

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Reference number: A0528

Issue date: 07/05/2024 Revision date: 07/05/2024 Supersedes version of: 08/11/2023 Version: 4.1

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

1.1. Product identifier

Product form	: Substance
Trade name	: Ammonium chloride
Chemical name	: Ammonium chloride
EC Index-No.	: 017-014-00-8
EC-No.	: 235-186-4
CAS-No.	: 12125-02-9
REACH registration No.	: 01-2119487950-27
Product code	: A0528
Formula	: NH ₄ Cl
Product group	: Raw material
Other means of identification	: ammonium chloride

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

1.2.1. Relevant identified uses

Main use category	: Professional use
Industrial/Professional use spec	: For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Distributor

Duchefa Biochemie B.V.
A. Hofmanweg 71
2031 BH Haarlem
The Netherlands
T +31(0)23-5319093 - F +31(0)23-5318027
info@duchefa.nl

1.4. Emergency telephone number

Emergency number	: Supplier contact information: +31(0)23-5319093 (M-F 09:00-17:00) +31(0)6-30008100 (outside office hours)
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Country	Organisation/Company	Address	Emergency number	Comment
	World Health Organization world directory of poison centres	http://apps.who.int/poisoncentres/		Consult website for a local poison centre

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

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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)

: P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.

P330 - Rinse mouth.

P305+P351 - IF IN EYES: Rinse cautiously with water for several minutes.

P337+P313 - If eye irritation persists: Get medical advice/attention.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type

: Mono-constituent

Name	Product identifier	%
Ammonium chloride	CAS-No.: 12125-02-9 EC-No.: 235-186-4 EC Index-No.: 017-014-00-8 REACH-no: 01-2119487950-27	≥ 99 – 100

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general

: Get medical advice/attention if you feel unwell.

First-aid measures after inhalation

: Allow affected person to breathe fresh air. Seek medical advice.

First-aid measures after skin contact

: Wash skin with mild soap and water.

First-aid measures after eye contact

: Immediately rinse with water for a prolonged period while holding the eyelids wide open. Consult an eye specialist.

First-aid measures after ingestion

: Rinse mouth out with water. Drink plenty of water. Call a POISON CENTER/doctor if you feel unwell.

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

Symptoms/effects after ingestion

: On ingestion in large quantities: Headache. Nausea. Unconsciousness.

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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 : Dry chemical, CO₂, or water spray or regular foam.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Not combustible.
Hazardous decomposition products in case of fire : Under fire conditions, hazardous fumes will be present. Chlorine. HCl. Nitrogen oxides. Ammonia (NH₃).

5.3. Advice for firefighters

Precautionary measures fire : Do not enter fire area without proper protective equipment, including respiratory protection.
Firefighting instructions : Prevent fire fighting water from entering the environment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.
Measures in case of dust release : Avoid dust formation.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment. Do not allow to enter drains or water courses.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Sweep up dry powder and dispose properly.

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 : Ensure good ventilation of the work station. Avoid dust formation. Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store at room temperature. Store in dry, well-ventilated area. Keep container tightly closed.
Incompatible products : Oxidizing agent.

7.3. Specific end use(s)

For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

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SECTION 8: Exposure controls/personal protection**8.1. Control parameters****8.1.1 National occupational exposure and biological limit values**

Ammonium chloride (12125-02-9)	
Belgium - Occupational Exposure Limits	
Local name	Ammonium (chlorure d') (fumées) # Ammoniumchloride (rook)
OEL TWA	10 mg/m ³
OEL STEL	20 mg/m ³
Regulatory reference	Koninklijk besluit/Arrêté royal 16/11/2023
Bulgaria - Occupational Exposure Limits	
Local name	Амониев хлорид
OEL TWA	10 mg/m ³
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)
Croatia - Occupational Exposure Limits	
Local name	Amonijev klorid
GVI (OEL TWA) [1]	10 mg/m ³
KGVI (OEL STEL)	20 mg/m ³
Regulatory reference	Pravilnik o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 148/2023)
Czech Republic - Occupational Exposure Limits	
Local name	Chlorid amonný
PEL (OEL TWA)	5 mg/m ³ (dýmy)
NPK-P (OEL C)	10 mg/m ³ (dýmy)
Remark	I - dráždí sliznice (oči, dýchací cesty) resp. kůži.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 330/2023 Sb.)
Denmark - Occupational Exposure Limits	
Local name	Ammoniumchloridrøg
OEL TWA [1]	10 mg/m ³
Regulatory reference	BEK nr 202 af 21/02/2023
France - Occupational Exposure Limits	
Local name	Ammonium (Chlorure d'), fumées (Chlorure d'ammonium)
VME (OEL TWA)	10 mg/m ³
Remark	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 6443, 2022; Outil65)
Greece - Occupational Exposure Limits	
Local name	Χλωριούχο αμμώνιο (καπνός)

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OEL TWA	10 mg/m ³
OEL STEL	20 mg/m ³
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Ireland - Occupational Exposure Limits	
Local name	Ammonium chloride, fume
OEL TWA [1]	10 mg/m ³
OEL STEL	20 mg/m ³
Regulatory reference	Chemical Agents Code of Practice 2021
Latvia - Occupational Exposure Limits	
Local name	Amonija hlorīds
OEL TWA	10 mg/m ³
Regulatory reference	Ministru kabineta 2007. gada 15. maija noteikumiem Nr. 325 (Grozījumi Ministru kabineta 2011. gada 1. februārī noteikumiem Nr. 92)
Lithuania - Occupational Exposure Limits	
Local name	Amonio chloridas
IPRV (OEL TWA)	10 mg/m ³
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Poland - Occupational Exposure Limits	
Local name	Chlorek amonu (amonowy chlorek)
NDS (OEL TWA)	10 mg/m ³ pary i frakcja wdychalna
NDSch (OEL STEL)	20 mg/m ³ pary i frakcja wdychalna
Remark	Frakcja wdychalna – frakcja aerozolu wnikażąca przez nos i usta, która po zdeponowaniu w drogach oddechowych stwarza zagrożenie dla zdrowia.
Regulatory reference	Dz. U. 2018 poz. 1286 wraz z późn. zm.
Portugal - Occupational Exposure Limits	
Local name	Cloreto de amónio, fumos
OEL TWA	10 mg/m ³
OEL STEL	20 mg/m ³
Regulatory reference	Norma Portuguesa NP 1796:2014
Romania - Occupational Exposure Limits	
Local name	Clorură de amoniu
OEL TWA	5 mg/m ³
OEL STEL	10 mg/m ³
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 53/2021)
Spain - Occupational Exposure Limits	
Local name	Cloruro amónico
VLA-ED (OEL TWA) [1]	10 mg/m ³ humos
VLA-EC (OEL STEL)	20 mg/m ³ humos

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Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2024. INSHT
United Kingdom - Occupational Exposure Limits	
Local name	Ammonium chloride
WEL TWA (OEL TWA) [1]	10 mg/m ³ fume
WEL STEL (OEL STEL)	20 mg/m ³ fume
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Iceland - Occupational Exposure Limits	
Local name	Ammóníumklóríðreykur
OEL TWA	10 mg/m ³
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	Ammoniumklorid
Grenseverdi (OEL TWA) [1]	10 mg/m ³
Remark	1) Grenseverdien er fastsatt lik verdien for sjenerende støv.
Regulatory reference	FOR-2023-12-18-2278
Switzerland - Occupational Exposure Limits	
Local name	Chlorure d'ammonium / Ammoniumchlorid
MAK (OEL TWA) [1]	3 mg/m ³ (a) / (a)
Regulatory reference	www.suva.ch, 01.01.2024
USA - ACGIH - Occupational Exposure Limits	
Local name	Ammonium chloride, fume
ACGIH OEL TWA	10 mg/m ³
ACGIH OEL STEL	20 mg/m ³
Remark (ACGIH)	TLV® Basis: Eye & URT irr
Regulatory reference	ACGIH 2024

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

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

No additional information available

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8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection

Type	Field of application	Characteristics	Standard
Safety glasses	Dust	With side shields	EN 166

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0,11		EN ISO 374

8.2.2.3. Respiratory protection

Respiratory protection

Device	Filter type	Condition	Standard
Dust mask	Type P2	Dust protection	EN 143

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	: White.
Appearance	: Crystalline powder.
Molecular mass	: 53,5 g/mol
Odour	: Odourless.
Odour threshold	: Not available
Melting point	: 338 °C
Freezing point	: Not available
Boiling point	: 520 °C
Flammability	: Not available
Explosive limits	: Not applicable
Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: > 350 °C
pH	: 4,7 200 g/l, 25°C
pH solution	: 4,5 – 5,5 % (50 g/l 20°C)

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Viscosity, kinematic	: Not applicable
Solubility	: Water: 296 – 298 g/l 20°C, pH 5,4
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: ≈ 66 mbar 250°C
Vapour pressure at 50°C	: Not available
Density	: 1,5274 g/cm ³ 20°C
Relative density	: 1,53 Type: 'relative density' Temp.: 25 °C
Relative vapour density at 20°C	: Not applicable
Particle size	: Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

Relative evaporation rate (butylacetate=1) : >

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions of storage, handling and use.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Extremely high or low temperatures. Direct sunlight. Moisture.

10.5. Incompatible materials

Strong bases. Strong acids. Oxidising agents.

10.6. Hazardous decomposition products

Nitrogen oxides. Hydrogen chloride (gas). Ammonia (NH₃).

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 (12125-02-9)	
LD50 oral rat	1410 mg/kg
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: EU Method B.3 (Acute Toxicity (Dermal))

Skin corrosion/irritation	: Not classified pH: 4,7 200 g/l, 25°C
Serious eye damage/irritation	: Causes serious eye irritation. pH: 4,7 200 g/l, 25°C
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

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Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified

Ammonium chloride (12125-02-9)

NOAEL (oral, rat, 90 days)	≈ 1695,7 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
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Aspiration hazard	: Not classified
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11.2. Information on other hazards**11.2.1. Endocrine disrupting properties**

Adverse health effects caused by endocrine disrupting properties	: The substance/mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %
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11.2.2. Other information

No additional information available

SECTION 12: Ecological information**12.1. Toxicity**

Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

Ammonium chloride (12125-02-9)

LC50 - Fish [1]	42,91 mg/l Oncorhynchus mykiss
EC50 - Crustacea [1]	136,6 mg/l Daphnia magna

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties	: The substance/mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %.
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12.7. Other adverse effects

Additional information	: Prevent entry to sewers and public waters. Avoid release to the environment
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SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Waste treatment methods : Dispose in a safe manner in accordance with local/national regulations. Dispose of this material and its container to hazardous or special waste collection point.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA

ADR	IMDG	IATA
14.1. UN number or ID number		
Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name		
Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)		
Not applicable	Not applicable	Not applicable
14.4. Packing group		
Not applicable	Not applicable	Not applicable
14.5. Environmental hazards		
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

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)

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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)

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

Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to VwVwS, Annex 1 or 2; ID No. 213).

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

Netherlands

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

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

Vruchtbaarheid

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

Ontwikkeling

Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Issue date	Modified	
	Regulatory framework	Added	
	Supersedes	Modified	
	Revision date	Modified	

Abbreviations and acronyms:	
ATE	Acute Toxicity Estimate
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DPD	Dangerous Preparations Directive 1999/45/EC
DSD	Dangerous Substances Directive 67/548/EEC

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Abbreviations and acronyms:

IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
PBT	Persistent Bioaccumulative Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
SDS	Safety Data Sheet

Data sources

: Supplier. REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. ECHA (European Chemicals Agency).

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 Duchefa 2023

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.