

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Ammonium carbonate $\geq 30\%$ NH₃, p.a., ACS

article number: **CP98**
Version: **2.0 en**
Replaces version of: 2015-11-13
Version: (1)

date of compilation: 2015-11-13
Revision: 2019-12-09

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

1.1 Product identifier

| | |
|---------------------------------|--|
| Identification of the substance | Ammonium carbonate |
| Article number | CP98 |
| Registration number (REACH) | It is not required to list the identified uses because the substance is not subject to registration according to REACH (< 1 t/a) |
| EC number | 233-786-0 |
| CAS number | 10361-29-2 |

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

Identified uses: laboratory chemical
laboratory and analytical use

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
e-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet : Department Health, Safety and Environment

e-mail (competent person) : **sicherheit@carlroth.de**

1.4 Emergency telephone number

| Name | Street | Postal code/city | Telephone | Website |
|--|---------------|------------------|-------------|---|
| National Poisons Information Centre Beaumont Hospital | Beaumont Road | Dublin 9 | 01 809 2166 | https://www.poisons.ie/ |

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

| Classification acc. to GHS | | | |
|----------------------------|---------------------------|---------------------------|------------------|
| Section | Hazard class | Hazard class and category | Hazard statement |
| 3.10 | acute toxicity (oral) | (Acute Tox. 4) | H302 |
| 3.2 | skin corrosion/irritation | (Skin Irrit. 2) | H315 |

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| Classification acc. to GHS | | | |
|----------------------------|-----------------------------------|---------------------------|------------------|
| Section | Hazard class | Hazard class and category | Hazard statement |
| 3.3 | serious eye damage/eye irritation | (Eye Dam. 1) | H318 |

2.2 Label elements

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

Signal word **Danger**

Pictograms

GHS05, GHS07



Hazard statements

H302 Harmful if swallowed
H315 Causes skin irritation
H318 Causes serious eye damage

Precautionary statements

Precautionary statements - prevention

P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/eye protection.

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/doctor.

Hazardous ingredients for labelling:

Ammonium carbamate, Ammonium hydrogen carbonate

Labelling of packages where the contents do not exceed 125 ml

Signal word: **Danger**

Symbol(s)



H318 Causes serious eye damage.
P280 Wear protective gloves/eye protection.
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/doctor.
contains: Ammonium carbamate, Ammonium hydrogen carbonate

2.3 Other hazards

There is no additional information.

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SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description of the mixture

Composition/information on ingredients.

| Name of substance | Identifier | wt% | Classification acc. to 1272/2008/EC | Pictograms |
|-----------------------------|---|-----|--|------------|
| Ammonium hydrogen carbonate | CAS No 1066-33-7 EC No 213-911-5 REACH Reg. No 01-2119486970-26- xxxx | 50 | Acute Tox. 4 / H302 | |
| Ammonium carbamate | CAS No 1111-78-0 EC No 214-185-2 REACH Reg. No 01-2119493982-22- xxxx | 50 | Acute Tox. 4 / H302 Skin Irrit. 2 / H315 Eye Dam. 1 / H318 | |

Remarks

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. In case of skin irritation, consult a physician.

Following eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Following ingestion

Rinse mouth immediately and drink plenty of water. Call a doctor.

4.2 Most important symptoms and effects, both acute and delayed

Irritation, Nausea, Diarrhoea, Vomiting, Spasms, Blood pressure drop, Risk of serious damage to eyes

4.3 Indication of any immediate medical attention and special treatment needed

none

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SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings
water spray, foam, dry extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Non-combustible.

Hazardous combustion products

In case of fire may be liberated: nitrogen oxides (NO_x), carbon monoxide (CO), carbon dioxide (CO₂),
May produce toxic fumes of carbon monoxide if burning.

5.3 Advice for firefighters

Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Do not breathe dust. Avoid contact with skin and eyes.

6.2 Environmental precautions

Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Take up mechanically. Control of dust.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

When not in use, keep containers tightly closed.

• Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

Advice on general occupational hygiene

Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a dry place.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice

• Ventilation requirements

Use local and general ventilation.

• Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

| Country | Name of agent | Notation | Identifier | TWA [mg/m ³] | STEL [mg/m ³] | Source |
|---------|--------------------|----------|------------|--------------------------|---------------------------|----------------------|
| IE | dusts non-specific | i | OELV | 10 | | S.I. No. 619 of 2001 |
| IE | dusts non-specific | r | OELV | 4 | | S.I. No. 619 of 2001 |

Notation

i Inhalable fraction

r Respirable fraction

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Relevant DNELs/DMELs/PNECs and other threshold levels

• human health values

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| Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
|----------|-------------------------|------------------------------------|-------------------|----------------------------|
| DNEL | 369 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| DNEL | 2.214 mg/m ³ | human, inhalatory | worker (industry) | acute - systemic effects |
| DNEL | 4,19 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |
| DNEL | 25,12 mg/kg bw/day | human, dermal | worker (industry) | acute - systemic effects |

• relevant DNELs of components of the mixture

| Name of substance | CAS No | Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
|-----------------------------|-----------|----------|-------------------------|------------------------------------|-------------------|----------------------------|
| Ammonium hydrogen carbonate | 1066-33-7 | DNEL | 62,5 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| Ammonium hydrogen carbonate | 1066-33-7 | DNEL | 160,7 mg/m ³ | human, inhalatory | worker (industry) | acute - systemic effects |
| Ammonium hydrogen carbonate | 1066-33-7 | DNEL | 62,5 mg/m ³ | human, inhalatory | worker (industry) | chronic - local effects |
| Ammonium hydrogen carbonate | 1066-33-7 | DNEL | 160,7 mg/m ³ | human, inhalatory | worker (industry) | acute - local effects |
| Ammonium hydrogen carbonate | 1066-33-7 | DNEL | 57 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |
| Ammonium carbamate | 1111-78-0 | DNEL | 49,8 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| Ammonium carbamate | 1111-78-0 | DNEL | 14,1 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |

• environmental values

| Endpoint | Threshold level | Environmental compartment |
|----------|-----------------|---------------------------|
| PNEC | 2,38 mg/l | freshwater |
| PNEC | 0,238 mg/l | marine water |
| PNEC | 2,5 mg/kg | freshwater sediment |
| PNEC | 0,25 mg/kg | marine sediment |
| PNEC | 0,7 mg/kg | soil |

• relevant PNECs of components of the mixture

| Name of substance | CAS No | Endpoint | Threshold level | Environmental compartment |
|-----------------------------|-----------|----------|-----------------|------------------------------|
| Ammonium hydrogen carbonate | 1066-33-7 | PNEC | 0,37 mg/l | freshwater |
| Ammonium hydrogen carbonate | 1066-33-7 | PNEC | 0,037 mg/l | marine water |
| Ammonium hydrogen carbonate | 1066-33-7 | PNEC | 1.347 mg/l | sewage treatment plant (STP) |
| Ammonium hydrogen carbonate | 1066-33-7 | PNEC | 0,133 mg/kg | freshwater sediment |

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| Name of substance | CAS No | Endpoint | Threshold level | Environmental compartment |
|-----------------------------|-----------|----------|-----------------|------------------------------|
| Ammonium hydrogen carbonate | 1066-33-7 | PNEC | 0,013 mg/kg | marine sediment |
| Ammonium hydrogen carbonate | 1066-33-7 | PNEC | 74,9 mg/kg | soil |
| Ammonium carbamate | 1111-78-0 | PNEC | 0,37 mg/l | water |
| Ammonium carbamate | 1111-78-0 | PNEC | 0,418 mg/l | freshwater |
| Ammonium carbamate | 1111-78-0 | PNEC | 0,042 mg/l | marine water |
| Ammonium carbamate | 1111-78-0 | PNEC | 10 mg/l | sewage treatment plant (STP) |
| Ammonium carbamate | 1111-78-0 | PNEC | 1,89 mg/kg | freshwater sediment |
| Ammonium carbamate | 1111-78-0 | PNEC | 0,189 mg/kg | marine sediment |
| Ammonium carbamate | 1111-78-0 | PNEC | 0,133 mg/kg | soil |

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggles with side protection.

Skin protection



• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

• type of material

NBR (Nitrile rubber)

• material thickness

>0,11 mm

• breakthrough times of the glove material

>480 minutes (permeation: level 6)

• other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

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Respiratory protection



Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

| | |
|-----------------|---------------------|
| Physical state | solid (crystalline) |
| Colour | colourless |
| Odour | like ammonia |
| Odour threshold | No data available |

Other physical and chemical parameters

| | |
|---|--|
| pH (value) | 9 – 10 (water: 100 g/l, 20 °C) |
| Melting point/freezing point | Information on this property is not available. |
| Initial boiling point and boiling range | This information is not available. |
| Flash point | not applicable |
| Evaporation rate | no data available |
| Flammability (solid, gas) | No information available |
| <u>Explosive limits</u> | |
| • lower explosion limit (LEL) | this information is not available |
| • upper explosion limit (UEL) | this information is not available |
| Explosion limits of dust clouds | these information are not available |
| Vapour pressure | >60 hPa at 20 °C |
| Density | This information is not available. |
| Vapour density | This information is not available. |
| Relative density | Information on this property is not available. |
| <u>Solubility(ies)</u> | |
| Water solubility | >300 g/l at 20 °C |
| <u>Partition coefficient</u> | |
| n-octanol/water (log KOW) | -2,4 |
| Auto-ignition temperature | Information on this property is not available. |
| Decomposition temperature | >57 °C |
| Viscosity | not relevant (solid matter) |

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| | |
|----------------------|--------------------------------------|
| Explosive properties | Shall not be classified as explosive |
| Oxidising properties | none |

9.2 Other information

There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: Alkali (lye), Strong acid, Nitrites, Nitrate, Hypochlorite, Hydrogen peroxide,
=> Explosive properties

10.4 Conditions to avoid

Keep away from heat. Decomposition takes place from temperatures above: >57 °C.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

| Exposure route | Endpoint | Value | Species | Source |
|----------------|----------|--------------|---------|--------|
| dermal | LD50 | >2.000 mg/kg | rat | ECHA |
| oral | LD50 | 1.800 mg/kg | rat | ECHA |

• Acute toxicity estimate (ATE)

oral 1.800 mg/kg

• Acute toxicity of components of the mixture

| Name of substance | CAS No | Exposure route | ATE |
|-----------------------------|-----------|----------------|-------------|
| Ammonium hydrogen carbonate | 1066-33-7 | oral | 1.576 mg/kg |
| Ammonium carbamate | 1111-78-0 | oral | 681 mg/kg |

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

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Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

• Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

• Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

diarrhoea, vomiting, nausea

• If in eyes

Causes serious eye damage, risk of blindness

• If inhaled

Inhalation of dust may cause irritation of the respiratory system

• If on skin

causes skin irritation

Other information

Other adverse effects: Spasms, Blood pressure drop, Circulatory collapse, Narcosis

SECTION 12: Ecological information

12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

| Endpoint | Value | Species | Source | Exposure time |
|----------|------------|---------|--------|---------------|
| ErC50 | 252,9 mg/l | algae | ECHA | 72 h |
| EC50 | 122,5 mg/l | algae | ECHA | 72 h |

Aquatic toxicity (acute) of components of the mixture

| Name of substance | CAS No | Endpoint | Value | Species | Exposure time |
|-----------------------------|-----------|----------|------------|-----------------------|---------------|
| Ammonium hydrogen carbonate | 1066-33-7 | LC50 | 63,4 mg/l | fish | 96 h |
| Ammonium hydrogen carbonate | 1066-33-7 | EC50 | 145,6 mg/l | aquatic invertebrates | 48 h |
| Ammonium carbonate | 1111-78-0 | LC50 | 37 mg/l | fish | 96 h |
| Ammonium carbonate | 1111-78-0 | EC50 | 63,7 mg/l | aquatic invertebrates | 48 h |
| Ammonium carbonate | 1111-78-0 | ErC50 | 129,1 mg/l | algae | 72 h |

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Aquatic toxicity (chronic)

| Endpoint | Value | Species | Source | Exposure time |
|----------|----------|----------------|--------|---------------|
| EC50 | 530 mg/l | microorganisms | ECHA | 3 h |

Aquatic toxicity (chronic) of components of the mixture

| Name of substance | CAS No | Endpoint | Value | Species | Exposure time |
|-----------------------------|-----------|----------|------------|---------|---------------|
| Ammonium hydrogen carbonate | 1066-33-7 | ErC50 | 1.921 mg/l | algae | 5 d |
| Ammonium hydrogen carbonate | 1066-33-7 | EC50 | 3.231 mg/l | algae | 18 d |

12.2 Process of degradability

The methods for determining the biological degradability are not applicable to inorganic substances.
Theoretical Oxygen Demand with nitrification: Theoretical Oxygen Demand: 0 mg/mg
Theoretical Carbon Dioxide:

Degradability of components of the mixture

| Name of substance | CAS No | Process | Degradation rate | Time |
|--------------------|-----------|---------------------------|------------------|------|
| Ammonium carbamate | 1111-78-0 | carbon dioxide generation | >80 % | 28 d |

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW) -2,4

Bioaccumulative potential of components of the mixture

| Name of substance | CAS No | Log KOW |
|-----------------------------|-----------|---------------|
| Ammonium hydrogen carbonate | 1066-33-7 | -2,4 (25 °C) |
| Ammonium carbamate | 1111-78-0 | -0,47 (25 °C) |

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Data are not available.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

- | | | |
|-------------|---|--|
| 14.1 | UN number | (not subject to transport regulations) |
| 14.2 | UN proper shipping name | not relevant |
| 14.3 | Transport hazard class(es) | not relevant |
| | Class | - |
| 14.4 | Packing group | not relevant not assigned to a packing group |
| 14.5 | Environmental hazards | none (non-environmentally hazardous acc. to the dangerous goods regulations) |
| 14.6 | Special precautions for user | |
| | | There is no additional information. |
| 14.7 | Transport in bulk according to Annex II of MARPOL and the IBC Code | |
| | | The cargo is not intended to be carried in bulk. |
| 14.8 | Information for each of the UN Model Regulations | |
| | • Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) | |
| | | Not subject to ADR, RID and ADN. |
| | • International Maritime Dangerous Goods Code (IMDG) | |
| | | Not subject to IMDG. |
| | • International Civil Aviation Organization (ICAO-IATA/DGR) | |
| | | Not subject to ICAO-IATA. |

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SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

- **Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)**

None of the ingredients are listed.

- **Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)**

None of the ingredients are listed.

- **Regulation 850/2004/EC on persistent organic pollutants (POP)**

None of the ingredients are listed.

- **Restrictions according to REACH, Annex XVII**

None of the ingredients are listed.

| Name of substance | CAS No | Wt% | Type of registration | Conditions of restriction | No |
|--------------------|--------|-----|-------------------------|---------------------------|----|
| Ammonium carbonate | | 100 | 2016/1017/EC annex XVII | R65 | 65 |

Legend

R65

1. Shall not be placed on the market, or used, in cellulose insulation mixtures or cellulose insulation articles after 14 July 2018 unless the emission of ammonia from those mixtures or articles results in a concentration of less than 3 ppm by volume (2,12 mg/m³) under the test conditions specified in paragraph 4.
A supplier of a cellulose insulation mixture containing inorganic ammonium salts shall inform the recipient or consumer of the maximum permissible loading rate of the cellulose insulation mixture, expressed in thickness and density.
A downstream user of a cellulose insulation mixture containing inorganic ammonium salts shall ensure that the maximum permissible loading rate communicated by the supplier is not exceeded.
2. By way of derogation, paragraph 1 shall not apply to placing on the market of cellulose insulation mixtures intended to be used solely for the production of cellulose insulation articles, or to the use of those mixtures in the production of cellulose insulation articles.
3. In the case of a Member State that, on 14 July 2016, has national provisional measures in place that have been authorised by the Commission pursuant to Article 129(2)(a), the provisions of paragraphs 1 and 2 shall apply from that date.
4. Compliance with the emission limit specified in the first subparagraph of paragraph 1 shall be demonstrated in accordance with Technical Specification CEN/TS 16516, adapted as follows:
 - (a) the duration of the test shall be at least 14 days instead of 28 days;
 - (b) the ammonia gas emission shall be measured at least once per day throughout the test;
 - (c) the emission limit shall not be reached or exceeded in any measurement taken during the test;
 - (d) the relative humidity shall be 90 % instead of 50 %;
 - (e) an appropriate method to measure the ammonia gas emission shall be used;
 - (f) the loading rate, expressed in thickness and density, shall be recorded during the sampling of the cellulose insulation mixtures or articles to be tested.

- **Restrictions according to REACH, Title VIII**

None.

- **List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list**

none of the ingredients are listed

- **Seveso Directive**

| 2012/18/EU (Seveso III) | | | |
|-------------------------|---------------------------------------|---|-------|
| No | Dangerous substance/hazard categories | Qualifying quantity (tonnes) for the application of lower and upper-tier requirements | Notes |
| | not assigned | | |

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• Directive 75/324/EEC relating to aerosol dispensers

Filling batch

Deco-Paint Directive (2004/42/EC)

| | |
|-------------|-----|
| VOC content | 0 % |
|-------------|-----|

Directive on industrial emissions (VOCs, 2010/75/EU)

| | |
|-------------|-----|
| VOC content | 0 % |
|-------------|-----|

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II

None of the ingredients are listed.

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

None of the ingredients are listed.

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)

None of the ingredients are listed.

Regulation 98/2013/EU on the marketing and use of explosives precursors

none of the ingredients are listed

Regulation 111/2005/EC laying down rules for the monitoring of trade between the Community and third countries in drug precursors

none of the ingredients are listed

National inventories

| Country | National inventories | Status |
|---------|----------------------|--------------------------------|
| AU | AICS | all ingredients are listed |
| CA | DSL | all ingredients are listed |
| CN | IECSC | all ingredients are listed |
| EU | ECSI | all ingredients are listed |
| EU | REACH Reg. | all ingredients are listed |
| JP | CSCL-ENCS | all ingredients are listed |
| JP | ISHA-ENCS | not all ingredients are listed |
| KR | KECI | all ingredients are listed |
| MX | INSQ | all ingredients are listed |
| NZ | NZIoC | all ingredients are listed |
| PH | PICCS | all ingredients are listed |
| TR | CICR | not all ingredients are listed |
| TW | TCSI | all ingredients are listed |
| US | TSCA | all ingredients are listed |

Legend

| | |
|-----------|--|
| AICS | Australian Inventory of Chemical Substances |
| CICR | Chemical Inventory and Control Regulation |
| CSCL-ENCS | List of Existing and New Chemical Substances (CSCL-ENCS) |
| DSL | Domestic Substances List (DSL) |
| ECSI | EC Substance Inventory (EINECS, ELINCS, NLP) |

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Legend

| | |
|------------|---|
| IECSC | Inventory of Existing Chemical Substances Produced or Imported in China |
| INSQ | National Inventory of Chemical Substances |
| ISHA-ENCS | Inventory of Existing and New Chemical Substances (ISHA-ENCS) |
| KECI | Korea Existing Chemicals Inventory |
| NZIoC | New Zealand Inventory of Chemicals |
| PICCS | Philippine Inventory of Chemicals and Chemical Substances |
| REACH Reg. | REACH registered substances |
| TCSI | Taiwan Chemical Substance Inventory |
| TSCA | Toxic Substance Control Act |

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|--|--|-----------------|
| 1.1 | Registration number (REACH): not relevant (mixture) | Registration number (REACH): It is not required to list the identified uses because the substance is not subject to registration according to REACH (< 1 t/a) | yes |
| 1.1 | | EC number: 233-786-0 | yes |
| 1.1 | | CAS number: 10361-29-2 | yes |
| 2.1 | Remarks: For full text of Hazard- and EU Hazard-statements: see SECTION 16. | | yes |
| 2.2 | | Pictograms: change in the listing (table) | yes |
| 2.2 | | Precautionary statements - prevention: change in the listing (table) | yes |
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 8.1 | | • human health values | yes |
| 8.1 | | • human health values: change in the listing (table) | yes |
| 8.1 | | • relevant DNELs of components of the mixture: change in the listing (table) | yes |
| 8.1 | | • environmental values | yes |
| 8.1 | | • environmental values: change in the listing (table) | yes |
| 8.1 | | • relevant PNECs of components of the mixture: change in the listing (table) | yes |
| 14.4 | Packing group: not relevant | Packing group: not relevant not assigned to a packing group | yes |
| 14.8 | | • International Civil Aviation Organization (ICAO-IATA/DGR): Not subject to ICAO-IATA. | yes |

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Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|------------|---|
| Acute Tox. | acute toxicity |
| ADN | Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways) |
| ADR | Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road) |
| ATE | Acute Toxicity Estimate |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures |
| CMR | Carcinogenic, Mutagenic or toxic for Reproduction |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DMEL | Derived Minimal Effect Level |
| DNEL | Derived No-Effect Level |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| ErC50 | ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control |
| Eye Dam. | seriously damaging to the eye |
| Eye Irrit. | irritant to the eye |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods Code |
| index No | the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval |
| log KOW | n-octanol/water |
| MARPOL | International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant") |
| NLP | No-Longer Polymer |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |

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| Abbr. | Descriptions of used abbreviations |
|----------------------|---|
| S.I. No. 619 of 2001 | Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 |
| Skin Corr. | corrosive to skin |
| Skin Irrit. | irritant to skin |
| STEL | short-term exposure limit |
| SVHC | Substance of Very High Concern |
| TWA | time-weighted average |
| VOC | Volatile Organic Compounds |
| vPvB | very Persistent and very Bioaccumulative |

Key literature references and sources for data

- Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)
- Dangerous Goods Regulations (DGR) for the air transport (IATA)
- International Maritime Dangerous Goods Code (IMDG)

List of relevant phrases (code and full text as stated in chapter 2 and 3)

| Code | Text |
|------|---------------------------|
| H302 | harmful if swallowed |
| H315 | causes skin irritation |
| H318 | causes serious eye damage |

Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.