

Urea

Version 3.1

Revision Date: 06.11.2018

Date of last issue: 23.04.2018

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

1.1 Product identifier

Trade name : Urea technical, UREA 46N, Urea uncoated, Urea Microprills

REACH Registration Number : 01-2119463277-33-0000, 01-2119463277-33-0003, 01-2119463277-33-0006, 01-2119463277-33-XXXX

Substance name : Urea

EC-No. : 200-315-5

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

Use of the Substance/Mixture : Anti-freezing agents, Fertilizers, Use as an intermediate, pH-regulating agents

1.3 Supplier's details

E-mail address : product.safety@borealisgroup.com

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

2.3 Other hazards

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.1 Substances

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Chemical nature : Substance

Chemical name	CAS-No. EC-No.	Concentration (% w/w)
carbonyldiamide	57-13-6 200-315-5	>= 98

Remarks : No hazardous ingredients

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : No specific instructions needed.
- If inhaled : Move to fresh air.
If symptoms persist, call a physician.
- In case of skin contact : Wash off with soap and plenty of water.
Take off contaminated clothing and wash before reuse.
If skin irritation persists, call a physician.
- In case of eye contact : Rinse cautiously with water for several minutes.
- If swallowed : Rinse mouth with water.
Do NOT induce vomiting.
If conscious, drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Inhalation:
Cough
Shortness of breath
Sore throat
- Skin contact:
Redness
- Eye contact:
Redness
- Ingestion:
Convulsions
Headache
Nausea
Vomiting

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4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO₂)
Water mist
Alcohol-resistant foam

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : The product itself does not burn.
Burning produces irritant fumes.

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.

Further information : Standard procedure for chemical fires.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Material can create slippery conditions.
Use non-slip safety shoes in areas where spills or leaks can occur.
Avoid contact with skin, eyes and clothing.
Avoid dust formation.
Avoid breathing dust.
Ensure adequate ventilation, especially in confined areas.
Sweep up to prevent slipping hazard.
Avoid dust formation.

6.2 Environmental precautions

Prevent product from entering drains.

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6.3 Methods and material for containment and cleaning up

Sweep up or vacuum up spillage and collect in suitable container for disposal.
After cleaning, flush away traces with water.

6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid dust formation.

Hygiene measures : Keep away from food and drink. When using do not eat, drink or smoke. Wash hands before breaks and at the end of workday. Shower or bathe at the end of working. Take off immediately all contaminated clothing. Keep working clothes separately.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep in a dry place. Keep away from heat.

Advice on common storage : Keep away from incompatible materials.
See chapter 10.

7.3 Specific end use(s)

Specific use(s) : Consult the technical guidelines for the use of this substance/mixture.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Urea	Workers	Skin contact	Acute systemic effects	580 mg/kg bw/d
	Workers	Inhalation	Acute systemic effects	292 mg/m3
	Workers	Skin contact	Long-term systemic effects	580 mg/kg bw/d

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	Workers	Inhalation	Long-term systemic effects	292 mg/m ³
	Consumers	Skin contact	Acute systemic effects	580 mg/kg bw/d
	Consumers	Inhalation	Acute systemic effects	125 mg/m ³
	Consumers	Ingestion	Acute systemic effects	42 mg/kg bw/d
	Consumers	Skin contact	Long-term systemic effects	580 mg/kg bw/d
	Consumers	Inhalation	Long-term systemic effects	125 mg/m ³
	Consumers	Ingestion	Long-term systemic effects	42 mg/kg bw/d

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Urea	Fresh water	0,47 mg/l

8.2 Exposure controls

Engineering measures

Avoid dust formation.
 Provide adequate ventilation.

Personal protective equipment

Eye protection : Safety goggles

Hand protection
 Remarks : Not applicable

Skin and body protection : Lightweight protective clothing

Respiratory protection : Dust safety masks are recommended when the dust concentration is more than 10 mg/m³.

Environmental exposure controls

General advice : Prevent product from entering drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : prills

Colour : white

Product safety information sheet
according to Regulation (EC) No. 1907/2006

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Odour	: ammoniacal
pH	: 9,2 - 9,5, Concentration: 100 g/l (20 °C)
Melting point	: ca. 134 °C
Flash point	: Not applicable
Flammability (solid, gas)	: The product is not flammable.
Relative density	: 1,33
Density	: 1,335 g/cm ³ (20 °C)
Bulk density	: 700 - 800 kg/m ³ (20 °C)
Solubility(ies)	
Water solubility	: 624 g/l very soluble (20 °C)
Solubility in other solvents	: very soluble Solvent: Acetone
	soluble Solvent: Glycerol
	soluble Solvent: Ethanol
	insoluble Solvent: Chloroform
	insoluble Solvent: Ether
	insoluble Solvent: Xylene

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Partition coefficient: n-
octanol/water : log Pow: -1,73 (20 °C)

Decomposition temperature : > 130 °C
Ammonia gas may be liberated at high temperatures.

Viscosity
Viscosity, dynamic : Not applicable

9.2 Other information

Molecular weight : 60,06 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable at normal ambient temperature and pressure.

10.2 Chemical stability

Decomposes on heating.

10.3 Possibility of hazardous reactions

Hazardous reactions : Potential for exothermic hazard

10.4 Conditions to avoid

Conditions to avoid : Mixing solid urea with solid ammonium nitrate, as they can produce a slurry.

10.5 Incompatible materials

Materials to avoid : Reacts violently with:
Chlorine
Sodium nitrate
Phosphorus pentachloride
Oxidizing agents
sodium hypochlorite

10.6 Hazardous decomposition products

Ammonia

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat): 14.300 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: study scientifically unjustified

Skin corrosion/irritation

Product:

Species: Rabbit
Method: OECD Test Guideline 404
No skin irritation

Serious eye damage/eye irritation

Product:

Species: Rabbit
Method: OECD Test Guideline 405
No eye irritation

Respiratory or skin sensitisation

Product:

No known effect.

Germ cell mutagenicity

Product:

Genotoxicity in vitro : Test Type: Ames test
Result: negative

Germ cell mutagenicity-
Assessment : Not mutagenic in Ames Test

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Carcinogenicity

Product:

Species: Rat
Application Route: Oral
Activity duration: 365 d
NOAEL: NOAEL: 2.250 mg/kg bw/d
Method: NCI screening study

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

Reproductive toxicity

Product:

Effects on fertility : Species: Rat
Dose: 500 mg/kg
Application Route: Oral

Remarks: Lowest observed adverse effect level
Based on available data, the classification criteria are not met.

Product:

Species: Rat
NOAEL: 2.250 mg/kg
Application Route: Oral
Exposure time: 365 d
Method: NCI screening study
Remarks: Health injuries are not known or expected under normal use.

Further information

Product:

Remarks: According to our experience and to the information provided to us, the product does not have any harmful effects if it is used and handled as specified.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): > 6.810 mg/l
Exposure time: 96 h

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Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10.000 mg/l
Exposure time: 24 h
Test Type: static test
Remarks: Fresh water

Toxicity to algae : NOEC (Microcystis aeruginosa): 47 mg/l
Exposure time: 192 h
Test Type: Cell multiplication inhibition test
Remarks: Fresh water

Ecotoxicology Assessment Long-term (chronic) aquatic hazard : This product has no known ecotoxicological effects.

12.2 Persistence and degradability

Product:

Biodegradability : Test Type: activated sludge
Water
Result: Readily biodegradable.
Biodegradation: 96 %
Exposure time: 16 d
Kinetic:
3 h: 3 %
7 h: 52 %
10 d: 60 %
14 d: 85 %
16 d: 96 %
Method: OECD Test Guideline 302B

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Bioaccumulation not expected: Partition coefficient (n-octanol/water) $\log P_{ow} < 3$.

12.4 Mobility in soil

Product:

Distribution among environmental compartments : Adsorption/Soil
Medium: Soil
Koc: 0,037 - 0,064
Remarks: Adsorbs on soil.

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12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB)..

12.6 Other adverse effects

Product:

Additional ecological information : Remarks: The product is not considered hazardous for the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of wastes in an approved waste disposal facility.
Contact manufacturer.
Contact the proper local authorities.

European waste code:
06 10: wastes from the MFSU of nitrogen chemicals, nitrogen chemical processes and fertiliser manufacture

Contaminated packaging : In accordance with local and national regulations.

SECTION 14: Transport information

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

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14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Remarks : Not dangerous goods in the meaning of ADR/RID, ADN, IMDG-Code, ICAO/IATA-DGR

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Other regulations : No data available

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance.

SECTION 16: Other information

Further information

Other information : Issued in accordance with Article 32 of Regulation (EC) No 1907/2006, and its amendments.
Changes since the last version are highlighted in the margin.
This version replaces all previous versions.

Issuer : Borealis, Group Product Stewardship / Mikaela Eriksson.

Sources of key data used to compile the Safety Data Sheet : Chemical Safety Report, Urea. FARM REACH Consortium, 2017
International Chemical Safety Card, Urea, 1997
(http://www.ilo.org/dyn/icsc/showcard.display?p_lang=en&p_card_id=0595)

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