

DATE: 09/08/06
INDEX: D62501386

ACCT: 006449001
CAT NO: AC423280010

PAGE: 1
PO NBR: 22644523

Material Safety Data Sheet

Ammonium Chloride
MSDS# 01170

Section 1 - Chemical Product and Company Identification

MSDS Name:
Ammonium chloride

Catalog Numbers:
AC123340000, AC123340010, AC123340250, AC199970000, AC199970010, AC199975000, AC199975000, AC423280000, AC423280010, AC9470862, S70609, S706091, S706092, S706093, S93118, A649 3, A649-500, A64910KG, A661-10, A661-3, A661-500, A687-10, A687-100, A687-212, A687-500, NC9483471, NC9483488, NC9528216, NC9570959, XXA649EP10KG

Synonyms:
Ammonium Chloratum; Ammonium Chloridum; Ammonium Muriate; Sal Ammonia; Salmiac.

Company Identification:
Fisher Scientific

One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call:
201-796-7100

Emergency Number US: 201-796-7100
CHEMTREC Phone Number, US:
800-424-9300

Section 2 Composition, Information on Ingredients

CAS#: 12125-02-9
Chemical Name: Ammonium chloride
%: >99
EINECS#: 235 186 4

Hazard Symbols:

XN
Risk Phrases:
22 36

Section 3 - Hazards Identification
EMERGENCY OVERVIEW

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

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.

Inhalation: If heated, dust or fume may cause respiratory tract irritation. May be harmful if inhaled.

Chronic: Prolonged or repeated skin contact may cause dermatitis.

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

Ingestion: Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Section 4 - First Aid Measures
Section 5 - Fire Fighting Measures

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Substance is noncombustible. Containers may explode in the heat of a fire. May polymerize explosively when involved in a fire.

Extinguishing Media:
Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Autoignition Temperature: Not available.
Flash Point: Not available
Explosion Limits: Lower: Not available
Explosion Limits: Upper: Not available

173

DATE: 09/08/06
INDEX: D62501386

ACCT: 006449001
CAT NO: AC423280010

PAGE: 2
PO NBR: 22644523

NFPA Rating:
Health: 2; flammability: 0; instability: 0;
Section 6 - Accidental Release Measures

General Information:
Use proper personal protective equipment as indicated in Section 8.
Spills/Leak:

Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling:
Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Avoid ingestion and inhalation.

Storage:
Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture. Store below 40°C.

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

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ammonium chloride	10 mg/m ³ (fume); 20 mg/m ³ STEL (fume)	10 mg/m ³ TWA (fume)	none listed

OSHA Vacated PELs:

Ammonium chloride:
10 mg/m³ TWA
Personal Protective Equipment

Eyes:
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:
Wear impervious gloves.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.

Respirators:
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Crystalline powder
Color: colorless or white
Odor: odorless
pH: 5.0 (10% sol at 25C)
Vapor Pressure: 1 mm Hg @ 160.4C
Vapor Density: Not available
Evaporation Rate: Negligible
Viscosity: Not available
Boiling Point: 520 deg C (968.00°F)
Freezing/Melting Point: 328 deg C (622.40°F)
Decomposition Temperature: Not available
Solubility in water: 39.6% at 176F
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 or water from the air. Hygroscopic; absorbs moisture or water 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:
RTECS: CAS# 12125-02-9: Draize test, rabbit, eye: 500 mg/24H Mild; Draize test, rabbit, eye: 100 mg Severe; Oral,

174

DATE: 09/08/06 ACCT: 006449001 PAGE: 3
INDEX: D62501386 CAT NO: AC423280010 PO NBR: 22644523

mouse: LD50 = 1300 mg/kg; Oral, rat: LD50 = 1650 mg/kg;

Carcinogenicity:

Ammonium chloride -
Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology:

Not available

Teratogenicity:

Not available

Reproductive:

Not available

Neurotoxicity:

Not available

Mutagenicity:

Not available

Other:

See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.

US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

US DOT

Shipping Name: Not regulated as a hazardous material

Hazard Class:

UN Number:

Packing Group:

Canada TDG

Shipping Name: Not available

Hazard Class:

UN Number:

Packing Group:

USA RQ: CAS# 12125-02-9: 5000 lb final RQ; 2270 kg final RQ

Section 15 - Regulatory Information

US Federal

TSCA

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

Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.

Section 12b
None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQ
CAS# 12125-02-9: 5000 lb final RQ; 2270 kg final RQ

SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.

SARA Codes
CAS # 12125-02-9: acute, chronic.

Section 313
No chemicals are reportable under Section 313.

Clean Air Act:
This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:
CAS# 12125-02-9 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority

Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants

under the CWA.

OSHA:

STATE
Ammonium chloride can be found on the following state right to know

lists: California, New Jersey, Pennsylvania, Minnesota,

Massachusetts.

California Prop 65
California No Significant Risk Level:

None of the chemicals in this product are listed.

European/International Regulations:
European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:
R 22 Harmful if swallowed.

R 36 Irritating to eyes.

Safety Phrases:
S 22 Do not breathe dust.

WGK (Water Danger/Protection)

CAS# 12125-02-9: 1

Canada
CAS# 12125-02-9 is listed on Canada's DSL List

DATE: 09/08/06 ACCT: 006449001 PAGE: 4
INDEX: D62501386 CAT NO: AC423280010 PO NBR: 22644523

Canadian WHMIS Classifications: D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations. CAS# 12125-02-9 is listed on Canada's Ingredient Disclosure List

Section 16 - Other Information

MSDS Creation Date:

6/15/1999

Revision #6 Date

6/19/2006

Revisions were made in Sections:

9

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.