Ammonium Chloride

Safety Data Sheet

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

Issue date: 07/24/2006 Revision date: 05/21/2020 Supersedes: 11/02/2016 Version: 2.2

SECTION 1: Identification

1.1. Identification

Product form	:	Substance
Substance name	:	Ammonium Chloride
CAS-No.	:	12125-02-9
Product code	:	C1520
Formula	:	NH4Cl
Synonyms	:	amchlor / amchloride / ammonii chloridum / ammonium muriate / muriate of ammonia / sal ammoniac / salmiac

1.2. Recommended use and restrictions on use

Use of the substance/mixture	:	Pharmaceutical product: component Electrolyte Fertilizer Laboratory chemical Chemical raw material Explosive: additive Food industry: additive Veterinary medicine
Recommended use	:	Laboratory chemicals
Restrictions on use	:	Not for food, drug or household use

1.3. Supplier

Lab Alley LLC
12501 Pauls Valley Road, Suite A
Austin, Texas 78737
512-668-9918

www.laballey.com

1.4. Emergency telephone number

Emergency number	:	InfoTrac: 800-535-5053

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Acute toxicity (oral) Category 4 H302 Harmful if swallowed

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :

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 which do not result in classification

Other hazards not contributing to the classification	:	None.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

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. Mixtures

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. Do not apply (chemical) neutralizing agents without medical advice. Take victim to a doctor if irritation persists.

First-aid measures after 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.

First-aid measures after 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. 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.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms : Harmful if swallowed. Not irritant to skin. Practically non-toxic in contact with skin (LD50 skin > 2000 mg/kg). Causes serious eye irritation.

Symptoms/effects after inhalation : AFTER INHALATION OF DUST: Coughing. AFTER INHALATION OF FUME: Respiratory difficulties.

Symptoms/effects after skin contact : Red skin.

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

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

Symptoms/effects upon intravenous administration : No effects known.

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

4.3. Immediate medical attention and special treatment, if necessary

Obtain medical assistance. Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Adapt extinguishing media to the environment for surrounding fires.

5.2. Specific hazards arising from the chemical

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".

5.3. Special protective equipment and precautions for fire-fighters

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. Take account of toxic/corrosive precipitation water.

Protection during firefighting : Heat/fire exposure: compressed air apparatus (EN 136 + EN 137).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Gloves (EN 374). Safety glasses (EN166). Protective clothing (EN 14605 or EN 13034). Dust cloud production: compressed air apparatus (EN 136 + EN 137). Reactivity hazard: compressed air apparatus (EN 136 + EN 137). Reactivity hazard: gas-tight suit (EN 943).

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. 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 : Stop dust cloud by humidifying. Scoop solid spill into closing containers. 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 : 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

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 : 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/m³)	10 mg/m³
ACGIH	ACGIH STEL (mg/m³)	20 mg/m³
NIOSH	NIOSH REL (TWA) (mg/m³)	10 mg/m³
NIOSH	NIOSH REL (STEL) (mg/m³)	20 mg/m³

8.2. Appropriate engineering controls

Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Safety glasses. Dust production: dust mask with filter type P2.

Materials for protective clothing:

GIVE GOOD RESISTANCE: butyl rubber. neoprene. PVC

Hand protection:

Gloves

Eye protection:

Safety glasses (EN166). In case of dust production: protective goggles (EN 166)

Skin and body protection:

Protective clothing (EN 14605 or EN 13034)

Respiratory protection:

Dust production: dust mask with filter type P2

Personal protective equipment symbol(s):

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 (10 %)
Melting point	:	Not applicable (decomposes)
Freezing point	:	No data available
Boiling point	:	Not applicable (decomposes)
Flash point	:	Not applicable (solid)
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	Not applicable (solid)
Relative vapor density at 20 °C	:	1.8
Relative density	:	1.53 (25 °C)
Specific gravity / density	:	1530 kg/m³ (25 °C)
Molecular mass	:	53.49 g/mol
Solubility	:	Soluble in water. Soluble in methanol. Soluble in ammonia. Soluble in glycerol. Water: 37.2 g/100ml (20 °C) Ethanol: 2 g/100ml
Log Pow	:	-4.37 (Estimated value)
Auto-ignition temperature	:	> 400 °C (EU Method A.16: Relative Self-Ignition Temperature for Solids)

Decomposition temperature	:	338 °C
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	Not applicable (solid)
Explosion limits	:	No data available
Explosive properties	:	No data available.
Oxidizing properties	:	No data available.

9.2. Other information

Sublimation point	:	338 °C
VOC content	:	Not applicable (inorganic)
Other properties	:	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

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

Acute toxicity (oral)	:	Harmful if swallowed.
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Not classified

Ammonium Chloride (12125-02-9)	
LD50 oral rat	1410 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg body weight (EU Method B.3: Acute toxicity (dermal), 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
LC50 inhalation rat (mg/l)	> 3.6 mg/l (4 h, Rat, Read-across, Inhalation)
ATE US (oral)	1410 mg/kg body weight

Skin corrosion/irritation	:	Not classified pH: 5 (10 %)
Serious eye damage/irritation	:	Not classified pH: 5 (10 %)
Respiratory or skin sensitization	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
STOT-single exposure	:	Not classified
STOT-repeated exposure	:	Not classified
Aspiration hazard	:	Not classified
Viscosity, kinematic	:	No data available
Likely routes of exposure	:	Inhalation. Skin and eye contact.

Potential Adverse human health effects and symptoms	:	Harmful if swallowed. Not irritant to skin. Practically non-toxic in contact with skin (LD50 skin > 2000 mg/kg). Causes serious eye irritation.
Symptoms/effects after inhalation	:	AFTER INHALATION OF DUST: Coughing. AFTER INHALATION OF FUME: Respiratory difficulties.
Symptoms/effects after skin contact	:	Red skin.
Symptoms/effects after eye contact	:	Redness of the eye tissue. Irritation of the eye tissue.
Symptoms/effects after ingestion	:	AFTER ABSORPTION OF LARGE QUANTITIES: Change in the blood composition. Headache. Nausea. Vomiting. Mental confusion.
Symptoms/effects upon intravenous administration	:	No effects known.
Chronic symptoms	:	Skin rash/inflammation. Red skin. Dry skin. Itching. AFTER INHALATION OF FUME: Respiratory difficulties.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	:	Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air	:	Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	:	Slightly harmful to crustacea. Slightly harmful to fishes. In appropriate low concentrations inhibition of the degradation of activated sludge is not anticipated. Not harmful to algae.

Ammonium Chloride (12125-02-9)	
LC50 fish 1	209 mg/l (APHA, 96 h, Cyprinus carpio, Semi-static system, Experimental value)
EC50 Daphnia 1	101 mg/l (ASTM E729-80, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Lethal)

12.2. Persistence and degradability

Ammonium Chloride (12125-02-9)	
Persistence and degradability	Biodegradability: not applicable.

12.3. Bioaccumulative potential

Ammonium Chloride (12125-02-9)	
Log Pow	-4.37 (Estimated value)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

Ammonium Chloride (12125-02-9)	
Surface tension	No data available in the literature
Ecology - soil	No (test)data on mobility of the substance available.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations	:	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.
Additional information	:	Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

Transport by sea

Not regulated

Air transport

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
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

15.2. International regulations

CANADA
No additional information available

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

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

Revision date : 05/21/2020

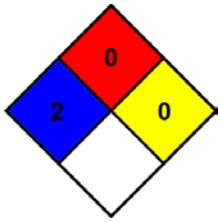
Full text of H-phrases: see section 16:

H302	Harmful if swallowed

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard 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	:	E E - Safety glasses, Gloves, Dust respirator

SDS US LabAlley