit, pond, lagoon, or holding area to contain liquid. Wash contaminated area with water, if approved by local, state, and federal environmental agencies.

For water spills: Add suitable agent to neutralize spilled material to pH 7.

Use activated carbon to absorb spilled substance that is dissolved. Use mechanical dredges or lifts to extract immobilized masses of pollution and precipitates.

Stop leak if possible without a risk. For small spills, take up with sand, sawdust, or other absorbent material and place into containers for later disposal.

MATERIAL SAFETY DATA SHEET

Ammonium Chloride Solution

7. Handling and Storage

Handling and Storage Precautions

Solution should be stored and handled in a closed system of lined or corrosion-resistant tanks and piping. Do not use aluminum, zinc or copper (brass, bronze, etc.) alloys in contact with solution due to corrosion. Be especially wary of plugs, fittings and the air/liquid surface layer for additional corrosion. A light oil film applied to the material will greatly reduce the oxidation that normally occurs at the surface/air level, and will also coat the tank wall as the material flows up and down within the storage vessel.

8 Exposure Controls/Personal Protection

Engineering Controls

Provide local exhaust ventilation system to meet exposure limits.

Eye/Face Protection

Employee must wear splash-proof or dust resistant safety goggles and a face shield to prevent contact with this substance.

Where there is any possibility that an employee's eye may be exposed to this substance, the employer shall provide an eye-wash fountain within the immediate work area for emergency use.

Skin Protection

Employee must wear appropriate protective (impervious) clothing, gloves, and equipment to prevent repeated or prolonged skin contact with this substance.

Respiratory Protection

10,000 mg/m³ fumes: Supplied-air respirator to meet published exposure limits.

Dust or Mist: Dust/mist respirator

Firefighting: Self-contained breathing apparatus with a full face piece. Operated in positive pressure mode.

Ingredient(s) - Exposure Limits

Ammonium Chloride

ACGIH: 10mg/m³ (8-hr TWA)
20 mg/m³ (15-min STEL)
OSHA 10 mg/m³ (8-hr PEL)
20mg/m³ (15-min STEL)

9. Physical and Chemical Properties

Appearance

Clear to reddish brown color.

Odor

Very slight ammonia odor.

Chemical Type

Mixture

MATERIAL SAFETY DATA SHEET

Ammonium Chloride Solution

9. Physical and Chemical Properties (continued from page 3)

Boiling Point: 644 °F, 340 °C
Melting Point: 644 °F, 340 °C
Specific Gravity: ... 1.10-1.11
Molecular Wt: 53.50
Vapor Pressure: 1 mm Hg @ 321 °F
Vapor Density:.....1.9
pH:6.0-7.4
Solubility:.....26% @ 15 °C

10. Stability and Reactivity

Stability: Stable
Hazardous Polymerization: Should not occur

Conditions to Avoid (Stability)

Ammonium Perchlorate in combination with Potassium Chlorate.
Avoid heating above the melting point where sublimation occurs.

Incompatible Materials

Acids (ammonia is released), alkalis (hydrogen chloride is released), and their associated carbonates. Ammonium Chloride reacts with lead and silver salts to form a fulminating compound. Ammonium Chloride reacts with ammonium compounds, bromine pentafluoride, bromine trifluoride, hydrogen cyanide, iodine heptafluoride, nitrates (potentially explosive combinations may be formed), and potassium chlorate.

Hazardous Decomposition Products

Ammonia and hydrogen chloride gases. Violent decomposition of ammonium nitrate in presence of Ammonium Chloride.

11. Toxicological Information

Miscellaneous Toxicological Information

500 mg/24 hours eye rabbit-severe irritation; 1650 mg/kg oral rat LD50; 100 mg/kg oral rabbit LD50; 30 mg/kg intramuscular rat LD50; 485 mg/kg intraperitoneal mouse LD50; 500 mg/kg subcutaneous mouse LDlo; 78 mg/kg intravenous rabbit LDlo.

Carcinogen status: none

Conditions Aggravated by Exposure

Workers with pre-existing kidney or liver functions should be considered particularly susceptible for ingestion poisoning.

12. Ecological Information

Acute Toxicity-Fish and Invertebrates

Notify local health and wildlife officials and operators of any nearby water intakes of contamination or discharge into leading waterways.
556 ppm Ammonium Chloride/96 hours/Fathead Minnows TLm/fresh water.

13. Disposal Considerations

Wherever possible recycle or reclaim as much as possible. Final disposal must be in accordance with local, state, and federal environmental regulations.

MATERIAL SAFETY DATA SHEET

Ammonium Chloride Solution

14. Transportation Information

Proper Shipping Name

RQ, Environmentally hazardous substances, liquid, n.o.s.
(contains ammonium chloride)

Hazard Class

9

Packing Group

III

DOT Identification Number

UN3082

DOT Shipping Label

None

Packaging Exceptions

173.155

Packaging Requirements

173.204, 173.241

15. Regulatory Information

U.S. Regulatory Information

TSCA: CAS# 12125-02-9 is listed on the TSCA inventory.

CAA: This material does not contain any hazardous air pollutants nor does it contain any Class 1 or Class 2 Ozone depleters.

CWA: This substance is listed as a Hazardous Substance under the Clean Water Act but is not considered a priority pollutant nor a toxic pollutant.

OSHA: This material is not considered highly hazardous by OSHA.

SARA Hazard Classes

Acute Health Hazard
Chronic Health Hazard

State Regulations

Ammonium Chloride can also be found on the state right-to-know lists of Florida and Minnesota.

Ingredient(s)- State Regulations

AMMONIUM CHLORIDE
New Jersey-Workplace Hazard
Pennsylvania- Workplace Hazard
California- Proposition 65
Massachusetts- Hazardous Substance

Canadian Regulatory Information

Ammonium Chloride is listed on Canada's DSL/NDSL list and has a WHMIS classification of D2B.

Ingredient(s)-Canadian Regulatory Information

AMMONIUM CHLORIDE
WHMIS- Ingredient disclosure list.

MATERIAL SAFETY DATA SHEET

Ammonium Chloride Solution

15. Regulatory Information (continued from page 5)

European Union (EU) Regulatory Information

Hazard Symptoms: XN

Risk Phrases: R 22 Harmful if swallowed

R 36 Irritating to eyes

Safety Phrases: S 22 Do not inhale dust.

NFPA, NPCA-HMIS

NPCA-HMIS Rating

Health : 2

Flammability : 0

Reactivity : 0

Personal Protection : J

16. Other Information

Reference Documentation

Information based on "Hazardous Chemicals Desk Reference" by Sax and Lewis, RTECS of NIOSH, Fisher Scientific, and Heritage Research Group.

Disclaimer

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Evans Enterprises, LLC