

1 Identification of Substance:

Product Details:

Trade Name: Ammonium Chloride
Manufacturer / Supplier:
 The Dallas Group of America, Inc.
 374 Route 22
 Whitehouse, NJ 08888 Tel: 908-534-7800
Information Department: Product Safety Department

2 Composition / Data on components:

Chemical characterization:

Description:

Mixture of substances listed below.

Components:

CAS NO.	Description:	%Min	%Max
12125-02-9	Untreated Ammonium Chloride	99.50	100.00
12125-02-9	Treated Ammonium Chloride (With anti-caking agent a or b)	99.00	99.90
61790-29-8	a-Organic Surfactants	0.02	0.03
7758-87-4	b-Tricalcium Phosphate	0.50	1.00

3 Hazards identification:

Hazard Description:

Information pertaining to particular dangers for man and environment:

Harmful by inhalation, taken internally, and in contact with skin.
 Irritating to eyes and skin.

Classification System:

NFPA ratings (scale 0-4)



Health = 1
 Fire = 0
 Reactivity = 0

HMIS Ratings (scale 0-4)

1	Health
0	Fire
0	Reactivity
E	Protection

4 First Aid Measures:

General Information:

Ammonium Chloride can cause discomfort on contact with any part of the body or if taken internally. Vaporized gases from Ammonium Chloride are considered toxic, as well as penetrating and pungent. When high concentrations do occur, those exposed should immediately leave the contaminated area.

Inhalation:

Inhalation of excessive concentrations of vapor, fumes, and/or dust produces irritation of the upper respiratory tract, resulting in coughing, excessive spitting and choking sensation. Reactions in humans have usually been limited to mild irritation or inflammation of the nose and throat.

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. After skin contact :

Immediately remove contaminated clothing. Flush all affected areas with large amounts of water for at least 15 minutes. Obtain medical advice immediately.

. After eye contact:

Immediately flush eyes with large quantities of running water for at least (15) fifteen minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface area of the eyes and lids with water. Obtain medical attention as soon as possible. Oils or ointments should not be used. Continue the flushing for an additional (15) fifteen minutes if a physician is not immediately available.

. After swallowing:

DO NOT INDUCE VOMITING. Administer large volumes of warm water and call physician. If patient is unconscious, DO NOT give any medication or fluid orally.

. After inhalation:

Remove from contaminated atmosphere. If breathing has ceased, clear the victims airway and start mouth-to-mouth artificial respiration, which may be supplemented by the use of a bag-mask respirator, or a manually-triggered oxygen supply capable of delivering 1 liter/second or more. If the victim is breathing, oxygen may be administered from a demand-type or continuous-flow inhalator, preferably with a physician's advice. Contact a physician immediately.

5 Fire Fighting Measures:

. Suitable extinguishing agents:

Water, water fog, carbon dioxide (CO₂), dry chemical.

. For safety reasons unsuitable extinguishing agents:

NONE

. Protective equipment:

Scott Air-Pak or equivalent respiratory device.

. Special Fire fighting procedures, unusual fire or explosion hazards:

Ammonium Chloride is not, in itself, flammable or explosive, however, it vaporizes at a relatively low temperature of 339°C or 642°F. This temperature is easily achieved in a fire and as a result evolves fumes of nitrogen oxides, hydrogen chloride ions and ammonia gas; all of which are considered toxic. Firefighters exposed to these fumes should wear Scott Air-Pak or equivalent

6 Accidental Release Measures:

. Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away. All personnel involved in a spill clean-up should follow the recommendations and practices set forth below (refer to Industrial Hygiene).

. Measures for environmental protection:

Spill or discharges into the environment involving large quantities of Ammonium Chloride should be controlled and cleaned-up according to a pre-determined affirmative, written Spill Prevention and Control Program.

. Measures for cleaning/collecting:

Sweep up and recycle into process if contamination does not present a problem. Use appropriate protective equipment if dust is generated or contact with eyes or skin is expected. Flush residues and liquid to holding area for neutralization before discharge.

. Measures for disposal:

Under Federal RCRA, it is the responsibility of the user of Product to determine, at the time of disposal, whether the Product falls under the RCRA as a hazardous waste. This is because Product uses, transformations, synthesis, mixtures, etc. may render the resulting end-product hazardous.

7 Handling and storage:

. Handling:

Information for safe handling:

Ensure good ventilation/exhaustion at the workplace.

. Requirements to be met by storerooms and receptacles:

Store in a cool, dry conditions in well sealed receptacles.

. Information about storage in one common storage facility:

Not required.

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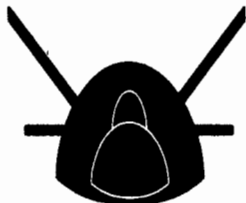
8 Exposure Controls and Personal Protection:

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages, and feed. Immediately remove all soiled clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin. Clothing, gloves, footwear and safety glasses must be worn at all times by Personnel exposed to or handling Ammonium Chloride.

Respiratory Equipment:



NIOSH approved dust-mask.

Protection of hands:



Protective Gloves.

Eye Protection:



Chemical safety goggles or equivalent should be worn at all times by persons handling or exposed to Ammonium Chloride.

9 Physical and Chemical Properties:

- Formula: NH_4Cl
- Form: Crystalline Solid
- Color: White
- Odor: Odorless

	<u>Value/Range</u>	<u>Unit</u>	<u>Method</u>
Change in condition			
Melting point/Sublimation:	339°C or 642°F		
Decomposition:	520°C or 968°F		
Flash Point:	None		
Ignition Temperature:	Will not ignite.		
Auto Igniting:	Will not ignite.		
Danger of explosion:	Not explosive.		
Explosion limits:			
Lower:	N/A		
Upper:	N/A		
Vapor pressure:	N/A		
Density:	900 g/L		
Solubility in/Miscibility with water:	20°C (37g/100g H ₂ O)		
Solvent Content: Organic Solvents:	N/A		
Specific gravity:	1.567 @ 20°C		
pH of 5% solution @ 20°C	4.3 - 5.5		

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10 Stability and Reactivity:

- . **Stable**
- . **Thermal decomposition / conditions to be avoided:**
Heated to decomposition it will emit fumes of HCl and ammonia gas.
- . **Dangerous reactions:**
Explosive reaction with potassium chlorate or bromine trifluoride.
Violent reaction with bromine pentafluoride. Reaction with hydrogen cyanide may create explosive nitrogen trichloride.
- . **Dangerous products of decomposition:**
HCl and Ammonia

11 Toxicological Information:

- . **Mutagenic effects:** N/A
- . **Cytogenic analysis:** hamster: fibroblast; 400mg/L ; FCT0D7 22,623,84 (Food Chemical Toxical)
- . **OSHA Standard Air:** None
- . **ACGIH Limit Values:** TWA 10 mg/m³ , STEL 20mg/m(Fume Only)
- . **TOSCA:** Reported in TOSCA Inventory 1986.
- . **Primary irritant effect:**
 - Skin contact:** Irritant to the skin.
 - Eye contact:** Severe eye irritant. (500mg/24 hrs. rabbit)
 - Skin absorption:** No data available
 - Inhalation:** Irritant to mucous membranes.
 - Ingestion:** Moderate toxicity: (LD 50:1650 mg/kg rat)
(LD 50:1000 mg/kg rabbit)
- . **Overexposure acute effects:** May cause severe eye irritation. Dusts and mists can irritate skin mucous membranes and upper respiratory tract.
- . **Overexposure chronic effects:** May cause inflammation of mucous membranes in respiratory tract and on skin.
- . **Sensitization:** Moderate to skin.
- . **Toxicology data carcinogenic statement:**

National Toxicology Register	<input checked="" type="checkbox"/> No	OSHA Register	<input checked="" type="checkbox"/> No
IARC Monograph	<input checked="" type="checkbox"/> No	ACGIH 1995-96	<input checked="" type="checkbox"/> No

12 Ecological Information:

- . **Environmental fate:**
Biodegradability does not apply to inorganic compounds. No other data available.
- . **Environmental effects:**
 - 24 Hour LC 50 (Daphnia) 5.1 mg/L NH₃
 - 24 Hour LC 50 (Trout) 0.70 mg/L NH₃
 - 24 Hour LC 50 (Goldfish) 7.2 mg/L NH₃
 - 24 Hour LC 50 (Bluegill) 1.4 mg/L NH₃

13 Disposal considerations:

- . **Product Recommendation:**
Under Federal RCRA, it is the responsibility of the user of Product to determine, at the time of disposal, whether the product falls under the RCRA as a hazardous waste. This is because Product uses, transformations, synthesis, mixtures, etc. may render the resulting end-product hazardous.

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14 Transport Information:

. DOT regulations:	
. CAS Number:	12125-02-9
. DOT shipping name:	Ammonium Chloride
. IATA	N/A - (no restrictions)
. IMO	N/A - (no restrictions)
. DOT Class:	Non hazardous (in packages less than 5000 lbs.)
. DOT Labels:	None required.
. DOT Markings:	None required.
. DOT Placard:	None required.
. UN Number:	None

15 State / Federal Regulations:

. EPA Requirements:	
CERCLA (40CFR32)	
Reportable quantity:	5000 lbs.
RCRA Waste Number:	None
SARA Title III (313):	Not listed
SARA Title III (311-312 CFR 370):	Acute
Clean Air Act:	Not listed
U.S. TOSCA status:	Listed 1986
Canada Domestic Substance List:	Ammonium Chloride #00040006
New Jersey Right to know:	#0093

Bibliography Source Reference

1. NIOSH - RTECS Registry of Toxic Effect of Chemical Substances.
2. American Conference of Governmental Industrial Hygienist.
3. Dangerous Properties of Industrial Materials, SAX
4. Handbook of Toxic and Hazardous Chemicals and Carcinogens, Marshall Sittig.
5. Industrial Hygiene and Toxicology, Patty
6. Hazardous Materials 181, JJ Keller
7. Ambient Water Quality Criteria for Ammonia, USEPA.

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