SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name:	Ammonium Chloride
CAS number:	12125-02-9
Synonyms:	Salmiac, Amchloride, Ammonii Chloridum, Ammonium muriate, Muriate of ammonia, Sall ammoniac

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified Uses : Laboratory chemicals, Synthesis of substances.

1.3 Details of the supplier of the safety data sheet

Company : Lab Alley, LLC
22111 Highway 71 West, Suite 601
Spicewood, Texas 78669
U.S.A.

Telephone : 512-668-9918
Fax : 512-886-4008

1.4 Emergency telephone

Emergency Phone # : US & Canada: 1-800-535-5053 INFOTRAC
International 1-352-323-3500 INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity - oral (Category 4)
Eye irritation (Category 2A)

2.2 GHS Label elements, including precautionary statements

Pictogram:

Signal Word: **Warning**

Hazard statement(s): Harmful if swallowed.

Precautionary statement(s): **Prevention** - Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye protection/ face protection. **Response** - IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention. Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified

None.

SECTION 3: Composition/information on ingredients

3.1 Components

Ingredient	CAS Number	Percent
Ammonium chloride	12125-02-9	100

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with labored breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/ hospital. Show this material safety data sheet to the doctor in attendance.

In case of inhalation: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

In case of eye contact: Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply (chemical) neutralizing agents without medical advice. Take victim to an ophthalmologist if irritation persists.

In case of skin contact: Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents without medical advice. Take victim to a doctor if irritation persists.

In case of ingestion: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Do not apply (chemical) neutralizing agents without medical advice. Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

Harmful if swallowed. Not irritant to skin. Practically non-toxic in contact with skin (LD50 skin > 2000 mg/kg). Causes serious eye irritation. AFTER INHALATION OF DUST: Coughing. AFTER INHALATION OF FUME: Respiratory difficulties. Red skin. Redness of the eye tissue. Irritation of the eye tissue. AFTER ABSORPTION OF LARGE QUANTITIES: Change in the blood composition. Headache. Nausea. Vomiting. Mental confusion.

4.3 Indication of any immediate medical attention and special treatment needed

Obtain medical assistance. Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable (and unsuitable) extinguishing media — Adapt extinguishing media to the environment for surrounding fires.

5.2 Specific hazards arising from the substance or mixture

DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard". INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".

5.3 Special protective equipment and precautions for firefighters

Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighborhood close doors and windows. Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water. In the event of fire, wear self-contained breathing apparatus.

5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

No additional information available.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid raising dust. Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Keep container tightly closed.

Hygiene measures

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Dry.

SECTION 8. Exposure controls/personal protection

8.1 Occupational exposure limits

Component	CAS-No.	Value	Control parameters	Basis
Ammonium chloride	12125-02-9	TWA	10 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		STEL	20 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		TWA	10 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	20 mg/m3	USA. NIOSH Recommended Exposure Limits
		PEL	10 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		STEL	20 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

8.2 Exposure controls

Appropriate engineering controls

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses.

Skin and body protection

Protective clothing. Gloves.

Respiratory protection

Required when dusts are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Solid.
Appearance	Colorless to white.
Odor	Odorless.
Odor Thresh	No data available.
pH	5 (10%)
Melting Point/Range	338 °C (640 °F) - (sublimed)
Boiling Point/Range	520 °C 968 °F
Flash Point	Not applicable.
Evaporation Rate	No data available.
Flammability (solid, gas)	This product is not flammable.
Flammability or explosive limit	
Upper	: NA
Lower	: NA
Vapor Pressure	1.3 hPa at 160.4 °C (320.7 °F) - 1.3 hPa at 30 °C(86 °F)
Vapor Density	1.8
Density	1.53 (25 °C)
Solubility	372 g/l at 20 °C (68 °F) (water)
Partition coefficient; n-octanol/water	Not applicable for inorganic substances.
Autoignition Temp	> 400 °C (> 752 °F) - Relative self-ignition temperature for solids does not ignite.
Decomposition Temp	Not applicable.
Viscosity	No data available.
Molecular Formula	NH4Cl
Molecular Weight	53.49
VOC Content(%)	Not applicable.
Oxidizing properties	None.

9.2 Other safety information

Hygroscopic. May sublimate. Substance has acid reaction.

SECTION 10: Stability and reactivity

10.1 Reactivity

Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Reacts violently with (some) halogens compounds: (increased) risk of fire/explosion.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature). Hygroscopic.

10.3 Possibility of hazardous reactions

Violent reactions possible with: alkali hydroxides, acids. Risk of ignition or formation of inflammable gases or vapors with: halogen-halogen compounds, alkalines, alkaline substances. Risk of explosion with: nitrates, chlorates, Heavy metal salts, nitrites, Hydrogen cyanide (hydrocyanic acid), Chlorine, silver salt, Strong oxidizing agents.

10.4 Conditions to avoid

Air contact. Direct sunlight. High temperature. Incompatible materials.

10.5 Incompatible materials

Oxidizing agents, Strong acids, silver nitrate, Strong reducing agents, Aluminum, Lead, Iron, Copper, copper compounds.

10.6 Hazardous decomposition products

Gaseous ammonia. In the event of fire: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product Information
Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ammonium chloride (12125-02-9)	1410 mg/kg (Rat)	>2000 mg/kg (Rat)	>3.6 mg/l/4h (Rat)

Skin corrosion/irritation

Not classified.

Serious eye damage/eye irritation

Not classified.

Respiratory or skin sensitization

Not classified.

Germ cell mutagenicity

Not classified.

Carcinogenicity

Not classified.

Reproductive toxicity

Not classified.

Specific target organ toxicity - single exposure

Not classified.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard

Not classified.

Chronic effects

Skin rash/inflammation. Red skin. Dry skin. Itching. AFTER INHALATION OF FUME: Respiratory difficulties.

11.2 Additional information

None.

SECTION 12. Ecological information

12.1 Toxicity

Ecotoxicity:

Reacts with water so no ecotoxicity data for the substance is available. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Ammonium chloride	1,300 mg/l ErC50 - 5 d	209.00 mg/l LC50 - 96 h	1,310 mg/l EC50 - 0.5 h	101 mg/l EC50 - 48 h

12.2 Persistence and Degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative Potential

No data available.

12.4 Mobility in Soil

No data available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

No additional information available.

SECTION 13. Disposal considerations

13.1 Waste Disposal Methods

Do not discharge into drains or the environment. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals.

SECTION 14: Transport information

DOT

UN-No	UN3077
Proper Shipping Name	Environmentally hazardous substance, solid, n.o.s. (ammonium chloride)
Hazard Class	9
Subsidiary Hazard Class	
Packing Group	III (Reportable Quantity (RQ) - 5000lbs

IATA

UN-No	
Proper Shipping Name	
Hazard Class	Not regulated for transport
Subsidiary Hazard Class	
Packing Group	

IMDG/IMO

UN-No	
Proper Shipping Name	
Hazard Class	Not regulated for transport
Subsidiary Hazard Class	
Packing Group	

SECTION 15: Regulatory information

US Federal regulations

Ammonium Chloride (12125-02-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Not subject to reporting requirements of the United States SARA Section 313
RQ (Reportable quantity, section 304 of EPA's List of Lists)
SARA Section 311/312 Hazard Classes — Health hazard - Acute toxicity (any route of exposure)

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

International regulations

CANADA
No additional information available

EU-Regulations
No additional information available

National regulations
No additional information available

US State regulations

Massachusetts Right To Know Components	CAS-No.	Revision Date
ammonium chloride	12125-02-9	1994-04-01

Pennsylvania Right To Know Components	CAS-No.	Revision Date
ammonium chloride	12125-02-9	1994-04-01

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Issue Date	03/26/2012
Revision Date	10/06/2023

Disclaimer:
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.