

Ammonium Chloride  
01170

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

MSDS Name: Ammonium Chloride

Catalog Numbers:

AC9470862, S70609, S70609-1, S70609-2, S70609-3, A649 3, A649 500, A649-3,  
A649-500, A64910KG, A6493, A649500, A661 10, A661 3, A661 500, A661-10,  
A661-3, A661-500, A66110, A6613, A661500, NC9483471, NC9483488, NC9528216,  
NC9570959, S706091, S706092, S706093, XXA649EP10KG

Synonyms:

Ammonium Chloratum, Ammonium Chloridum, Ammonium Muriate, Sal  
Ammonia, 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	>99.0	235-186-4

Hazard Symbols: XN

Risk Phrases: 22 36

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

EMERGENCY OVERVIEW

Appearance: colorless or white.

Caution! May cause skin irritation. May be harmful if swallowed. May  
cause respiratory and digestive tract irritation. Causes eye  
irritation.

Target Organs: None.

Potential Health Effects

Eye:

Causes eye irritation.

Skin:

May cause skin irritation.

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.

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 eyelids. 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. Wash clothing before reuse.

Ingestion:

Induce vomiting. If victim is conscious and alert, give 2-4 cupfuls  
of milk or water. Never give anything by mouth to an unconscious  
person. 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 to Physician:

Treat symptomatically and

\*\*\*\* 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:

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. For large fires, use water spray, fog or alcohol-resistant foam. Cool containers with flooding quantities of water until well after fire is out.

\*\*\*\* 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, 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 below 40C.

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

Engineering Controls:

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 <sup>3</sup> ; 20 mg/m <sup>3</sup> STEL	10 mg/m <sup>3</sup> TWA	none listed

OSHA Vacated PELs:

Ammonium chloride:  
10 mg/m<sup>3</sup> 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 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

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

Physical State: Solid  
Appearance: 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(sublimes)  
Freezing/Melting Point: 328 deg C  
Autoignition Temperature: Not available.  
Flash Point: Not available.  
NFPA Rating: (est.) Health: 1; Flammability: 0; Reactivity: 0  
Explosion Limits, Lower: Not available.  
Upper: Not available.  
Decomposition Temperature: Not available.  
Solubility: 39.6% at 176F.  
Specific Gravity/Density: 1.53 (Water=1)  
Molecular Formula: NH<sub>4</sub>Cl  
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:

Incompatible materials, 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 pentafluoride, bromine trifluoride, hydrogen cyanide, iodine heptafluoride, nitrates, and potassium chlorate.

Hazardous Decomposition Products:

Irritating and toxic fumes and gases, ammonia and hydrochloric acid fumes.

Hazardous Polymerization: May occur.

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

RTECS#:

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:

Cytogenetic analysis: hamster fibroblast, 400 mg/L.

Other Studies:

None.

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

Ecotoxicity:

Fish: LC50 = 109.0 mg/L; 48 Hr.; Static conditions Sunfish (fresh water) TLm=6 ppm/96H

\*\*\*\* 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 Part 261. 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

No information available

Canadian TDG

Shipping Name: AMMONIUM CHLORIDE

Hazard Class: 9.2

UN Number: UN9085

Other Information: REGULATED LIMIT 230KG

\*\*\*\* 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.

SARA

Section 302 (RQ)

CAS# 12125-02-9: final RQ = 5000 pounds (2270 kg)

Section 302 (TPQ)

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 depletors.

This material does not contain any Class 2 Ozone depletors.

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 chloride 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.

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

United Kingdom Occupational Exposure Limits

CAS# 12125-02-9: OES-United Kingdom, TWA fume: 10 mg/m3 TWA

CAS# 12125-02-9: OES-United Kingdom, STEL fume: 20 mg/m3 STEL

Canada

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

This product has a WHMIS classification of D2B.

CAS# 12125-02-9 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 12125-02-9: OEL-ARAB Republic of Egypt:TWA 10 mg/m3 (fume)

OEL-AUSTRALIA:TWA 10 mg/m3;STEL 20 mg/m3 (fume)

OEL-BELGIUM:TWA 10 mg/m3;STEL 20 mg/m3 (fume)

OEL-DENMARK:TWA 10 mg/m3 (fume)

OEL-FRANCE:TWA 10 mg/m3 (fume)

OEL-THE NETHERLANDS:TWA 10 mg/m3 (fume)

OEL-RUSSIA:STEL 10 mg/m3 (fume)

OEL-SWITZERLAND:TWA 6 mg/m3 (fume)

OEL-UNITED KINGDOM:TWA 10 mg/m3;STEL 20 mg/m3 (fume)

OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV

OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

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

MSDS Creation Date: 6/15/1999 Revision #1 Date: 8/02/2000

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 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.

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