

**** MATERIAL SAFETY DATA SHEET ****

Ammonium Chloride
 01170

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Ammonium Chloride
 Catalog Numbers: 509, A649-3, A649-500, A6493, A649500, A661 10, A661 3,
 A661 300, A661 10, A661 3, A661-500, A66110, A6613, A661500, 5706091,
 5706092, 5706093

Synonyms: Ammonium chloratum, ammonium chloridum, ammonium muriate, sal
 ammoniac, salmiac.

Company Identification: Fisher Scientific
 1 Reagent Lane
 Fairlawn, NJ 07410

For information, call: 201-796-7100
 Emergency Number: 201-796-7100
 For CHEMTREC assistance, call: 800-424-9300
 For international CHEMTREC assistance, call: 703-527-3887

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

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

Hazard Symbols: XN Xi

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: Colorless crystals or white granular powder.
 Caution: May cause eye and skin irritation. May cause respiratory
 and digestive tract irritation.
 Target Organs: None.

Potential Health Effects

- Eyes: May cause eye irritation.
- Skin: May cause skin irritation.
- 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.
- Chronic: Prolonged or repeated skin contact may cause dermatitis.

**** SECTION 4 - FIRST AID MEASURES ****

- Eyes: Flush eyes with plenty of water for at least 15 minutes. Occasionally lifting the upper and lower lids. Get medical aid immediately.
- Skin: Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Remove contaminated clothing and shoes.
- Ingestion: Induce vomiting. If victim is conscious and alert, give 2-4 cupsful of milk or water. Get medical aid.
- Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
- Notes: Treat symptomatically and supportively.
- Antidote: No specific antidote exists.

**** 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. Substance is noncombustible.
- Extinguishing Media: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.
- Autoignition: Not applicable.
- Flammability: Not applicable.
- NFPA Rating: Not published.
- Explosion Limits, Lower: Not available.

Upper: Not available.

**** 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. Avoid generating dusty conditions.

**** SECTION 7 - HANDLING and STORAGE ****

Handling: Wash thoroughly after handling. Keep container tightly closed. Do not get on skin or in eyes. Avoid ingestion and inhalation.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

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

OSHA Vacated PELs:
 Ammonium chloride:
 10 mg/m³ TWA; 20 mg/m³ STEL

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.
- Skin: Wear impervious gloves.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134. Always use a NIOSH-approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

- Physical State: Solid
- Appearance: Colorless crystals or white granular powder.
- Odor: None
- pH: 5.0 (10% sol at 77F)
- Vapor Pressure: Not available.
- Vapor Density: Not available.
- Evaporation Rate: Negligible.
- Viscosity: Not available.
- Boiling Point: 968 F
- Freezing/Melting Point: 662 F
- Decomposition Temperature: Not available.
- Solubility: 59.9 g/100 ml water
- 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.

Conditions to Avoid: Excess heat.

Incompatibilities with Other Materials: Acids, alkalis, and their associated carbonates. Substance reacts with lead and silver salts to form a fulminating compound. Substance reacts with ammonium compounds, bromine pentachloride, bromine pentachloride, chlorine cyanide, iodine heptafluoride, nitrates, and potassium chlorate.
 Hazardous Decomposition Products: Ammonia and hydrochloric acid fumes.
 Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTCS#:
CAS# 12125-02-9: BP4550000
LD50/LC50:
CAS# 12125-02-9: Oral, mouse: LD50 = 1300 mg/kg; Oral, rat: LD50 = 1650 mg/kg
Carcinogenicity:
Ammonium chloride -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
No information available.
Teratogenicity:
No information available.
Reproductive Effects:
No information available.
Neurotoxicity:
No information available.
Mutagenicity:
No information available.
Cytogenetic analysis: hamster fibroblast, 400 mg/L
Other Studies:
None.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
Sunfish (fresh water) TLm=6 ppm/96H
Environmental Fate:
No information reported.
Physical/Chemical:
No information available.
Other:
None.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.
RCRA D-Series Maximum Concentration of Contaminants: Not listed.
RCRA D-Series Chronic Toxicity Reference Levels: Not listed.
RCRA F-Series: Not listed.
RCRA P-Series: Not listed.
RCRA U-Series: Not listed.
Not listed as a material banned from land disposal according to RCRA.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT
IMO No information available
IATA No information available.
RID/ADR No information available.
Canadian TDG No information available.
Shipping Name: AMMONIUM CHLORIDE
Hazard Class: 9.2
UN Number: UN9085
Other Information: REGULATED LIMIT 230KG

**** SECTION 15 - REGULATORY INFORMATION ****

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.
SARA
Section 302 (PO)
Final PG = 3000 pounds (2270 kg)
Section 304 (TPC)
None of the chemicals in this product have a TPC.
SARA 309
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:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
Ammonium chlorida can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts,
California No Significant Risk Level:
None of the chemicals in this product are listed.
INTERNATIONAL
European Labeling in Accordance with EC Directives
Risk Phrases: XN XI
Safety Phrases:
S 22 Do not inhale dust.

Canada
CAS# 12125-02-9 is listed on Canada's DSL/MSL List.
CAS# 12125-02-9 is listed on Canada's Ingredient Disclosure List.
Exposure Limits:
CAS# 12125-02-9: OEL-ARAB Republic of Egypt:TWA 10 mg/m3 (fume), OEL lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts, OEL-BELGIUM:TWA 10 mg/m3 (fume), OEL-FRANCE:TWA 10 mg/m3 (fume), OEL-DENMARK:TWA 10 mg/m3 (fume), OEL-GERMANY:TWA 10 mg/m3 (fume), OEL-IRELAND:TWA 10 mg/m3 (fume), OEL-ITALY:TWA 10 mg/m3 (fume), OEL-JAPAN:TWA 10 mg/m3 (fume), OEL-KOREA check ACGIH TLV, OEL-NEW ZEALAND, SINGAPORE, VIETNAM check ACGIH TLV

**** SECTION 16 - ADDITIONAL INFORMATION ****

Additional Information:
No additional information available.
MSDS Creation Date: 12/13/1994 Revision #2 Date: 3/04/1996
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 way shall Fisher be liable for any claims, losses, or damages of any kind, party or parties, arising out of the use of this information, even if Fisher has been advised of the possibility of such damages.