

Safety Data Sheet

Ammonium carbamate crystals

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Version: 2.1

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(30041205/SDS_GEN_US/EN)

1. Identification

Product identifier used on the label

Ammonium carbamate crystals

Recommended use of the chemical and restriction on use

Recommended use*: Chemical

Recommended use*: for industrial use only

Unsuitable for use: Not intended for sale to or use by the general public.

Raw material; propellant

* The "Recommended use" identified for this product is provided solely to comply with a 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

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300

BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Molecular formula: H(2)NCO(2)NH(4)

Chemical family: inorganic compounds

Synonyms: Carbamic Acid, Monoammonium Salt
Ammonium Carbamate

2. Hazards Identification

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

Classification of the product

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Acute Tox.	4 (oral)	Acute toxicity
Eye Dam./Irrit.	1	Serious eye damage/eye irritation
Aquatic Acute	3	Hazardous to the aquatic environment - acute

Label elements

Pictogram:



Signal Word:

Danger

Hazard Statement:

H318	Causes serious eye damage.
H302	Harmful if swallowed.
H402	Harmful to aquatic life.

Precautionary Statements (Prevention):

P280	Wear eye and face protection.
P273	Avoid release to the environment.
P270	Do not eat, drink or smoke when using this product.
P264	Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or physician.
P330	Rinse mouth

Precautionary Statements (Disposal):

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

3. Composition / Information on Ingredients

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

ammonium carbamate

CAS Number: 1111-78-0

Content (W/W): >= 75.0 - <= 100.0%

Synonym: No data available.

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4. First-Aid Measures

Description of first aid measures

General advice:

Remove contaminated clothing.

If inhaled:

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Seek medical attention.

If on skin:

Wash affected areas thoroughly with soap and water. If irritation develops, seek medical attention.

If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. If irritation develops, seek medical attention.

If swallowed:

Rinse mouth and then drink 200-300 ml of water. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: Eye irritation, respiratory disorders, Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

Information on: ammonium carbamate

Symptoms: Overexposure may cause: corneal injury, skin corrosion, severe pain, coughing, respiratory disorders, dyspnea, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps

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:
water spray, carbon dioxide, foam

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
ammonia, carbon dioxide,

The substances/groups of substances mentioned can be released in case of fire.

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Advice for fire-fighters

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.

Impact Sensitivity:

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

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Breathing protection required. Handle in accordance with good industrial hygiene and safety practice.

Environmental precautions

Prevent entry into drains and surface waters. Ensure compliance with local regulations before discharging into effluent treatment plants.

Methods and material for containment and cleaning up

For residues: Sweep/shovel up.
Dispose of absorbed material in accordance with regulations.

7. Handling and Storage

Precautions for safe handling

Avoid dust formation.

Protection against fire and explosion:

Store in a cool place. If heated the drums can burst due to pressure build-up.

Conditions for safe storage, including any incompatibilities

Segregate from nitrites and alkaline substances.

Do not store with: Sodium nitrate

Suitable materials for containers: High density polyethylene (HDPE), Low density polyethylene (LDPE), Stainless steel 1.4541, Stainless steel 1.4571

Further information on storage conditions: Store in unopened original containers in a cool and dry place.

Protect from temperatures above: 30 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

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:

Suitable respiratory protection for lower concentrations or short-term effect: Gas filter for gases/vapours of alkaline compounds such as ammonia, amines (e.g. EN 14387 Type K). Combination filter for gases/vapours of organic, inorganic, acid inorganic, alkaline compounds and toxic particles (e. g. EN 14387 Type ABEK-P3) Suitable respiratory protection for higher concentrations or long-term effect: Self-contained breathing apparatus.

Hand protection:

Suitable materials, rubber, chloroprene rubber (Neoprene), polyvinylchloride (Pylox), Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:

Tightly fitting safety goggles (chemical goggles).

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures:

Wear protective clothing as necessary to minimize contact. Avoid inhalation of dust. Wash soiled clothing immediately.

9. Physical and Chemical Properties

Form:	crystalline, powder	
Odour:	ammonia-like	
Odour threshold:	Not determined due to potential health hazard by inhalation.	
Colour:	white	
pH value:	10.0 (100 g/l, 20 °C)	
Melting point:	No data available.	(OECD Guideline 102)
Freezing point:	No data available.	
Boiling range:	No data available.	
Boiling point:	No data available.	
Flash point:	not applicable	
Flammability:	not highly flammable	(other)
Lower explosion limit:	For solids not relevant for classification and labelling.	
Upper explosion limit:	For solids not relevant for classification and labelling.	
Autoignition:	not applicable	
Density:	1.37 g/cm ³ (19.9 °C, 1,013 hPa)	(other)
Bulk density:	Literature data. 780 - 850 kg/m ³	
Partitioning coefficient n-octanol/water (log Pow):	The substance / product decomposes therefore not determined.	(other)
Self-ignition temperature:	not self-igniting	
	not self-igniting	(other)

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Thermal decomposition:	35 °C To avoid thermal decomposition, do not overheat.
Viscosity, dynamic:	not applicable
Solubility in water:	490 - 580 g/l (20 °C)
Solubility (quantitative):	approx. 423 g/kg (0 °C)
Molar mass:	78.07 g/mol
Evaporation rate:	negligible, Value can be approximated from Henry's Law Constant or vapor pressure.

10. Stability and Reactivity

Reactivity

Corrosion to metals:
No corrosive effect on metal.

Oxidizing properties:
Based on its structural properties the product is not classified as oxidizing. (other)

Minimum ignition energy:
1 bar, 25 °C, Grain size distribution: 63 µm (VDI 2263, sheet 1, 2.1.2)
The product is not capable of a dust explosion.

Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.
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Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

Exothermic reaction. Reacts with alkalis and nitrites. Reacts with nitrates. Incompatible with bases.

Conditions to avoid

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

Incompatible materials

bases, acids

Hazardous decomposition products

Decomposition products:
Hazardous decomposition products: ammonia, carbon dioxide

Thermal decomposition:
35 °C
To avoid thermal decomposition, do not overheat.

11. Toxicological information

Primary routes of exposure

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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. In animal studies the substance is virtually nontoxic after short-term inhalation. In animal studies the substance is 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

Value: > 681 mg/kg (OECD Guideline 401)

Inhalation

Type of value: LC50

Species: rat (male/female)

Value: 6.6 mg/l (OECD Guideline 403)

Exposure time: 4 h

Product not examined: Value is calculated from the data of the components.

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

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:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Irritation / corrosion

Assessment of irritating effects: May cause severe damage to the eyes. Not irritating to the skin.

Skin

Species: rabbit

Result: non-irritant

Method: OECD Guideline 404

Eye

Species: rabbit

Result: Risk of serious damage to eyes.

Method: OECD Guideline 405

Sensitization

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

Species: mouse

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Result: Non-sensitizing.
Method: similar to OECD guideline 429

Aspiration Hazard
not applicable

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: No substance-specific organotoxicity was observed after repeated administration to animals. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Genetic toxicity

Assessment of mutagenicity: Mutagenicity tests revealed no genotoxic potential. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Carcinogenicity

Assessment of carcinogenicity: Did not show carcinogenic effects in animal experiments. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Reproductive toxicity

Assessment of reproduction toxicity: Study scientifically not justified.

Teratogenicity

Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

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.

Toxicity to fish

LC50 (96 h) 37.0 mg/l, Pimephales promelas (EPA 72-1, static)

Aquatic invertebrates

EC50 (48 h) 63.7 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

Aquatic plants

EC50 (72 h) 129.13 mg/l (growth rate), Scenedesmus subspicatus (DIN 38412 Part 9, static)

Chronic toxicity to fish

Study scientifically not justified.

EC10 (28 d) 4.18 mg/l, Pimephales promelas (other, Flow through.)

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The product has not been tested. The statement has been derived from the properties of the hydrolysis products.

Chronic toxicity to aquatic invertebrates

EC10 (21 d) 4.81 mg/l, Daphnia magna (OECD Guideline 211, semistatic)

The product has not been tested. The statement has been derived from the properties of the hydrolysis products.

Assessment of terrestrial toxicity

No data available concerning terrestrial toxicity.
Study scientifically not justified.

Microorganisms/Effect on activated sludge

Toxicity to microorganisms

OECD Guideline 209 aerobic
activated sludge, domestic/EC20 (0.5 h): 1,000 mg/l

DIN 38412 Part 8 aquatic
bacterium/EC50 (17 h): 1,180 mg/l

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

Readily biodegradable (according to OECD criteria).

Elimination information

> 80 % CO₂ formation relative to the theoretical value (28 d) (OECD 301B; ISO 9439; 92/69/EEC, C.4-C) (aerobic, activated sludge, domestic) Readily biodegradable (according to OECD criteria).

Assessment of stability in water

In contact with water the substance will hydrolyse rapidly.

Bioaccumulative potential

Assessment bioaccumulation potential

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Bioaccumulation potential

Study scientifically not justified.

Mobility in soil

Assessment transport between environmental compartments

The substance will slowly evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is not expected.

Additional information

Other ecotoxicological advice:

Do not release untreated into natural waters. Decomposition to non-hazardous substances takes place in water.

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13. Disposal considerations

Waste disposal of substance:

Dispose of in accordance with national, state and local regulations. Do not discharge substance/product into sewer system.

Container disposal:

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

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

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

CERCLA RQ

5000 LBS

CAS Number

1111-78-0

Chemical name

ammonium carbamate

NFPA Hazard codes:

Health: 3 Fire: 0 Reactivity: 0 Special:

HMIS III rating

Health: 3 Flammability: 0 Physical hazard: 0

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

Aquatic Acute

3

Hazardous to the aquatic environment - acute

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Acute Tox.	4 (oral)	Acute toxicity
Eye Dam./Irrit.	1	Serious eye damage/eye irritation

16. Other Information

SDS Prepared by:

BASF NA Product Regulations

SDS Prepared on: 2022/10/20

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

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