Ammonium chloride a.r.

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 3/17/2023 Version: 1.1

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

1.1. Product identifier

Product form	:	Substance
Trade name	:	Ammonium chloride a.r.
EC Index-No.	:	017-014-00-8
EC-No.	:	235-186-4
CAS-No.	:	12125-02-9
REACH registration No.	:	01-2119489385-24
Product code	:	CL00.0130
Type of product	:	Pure substance,Hygroscopic substance. Preventive measures apply to the substance in dry state only
Formula	:	NH4Cl
Synonyms	:	AI3-08937 / amchlor / amchloride / ammon chlor / ammoneric / ammoniac salt / ammonii chloridum / ammonium chloride / ammonium chloride ((NH4)Cl) / ammonium muriate / B743 / darammon / muriate of ammonia / sal ammonia / sal ammoniac / salammoniate / salammonite / salmiac / salmiak
BIG No	:	11143

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemical

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Chem-Lab nv
Industriezone 'De arend 2'
Zedelgem – Belgium
Belgium
T +32 50 288320
info@chem-lab.be - https://www.chem-lab.be

1.4. Emergency telephone number

Emergency number : +32 50 28 83 20

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (oral), Category 4	H302
Serious eye damage/eye irritation, Category 2	H319

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS07

Signal word (CLP)	:	Warning
Hazard statements (CLP)	:	H302 - Harmful if swallowed. H319 - Causes serious eye irritation.
Precautionary statements (CLP)	:	P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Ammonium chloride a.r.	CAS-No.: 12125-02-9 EC-No.: 235-186-4 EC Index-No.: 017-014-00-8 REACH-no: 01-2119489385-24	100	Acute Tox. 4 (Oral), H302 (ATE=1410 mg/kg bodyweight) Eye Irrit. 2, H319

Full text of H- and EUH-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	:	Observe (own) safety. If possible, approach victim and check vital functions. In case of injury and/or intoxication, call the European emergency number 112. Treat symptoms starting with most life-threatening injuries and disorders. Keep victim under observation, possibility of delayed symptoms.
First-aid measures after inhalation	:	Remove victim into fresh air. In case of respiratory problems, consult a doctor/medical service.
First-aid measures after skin contact	:	If possible, wipe up/dry remove chemical. Then rinse/shower immediately with (lukewarm) water. If irritation persists, consult a doctor/medical service.
First-aid measures after eye contact	:	Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, consult a doctor/medical service.
First-aid measures after ingestion	:	Rinse mouth with water. Immediately consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.

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

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	:	Irritation of the eye tissue. Redness of the eye tissue.
Symptoms/effects after ingestion	:	AFTER INGESTION OF HIGH QUANTITIES: Change in the haemogramme/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. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

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 : DIRECT EXPLOSION HAZARD: No direct explosion hazard. INDIRECT EXPLOSION HAZARD: Reactions with explosion hazards: see "Reactivity Hazard".

Hazardous decomposition products in case of fire : On heating/burning: release of toxic and corrosive gases/vapours (ammonia, chlorine, nitrous vapours, hydrogen chloride).

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. Take account of toxic/corrosive precipitation water.

Protection during firefighting : Heat/fire exposure: self-contained breathing 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 (EN 166). Protective clothing (EN 14605 or EN 13034). Dust cloud production: self-contained breathing apparatus (EN 136 + EN 137).

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

No additional information available

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

For containment : Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray.

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. Keep container tightly closed.

Hygiene measures : Observe strict hygiene.

7.2. Conditions for safe storage, including any incompatibilities

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.

Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases. metals. halogens. Nitrite. water/moisture.

Storage area : Meet the legal requirements. Store in a cool area. Store in a dry area. Keep container in a well-ventilated place.

Special rules on packaging : SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials : MATERIAL TO AVOID: carbon steel. copper. aluminium. lead. iron.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Ammonium chloride a.r. (12125-02-9)	
Belgium - Occupational Exposure Limits	
OEL TWA	10 mg/m³
OEL STEL	20 mg/m³
France - Occupational Exposure Limits	
VME (OEL TWA)	10 mg/m³
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	10 mg/m³
WEL STEL (OEL STEL)	20 mg/m³
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	10 mg/m³
ACGIH OEL STEL	20 mg/m³

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

Ammonium chloride a.r. (12125-02-9)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	128.9 mg/kg bw/day
Long-term - systemic effects, inhalation	43.97 mg/m³

Ammonium chloride a.r. (12125-02-9)	
DNEL/DMEL (General population)	
Acute - systemic effects, oral	55.2 mg/kg bw/day
Long-term - systemic effects,oral	55.2 mg/kg bw/day
Long-term - systemic effects, inhalation	9.4 mg/m³
Long-term - systemic effects, dermal	55.2 mg/kg bw/day
PNEC (Water)	
PNEC aqua (freshwater)	0.25 mg/l
PNEC aqua (marine water)	0.025 mg/l
PNEC (Soil)	
PNEC soil	50.7 mg/kg dwt

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

No additional information available

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):

8.2.2.1. Eye and face protection

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

8.2.2.2. Skin protection

Skin and body protection:
Protective clothing (EN 14605 or EN 13034)

Hand protection:
Protective gloves against chemicals (EN 374)

Other skin protection

Materials for protective clothing:
Excellent resistance: Nitrile rubber. Polyvinylchloride (PVC). Good resistance: Butyl rubber. neoprene (chloroprene rubber). Polyvinylchloride (PVC)

8.2.2.3. Respiratory protection

Respiratory protection:
Dust production: dust mask with filter type P2

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Colour	:	Colourless to white.
Appearance	:	Crystalline solid. Crystalline powder.
Molecular mass	:	53.49 g/mol
Odour	:	Odourless.
Odour threshold	:	Not available
Melting point	:	Not applicable (decomposes)
Freezing point	:	Not available
Boiling point	:	Not applicable (decomposes)
Flammability	:	Not available
Explosive properties	:	Not explosive.
Oxidising properties	:	Not oxidising.
Explosive limits	:	Not applicable
Lower explosion limit	:	Not applicable
Upper explosion limit	:	Not applicable
Flash point	:	Not applicable (solid)
Auto-ignition temperature	:	> 400 °C (EU Method A.16: Relative Self-Ignition Temperature for Solids, T2)
Decomposition temperature	:	338 °C
pH	:	5 (10 %, 25 °C)
pH solution	:	Not available
Viscosity, kinematic	:	Not applicable (solid)
Viscosity, dynamic	:	Not applicable (solid)
Solubility	:	Soluble in water. Soluble in methanol. Soluble in ammonia. Soluble in glycerol. Water: 37.2 g/100ml (20 °C) Ethanol: 2 g/100ml
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Partition coefficient n-octanol/water (Log Pow)	:	-3.2 (Experimental value, 25 °C)
Vapour pressure	:	Not applicable (solid)
Vapour pressure at 50°C	:	Not available
Density	:	1527 kg/m³ (25 °C)
Relative density	:	1.53 (25 °C)
Relative vapour density at 20°C	:	1.8
Particle size	:	60 µm (D10, Laser diffraction analysis)

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

Sublimation point	:	338 °C
VOC content	:	Not applicable (inorganic)
Other properties	:	Hygroscopic,May sublimate,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

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Reacts with (some) acids: release of toxic and corrosive gases/vapours (hydrogen chloride). Reacts with (some) bases: release of corrosive gases/vapours (ammonia).

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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

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

Skin corrosion/irritation : Not classified
pH: 5 (10 %, 25 °C)
Serious eye damage/irritation : Causes serious eye irritation.
pH: 5 (10 %, 25 °C)
Respiratory or skin sensitisation : 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

Ammonium chloride a.r. (12125-02-9)	
Viscosity, kinematic	Not applicable (solid)

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

No additional information available

11.2.2. Other information

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.

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 (Daphnia). Slightly harmful to fishes. No inhibition of activated sludge. Not harmful to algae. May cause eutrophication. pH shift.

Hazardous to the aquatic environment, short–term (acute) : Not classified

Hazardous to the aquatic environment, long–term (chronic) : Not classified

Not rapidly degradable

Ammonium chloride a.r. (12125-02-9)	
LC50 - Fish [1]	209 mg/l (APHA, 96 h, Cyprinus carpio, Semi-static system, Experimental value)
EC50 - Crustacea [1]	101 mg/l (ASTM E729-80, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Lethal)
ErC50 algae	1300 mg/l (5 day(s), Chlorella vulgaris, Static system, Fresh water, Experimental value, Nominal concentration)

12.2. Persistence and degradability

Ammonium chloride a.r. (12125-02-9)	
Persistence and degradability	Biodegradability: not applicable.

12.3. Bioaccumulative potential

Ammonium chloride a.r. (12125-02-9)	
Partition coefficient n-octanol/water (Log Pow)	-3.2 (Experimental value, 25 °C)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

Ammonium chloride a.r. (12125-02-9)	
Surface tension	No data available in the literature
Ecology - soil	Adsorption to soil is possible.

12.5. Results of PBT and vPvB assessment

Ammonium chloride a.r. (12125-02-9)
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Do not discharge into drains or the environment. Dispose of at authorized waste collection point. 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.
European List of Waste (LoW) code	:	15 01 10* - packaging containing residues of or contaminated by dangerous substances

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

14.6. Special precautions for user

Overland transport
Not applicable

Transport by sea
Not applicable

Air transport
Not applicable

Inland waterway transport
Not applicable

Rail transport
Not applicable

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Not listed on REACH Annex XVII

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

VOC Directive (2004/42)

VOC content : Not applicable (inorganic)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

Germany

Employment restrictions : Observe restrictions according Act on the Protection of Working Mothers (MuSchG).
Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG).

Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to AwSV; ID No. 213).

Storage class (LGK, TRGS 510) : LGK 13 - Non-combustible solids.

Joint storage table :

LGK 1	LGK 2A	LGK 2B	LGK 3	LGK 4.1A
LGK 4.1B	LGK 4.2	LGK 4.3	LGK 5.1A	LGK 5.1B
LGK 5.1C	LGK 5.2	LGK 6.1A	LGK 6.1B	LGK 6.1C
LGK 6.1D	LGK 6.2	LGK 7	LGK 8A	LGK 8B
LGK 10	LGK 11	LGK 12	LGK 13	LGK 10-13

Joint storage not permitted for : LGK 1, LGK 6.2, LGK 7.

Joint storage with restrictions permitted for : LGK 4.1A, LGK 5.1C.

Joint storage permitted for : LGK 2A, LGK 2B, LGK 3, LGK 4.1B, LGK 4.2, LGK 4.3, LGK 5.1A, LGK 5.1B, LGK 5.2, LGK 6.1A, LGK 6.1B, LGK 6.1C, LGK 6.1D, LGK 8A, LGK 8B, LGK 10, LGK 11, LGK 12, LGK 13, LGK 10-13.

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Technical Instructions on Air Quality Control (TA Luft) : 5.2.1 Total Dust, including Micro Dust.

Netherlands

ABM category : B(4) - low hazard for aquatic organisms

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

SZW-lijst van reprotoxische stoffen – Borstvoeding : The substance is not listed

SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : The substance is not listed

SZW-lijst van reprotoxische stoffen – Ontwikkeling : The substance is not listed

Switzerland

Storage class (LK) : LK 11/13 - Solids

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of H- and EUH-statements:	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H302	Harmful if swallowed.
H319	Causes serious eye irritation.

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.