

Safety Data Sheet

Ammonium chloride S food/pharma grade

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Version: 1.0

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(30046480/SDS_GEN_US/EN)

1. Identification

Product identifier used on the label

Ammonium chloride S food/pharma grade

Recommended use of the chemical and restriction on use

Recommended use*: Raw material; auxiliary; inorganic salts; flavours

* The "Recommended use" identified for this product is provided solely to comply with a US Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:

BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Molecular formula: NH_4Cl
Synonyms: AMMONIUM CHLORIDE

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Acute Tox.	4 (oral)	Acute toxicity
Eye Dam./Irrit.	2A	Serious eye damage/eye irritation
Aquatic Acute	3	Hazardous to the aquatic environment - acute

Label elements

Pictogram:

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Signal Word:
Warning

Hazard Statement:

H319 Causes serious eye irritation.
H302 Harmful if swallowed.
H402 Harmful to aquatic life.

Precautionary Statements (Prevention):

P280 Wear eye/face protection.
P273 Avoid release to the environment.
P270 Do not eat, drink or smoke when using this product.
P264 Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):

P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301 + P330 IF SWALLOWED: rinse mouth.
P337 + P311 If eye irritation persists: Call a POISON CENTER or doctor/physician.

Precautionary Statements (Disposal):

P501 Dispose of contents/container to hazardous or special waste collection point.

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture. No specific dangers known, if the regulations/notes for storage and handling are considered.

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Emergency overview

WARNING:

CAUSES EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

HARMFUL IF SWALLOWED.

INGESTION MAY CAUSE GASTRIC DISTURBANCES.

Avoid contact with the skin, eyes and clothing.

Avoid inhalation of dusts.

Wear a NIOSH-certified (or equivalent) particulate respirator.

Wear NIOSH-certified chemical goggles.

Wear chemical resistant protective gloves.

Wear protective clothing.

Eye wash fountains and safety showers must be easily accessible.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
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12125-02-9	$\geq 75.0 - \leq 100.0$ %	ammonium chloride
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According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
12125-02-9	≥ 99.0 %	ammonium chloride

4. First-Aid Measures

Description of first aid measures

General advice:

Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air. If symptoms persist, seek medical advice.

If on skin:

Wash thoroughly with soap and water. If symptoms persist, seek medical advice.

If in eyes:

Flush with copious amounts of water for at least 15 minutes. Seek medical attention.

If swallowed:

Rinse mouth immediately and then drink plenty of water, seek medical attention.

Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.

Most important symptoms and effects, both acute and delayed

Symptoms: Overexposure may cause:., vomiting, lethargy, confusion, hyperventilation, nausea, headache

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
foam, water spray, dry powder

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
No particular hazards known.

Advice for fire-fighters

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Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Product itself is non-combustible; fire extinguishing method of surrounding areas must be considered. In case of fire and/or explosion do not breathe fumes. Large quantities of extinguishing water containing dissolved product should be contained. Contaminated extinguishing water must be disposed of in accordance with official regulations.

Impact Sensitivity:

Remarks: Based on the chemical structure there is no shock-sensitivity.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Use personal protective clothing.

Environmental precautions

Do not empty into drains.

Do not discharge into drains/surface waters/groundwater. This product is regulated by CERCLA ('Superfund').

Methods and material for containment and cleaning up

For small amounts: Sweep/shovel up.

For large amounts: Sweep/shovel up.

Avoid raising dust.

7. Handling and Storage

Precautions for safe handling

Avoid contact with skin and eyes. Handle in accordance with good industrial hygiene and safety practice. Keep the formation and deposition of dust to a minimum.

Protection against fire and explosion:

See MSDS section 5 - Fire fighting measures.

Conditions for safe storage, including any incompatibilities

Segregate from alkalies and alkalinizing substances. Segregate from nitrites. Segregate from oxidants. Do not store with: Sodium nitrate

Further information on storage conditions: Protect against moisture.

8. Exposure Controls/Personal Protection

Advice on system design:

Provide local exhaust ventilation to control dust.

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Personal protective equipment

Respiratory protection:

Breathing protection if breathable aerosols/dust are formed. Wear a NIOSH-certified (or equivalent) particulate respirator.

Hand protection:

Chemical resistant protective gloves, Suitable materials, rubber, plastic

Eye protection:

Tightly fitting safety goggles (chemical goggles).

Body protection:

Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Wash soiled clothing immediately.

9. Physical and Chemical Properties

Form:	crystalline, powder	
Odour:	almost odourless	
Colour:	white	
pH value:	approx. 4.7	(200 g/l, 25 °C) (DIN ISO 976)
Melting point:	338 °C	The substance / product decomposes. Literature data.
Sublimation point:	338 °C	The substance / product decomposes.
Flash point:		not applicable
Flammability:	not flammable	(other)
Autoignition:		The substance / product decomposes therefore not determined.
Density:	1.53 g/cm ³	(25 °C) Literature data.
Bulk density:	600 - 900 kg/m ³	(DIN ISO 697)
Partitioning coefficient n-octanol/water (log Pow):		The value has not been determined because the substance is inorganic.
Self-ignition temperature:		not applicable
Thermal decomposition:	To avoid thermal decomposition, do not overheat.	not self-igniting
Viscosity, dynamic:		not applicable
Solubility in water:	372 g/l	(20 °C) Literature data.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:

No corrosive effect on metal.

Oxidizing properties:

Based on its structural properties the product is not classified as oxidizing.

Chemical stability

The product is chemically stable.

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Possibility of hazardous reactions

Violent reaction under influence of oxidizing agents. Incompatible with bases. Reacts with nitrites.

Conditions to avoid

Avoid heat. Avoid moisture. See MSDS section 7 - Handling and storage.

Incompatible materials

nitrites, nitrates, oxidizing agents

Hazardous decomposition products

Decomposition products:

Hazardous decomposition products: Hydrogen chloride, ammonia

Thermal decomposition:

To avoid thermal decomposition, do not overheat.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Of moderate toxicity after single ingestion. Virtually nontoxic after a single skin contact. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Oral

Type of value: LD50

Species: rat (male/female)

Value: 1,410 mg/kg (BASF-Test)

Inhalation

No data available.

Dermal

Type of value: LD50

Species: rat (male/female)

Value: > 2,000 mg/kg

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Assessment other acute effects

Assessment of STOT single:

Apart from effects causing lethality, no specific target organ toxicity was observed in experimental studies.

Irritation / corrosion

Assessment of irritating effects: Not irritating to the skin. Eye contact causes irritation.

Skin

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Species: rabbit
Result: non-irritant
Method: Draize test

Eye

Species: rabbit
Result: Irritant.
Method: BASF-Test

Sensitization

Assessment of sensitization: Skin sensitizing effects were not observed in animal studies.

Guinea pig maximization test

Species: guinea pig
Result: Non-sensitizing.

Aspiration Hazard

not applicable

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: Repeated oral uptake of the substance did not cause substance-related effects.

Repeated ingestion of large amounts may lead to metabolic acidosis.

Genetic toxicity

Assessment of mutagenicity: In the majority of studies performed with microorganisms and in mammalian cell culture, a mutagenic effect was not found. A mutagenic effect was also not observed in in vivo tests.

Carcinogenicity

Assessment of carcinogenicity: In long-term studies in rats in which the substance was given by feed, a carcinogenic effect was not observed.

Teratogenicity

Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Symptoms of Exposure

Overexposure may cause: vomiting, lethargy, confusion, hyperventilation, nausea, headache

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish

LC50 (96 h) 42,91 mg/l Ammonium chloride, Oncorhynchus mykiss

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LC50 (96 h) 46,27 mg/l Ammonium chloride, *Prosopium williamsoni*

Aquatic invertebrates

EC50 (48 h) 98,5 mg/l Ammonium chloride, *Ceriodaphnia dubia* (static)

EC50 (48 h) 136,6 mg/l Ammonium chloride, *Daphnia magna* (static)

Aquatic plants

EC50 (5 d) 1,300 mg/l (growth rate), *Chlorella vulgaris* (static)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

EC50 (18 d) 2,700 mg/l, *Chlorella vulgaris* (static)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Chronic toxicity to fish

EC10 (30 d) 4,28 mg/l ammonium chloride, *Lepomis macrochirus* (Flow through.)

Chronic toxicity to aquatic invertebrates

EC10 (70 d) 2,52 mg/l ammonium chloride (semistatic)

Soil living organisms

Toxicity to soil dwelling organisms:

LC50 (14 d) 163 mg/kg, *Eisenia foetida* (artificial soil)

Toxicity to terrestrial plants

No observed effect concentration (84 d) 626 mg/l

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Other terrestrial non-mammals

Study scientifically not justified.

Microorganisms/Effect on activated sludge

Toxicity to microorganisms

OECD Guideline 209 aquatic

activated sludge, domestic/EC20 (0.5 h): approx. 850 mg/l

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

Inorganic product which cannot be eliminated from water by biological purification processes. Can be oxidized to nitrate, or be reduced to nitrogen, by microorganisms.

Assessment of stability in water

Study scientifically not justified.

Bioaccumulative potential

Assessment bioaccumulation potential

Accumulation in organisms is not to be expected.

Bioaccumulation potential

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Accumulation in organisms is not to be expected.

Mobility in soil

Assessment transport between environmental compartments
Study scientifically not justified.
Adsorption to solid soil phase is possible.

Additional information

Add. remarks environm. fate & pathway:
The product has not been tested. The statements on environmental fate and pathway have been derived from the properties of the individual components.

13. Disposal considerations

Waste disposal of substance:

Dispose of in accordance with national, state and local regulations.

14. Transport Information

Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

Further information

Specific national features of transport regulations must be observed. They are to be found in the shipping documents.

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

Food TSCA, US released / exempt

EPCRA 311/312 (Hazard categories): Acute;

CERCLA RQ
5000 LBS

CAS Number
12125-02-9

Chemical name
ammonium chloride

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Reportable Quantity for release: 5,000 lb

State regulations

<u>State RTK</u>	<u>CAS Number</u>	<u>Chemical name</u>
MA, NJ, PA	12125-02-9	ammonium chloride

NFPA Hazard codes:

Health : 2 Fire: 1 Reactivity: 0 Special:

HMIS III rating

Health: 2 Flammability: 1 Physical hazard: 0

Assessment of the hazard classes according to UN GHS criteria (most recent version):

Acute Tox.	4 (oral)	Acute toxicity
Aquatic Acute	3	Hazardous to the aquatic environment - acute
Eye Dam./Irrit.	2A	Serious eye damage/eye irritation

16. Other Information

SDS Prepared by:

BASF NA Product Regulations
SDS Prepared on: 2014/12/22

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