

SECTION 1: Identification

1.1. Identification

Product form	: Substance
Substance name	: Ammonium Chloride
CAS No	: 12125-02-9
Product code	: LC10972
Formula	: NH ₄ Cl
Synonyms	: amchlor / amchloride / ammonii chloridum / ammonium muriate / muriate of ammonia / sal ammoniac / salmiac

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

Use of the substance/mixture	: Pharmaceutical product: component Electrolyte Fertilizer Laboratory chemical Chemical raw material Explosive: additive Food industry: additive Veterinary medicine
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1.3. Details of the supplier of the safety data sheet

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral) Category 4 H302
Full text of H statements : see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US)	: Warning
Hazard statements (GHS-US)	: H302 - Harmful if swallowed
Precautionary statements (GHS-US)	: P264 - Wash exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell P330 - If swallowed, rinse mouth P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS US)

Not applicable

Ammonium Chloride

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 3: Composition/Information on ingredients

3.1. Substance

Substance type : Mono-constituent

Name	Product identifier	%	GHS-US classification
Ammonium Chloride (Main constituent)	(CAS No) 12125-02-9	100	Acute Tox. 4 (Oral), H302

Full text of hazard classes and H-statements : see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : 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.
- First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
- First-aid measures after skin contact : Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.
- First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Doctor: gastric lavage.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : AFTER INHALATION OF DUST: Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. AFTER INHALATION OF FUME: Respiratory difficulties.
- Symptoms/injuries after skin contact : Red skin.
- Symptoms/injuries after eye contact : Redness of the eye tissue. Irritation of the eye tissue.
- Symptoms/injuries after ingestion : AFTER ABSORPTION OF LARGE QUANTITIES: Change in the blood composition. Headache. Nausea. Vomiting. Mental confusion.
- Symptoms/injuries upon intravenous administration : No effects known.
- Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. Red skin. Dry skin. Itching. AFTER INHALATION OF FUME: Respiratory difficulties.

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 extinguishing media : Adapt extinguishing media to the environment.
- Unsuitable extinguishing media : No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard".
- Explosion hazard : INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".
- Reactivity : On burning: release of toxic and corrosive gases/vapours (hydrogen chloride, ammonia, chlorine, nitrous vapours). Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Reacts violently with (some) halogens compounds: (increased) risk of fire/explosion. Reacts with (some) acids: release of toxic and corrosive gases/vapours (hydrogen chloride). Reacts with (some) bases: release of corrosive gases/vapours (ammonia).

5.3. Advice for firefighters

- Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
- Firefighting instructions : Dilute toxic gases with water spray.
- Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

Ammonium Chloride

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Gloves. Safety glasses. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Reactivity hazard: compressed air/oxygen apparatus. Reactivity hazard: gas-tight suit. See "Material-Handling" to select protective clothing.
- Emergency procedures : Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.
- Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

- For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray. If reacting: dilute toxic gas/vapour with water spray. Take account of toxic/corrosive precipitation water.
- Methods for cleaning up : Prevent dust cloud formation. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

- Technical measures : Comply with applicable regulations.
- Storage conditions : Keep container tightly closed.
- Incompatible products : silver nitrate. Strong oxidizers.
- Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources.
- Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. strong acids. (strong) bases. metals. halogens. water/moisture.
- Storage area : Store in a cool area. Store in a dry area. Keep container in a well-ventilated place. Keep out of direct sunlight. Meet the legal requirements.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. watertight. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: No data available. MATERIAL TO AVOID: carbon steel. copper. aluminium.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ammonium Chloride (12125-02-9)		
ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³ (Ammonium chloride fume; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	ACGIH STEL (mg/m ³)	20 mg/m ³ (Ammonium chloride fume; USA; Short time value; TLV - Adopted Value)
NIOSH	NIOSH REL (TWA) (mg/m ³)	10 mg/m ³

Ammonium Chloride

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Ammonium Chloride (12125-02-9)		
NIOSH	NIOSH REL (STEL) (mg/m ³)	20 mg/m ³

8.2. Exposure controls

- Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
- Personal protective equipment : Gloves. Safety glasses.



- Materials for protective clothing : GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: butyl rubber. neoprene. nitrile rubber. PVC. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: No data available.
- Hand protection : Gloves.
- Eye protection : Safety glasses. In case of dust production: protective goggles.
- Skin and body protection : Protective clothing.
- Respiratory protection : Dust production: dust mask with filter type P2.
- Thermal hazard protection : None necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Solid
- Appearance : Crystalline solid. Crystalline powder.
- Color : Colourless to white
- Odor : Odorless
- Odor threshold : No data available
- pH : 5.0 (10 %)
- pH solution : 10 %
- Melting point : Not applicable
- Freezing point : No data available
- Boiling point : Not applicable
- Flash point : Not applicable
- Relative evaporation rate (butyl acetate=1) : No data available
- Flammability (solid, gas) : No data available
- Vapor pressure : No data available
- Relative vapor density at 20 °C : 1.80
- Relative density : 1.5
- Specific gravity / density : 1530 kg/m³
- Molecular mass : 53.49 g/mol
- Solubility : Soluble in water. Soluble in methanol. Soluble in ammonia. Soluble in glycerol.
Water: 37 g/100ml
Ethanol: 2 g/100ml
- Log Pow : -4.37 (Estimated value)
- Auto-ignition temperature : No data available
- Decomposition temperature : > 350 °C
- Viscosity, kinematic : No data available
- Viscosity, dynamic : No data available
- Explosion limits : No data available
- Explosive properties : No data available.
- Oxidizing properties : No data available.

Ammonium Chloride

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

9.2. Other information

Sublimation point : 338 °C
VOC content : Not applicable
Other properties : Hygroscopic. May sublime. Substance has acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

On burning: release of toxic and corrosive gases/vapours (hydrogen chloride, ammonia, chlorine, nitrous vapours). Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Reacts violently with (some) halogens compounds: (increased) risk of fire/explosion. Reacts with (some) acids: release of toxic and corrosive gases/vapours (hydrogen chloride). Reacts with (some) bases: release of corrosive gases/vapours (ammonia).

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

Contact with acids liberates toxic gas.

10.4. Conditions to avoid

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

10.5. Incompatible materials

Oxidizing agent. Strong acids. silver nitrate. Strong reducing agents.

10.6. Hazardous decomposition products

Gaseous ammonia.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact
Acute toxicity : Oral: Harmful if swallowed.

Ammonium Chloride (12125-02-9)	
LD50 oral rat	1650 mg/kg (Rat; Literature study)
ATE US (oral)	1650.000 mg/kg body weight

Skin corrosion/irritation : Not classified
pH: 5.0 (10 %)

Serious eye damage/irritation : Not classified
pH: 5.0 (10 %)

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

Symptoms/injuries after inhalation : AFTER INHALATION OF DUST: Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. AFTER INHALATION OF FUME: Respiratory difficulties.

Symptoms/injuries after skin contact : Red skin.

Symptoms/injuries after eye contact : Redness of the eye tissue. Irritation of the eye tissue.

Symptoms/injuries after ingestion : AFTER ABSORPTION OF LARGE QUANTITIES: Change in the blood composition. Headache. Nausea. Vomiting. Mental confusion.

Symptoms/injuries upon intravenous administration : No effects known.

Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. Red skin. Dry skin. Itching. AFTER INHALATION OF FUME: Respiratory difficulties.

Ammonium Chloride

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 12: Ecological information

12.1. Toxicity

- Ecology - general : Classification concerning the environment: not applicable.
- Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). Not included in the list of substances which may contribute to the greenhouse effect (Regulation (EC) No 842/2006).
- Ecology - water : Maximum concentration in drinking water: 0.50 mg/l (ammonium) (Directive 98/83/EC); 250 mg/l (chloride) (Directive 98/83/EC). Toxic to fishes. Slightly harmful to invertebrates (Daphnia) (EC50 (48h): 100 - 1000 mg/l). May cause eutrophication.

Ammonium Chloride (12125-02-9)	
EC50 Daphnia 1	161 mg/l (EC50; 48 h)
Threshold limit algae 2	< 70 mg/l (EC50; 240 h)

12.2. Persistence and degradability

Ammonium Chloride (12125-02-9)	
Persistence and degradability	Readily biodegradable in water.

12.3. Bioaccumulative potential

Ammonium Chloride (12125-02-9)	
Log Pow	-4.37 (Estimated value)
Bioaccumulative potential	Bioaccumulation: not applicable.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Waste disposal recommendations : 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. Precipitate/make insoluble. Remove to an authorized dump (Class I). Do not discharge into drains or the environment. May be discharged to wastewater treatment installation.
- Additional information : LWCA (the Netherlands): KGA category 05. Hazardous waste according to Directive 2008/98/EC.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

SECTION 15: Regulatory information

15.1. 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)	5000 lb

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

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Ammonium Chloride

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

15.2. International regulations

CANADA

Ammonium Chloride (12125-02-9)

WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects
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EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

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

Revision date : 11/02/2016

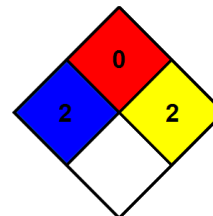
Full text of H-phrases: see section 16:

H302	Harmful if swallowed
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NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 2 - Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.



HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 2 Moderate Hazard - Materials that are unstable and may undergo violent chemical changes at normal temperature and pressure with low risk for explosion. Materials may react violently with water or form peroxides upon exposure to air.

Personal protection : B

B - Safety glasses, Gloves

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