

**Safety Data Sheet**  
**According to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation**  
**(EU) 2020/878**

Revision Number: P-5-EN

Revision Date: 11-09-2021

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**1.1. Product identifier**

Product form: Substance  
Trade name: Urea  
Chemical name: Carbamide, Carbonyldiamide, Urea microprills  
CAS number: 57-13-6  
EC number: 200-315-5  
Registration number under REACH Regulation: 01-2119463277-33-0020

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

1.2.1. Relevant identified uses

Industrial/Professional use spec : Industrial  
For professional use only  
Use of the substance/mixture : Fertilizer, Food and animal feeding stuff, Adhesives, Sealants.  
SCR reduction / AdBlue AUS 32.

1.2.2. Uses advised against: No.

**1.3. Details of the supplier of the safety data sheet**

**1.4. Emergency telephone number**

**SECTION 2. HAZARDS IDENTIFICATION**

**2.1. Classification of the substance or mixture**

**Classification according to REGULATION (EC) No 1272/2008 on classification, labelling and packaging (CLP)**

Not classified.

**Adverse physicochemical, human health and environmental effects**

No additional information available.

**2.2. Label Elements**

**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

No labelling applicable.

**2.3. Other hazards**

PBT/vPvB: not relevant (inorganic).

This substance is not 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.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### **3.1 Substance:**

Substance name: Urea

CAS number: 57-13-6

EC number: 200-315-5

CAS number	EC number	Name	Concentration	Classification according to Regulation (EC) No 1272/2008	Specific concentration limits/M-Factor	Registration number under REACH Regulation
57-13-6	200-315-5	Urea	> 98.0-≤100.0 w/w	Not classified	--	01-2119463277-33-0020
108-19-0	203-559-0	Biuret	> 0.0-≤1.5 w/w	Not classified		

### **3.2 Mixture:**

Not applicable

## SECTION 4. FIRST AID MEASURES

### **4.1. Description of first aid measures**

First-aid measures general:

Pay attention to self-protection. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation:

Allow affected person to breathe fresh air. Allow the victim to rest. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact:

Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Get medical advice/attention if you feel unwell.

First-aid measures after eye contact:

In case of eye contact, immediately rinse with clean water for 10-15 minutes. Remove any contact lenses. Obtain medical attention if pain, blinking, or redness persists.

First-aid measures after ingestion:

Rinse mouth. Do NOT induce vomiting. Give activated carbon, to reduce the resorption in the gastro-enteric tract. Obtain emergency medical attention.

#### **4.2 Most important symptoms and effects, both acute and delayed**

Symptoms/effects:  
Respiratory difficulties. Cyanosis (blue coloured blood). Coughing. Convulsions.

#### **4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

### **SECTION 5. FIRE-FIGHTING MEASURES**

#### **5.1 Extinguishing media**

Suitable extinguishing media:  
Water spray. Foam. Dry powder.

Unsuitable extinguishing media:  
No data available.

#### **5.2 Special hazards arising from the substance or mixture**

Hazardous decomposition products in case of fire:  
Nitrogen oxides (NO<sub>x</sub>). Ammonia. Carbon dioxide

Reactivity in case of fire:  
Reacts with (nitric acid), formation of urea-nitrate (explosive).

#### **5.3 Advice for firefighters**

Firefighting instructions:  
Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.  
Prevent firefighting water from entering the environment.

Protective equipment for firefighters:  
Wear a self-contained breathing apparatus and chemical protective clothing.

Other information:  
No data available

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### **6.1. Personal precautions, protective equipment, and emergency procedures**

General measures:

See protective measures under sections 7 and 8.

6.1.1 For non-emergency personnel

Protective equipment :

Wear personal protection equipment.

Emergency procedures :

Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment :

Equip cleanup crew with proper protection.

Emergency procedures :

Ventilate area.

### **6.2. Environmental precautions**

Do not empty into drains or the aquatic environment.

### **6.3. Methods and material for containment and cleaning up**

Methods for cleaning up:

Wash with plenty of water. Remove mechanically, placing in appropriate containers for disposal. Provide adequate ventilation.

### **6.4. Reference to other sections**

For further information refer to :

Section 7 : "Handling and Storage"

Section 8 : "Exposure Controls/Personal Protection".

Section 13: "Disposal Considerations".

## SECTION 7. HANDLING AND STORAGE

### **7.1. Precautions for safe handling**

Precautions for safe handling:  
Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and when leaving work.  
Provide good ventilation in process area to prevent formation of vapor.  
Avoid dust formation.

### **7.2. Conditions for safe storage, including any incompatibilities**

Storage conditions:  
Store in a cool dry place. Keep container closed when not in use.

Incompatible materials:  
Strong oxidising agents (hypochlorites, nitric acid, sodium nitrite, etc.).

### **7.3. Specific end use(s)**

No data available.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### **8.1. Control parameters**

8.1.1. National occupational exposure and biological limit values.  
No additional information available.

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

DNEL/DMEL: Worker					
Short term (acute)	Systemic effects	Skin contact	580	mg/kg bw/day	Developmental toxicity/teratogenicity
		Inhalation	292	mg/m <sup>3</sup>	Developmental toxicity/teratogenicity
	Local effects	Skin contact	--	mg/cm <sup>2</sup>	--
		Inhalation	--	mg/m <sup>3</sup>	--
Long term (repeated)	Systemic effects	Skin contact	580	mg/kg bw/day	Developmental toxicity/teratogenicity
		Inhalation	292	mg/m <sup>3</sup>	Developmental toxicity/teratogenicity
	Local effects	Skin contact	--	mg/cm <sup>2</sup>	--
		Inhalation	--	mg/m <sup>3</sup>	--

DNEL/DMEL: Consumer					
Short term (acute)	Systemic effects	Skin contact	580	mg/kg bw/day	Developmental toxicity/teratogenicity
		Inhalation	125	mg/m <sup>3</sup>	Developmental toxicity/teratogenicity
		Ingestion	42	mg/kg bw/day	Developmental toxicity/teratogenicity
	Local effects	Skin contact	--	mg/cm <sup>2</sup>	--
		Inhalation	--	mg/m <sup>3</sup>	--
Long term (repeated)	Systemic effects	Skin contact	580	mg/kg bw/day	Developmental toxicity/teratogenicity
		Inhalation	125	mg/m <sup>3</sup>	Developmental toxicity/teratogenicity
		Ingestion	42	mg/kg bw/day	Developmental toxicity/teratogenicity
	Local effects	Skin contact	--	mg/cm <sup>2</sup>	--
		Inhalation	--	mg/m <sup>3</sup>	--

PNEC			
Freshwater	0.047	mg/l	Extrapolation method: assessment factor
Marine water	0.047	mg/l	--
Intermittent releases	--	mg/l	--
Sediment	--	mg/kg	--
Sediment-marine	--	mg/kg	--
Soil	--	mg/kg	--
Air	--	mg/m <sup>3</sup>	--
Sewage treatment plant	--	mg/l	--
Secondary poisoning	--	mg/kg	--

#### 8.1.5. Control banding

No additional information available.

## **8.2. Exposure controls**

### **8.2.1. Appropriate engineering controls**

Ensure that the equipment is adequately grounded.  
 Recommended monitoring procedures: dust concentration.  
 Provide adequate ventilation.  
 Dust emission: with local exhaust ventilation.

**8.2.2. Personal protection equipment**

Avoid all unnecessary exposure.

Personal protective equipment symbol(s):



**8.2.2.1. Eye and face protection:**

Eye protection:  
Wear tightly sealed safety glasses.

**8.2.2.2. Skin protection**

Skin and body protection:  
Wear suitable protective clothing.

Hand protection:  
Wear suitable gloves.

**8.2.2.3. Respiratory protection:**

Respiratory protection:  
Wear appropriate mask. A suitable respirator required when dust is generated

**8.2.2.4. Thermal hazards**

Wear personal protective equipment.

**8.2.3. Environmental exposure controls**

Environmental exposure controls:  
Establish monitoring systems for monitoring particulates, vapours, gases concentrations.

**Other information:**

Wash hands before breaks and after work. When using do not eat, drink, or smoke.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**9.1. Information on basic physical and chemical properties**

Physical state:	Solid
Appearance:	Crystalline prills (granules)



Colour:	White/slightly colored
Odour:	Odourless
Odour threshold:	Not applicable
Melting point/freezing point:	134°C (1013hPa)
Boiling point/boiling range:	Decomposition before the boiling point (CRC Handbook, 2006)
Flammability:	Non-flammable (Sax & Lewis, 1987)
Upper/lower flammability or explosive limits:	Not applicable (Non-flammable)
Flash point:	Not applicable (solid)
Auto-ignition temperature:	Not applicable (melting point: 134 °C)
Decomposition temperature:	No data available
pH:	7.5-9.5 (10% solution in water)
Viscosity, kinematic:	Not applicable (solid)
Solubility:	No data available
Water solubility:	624000 mg/l (20°C)
Partition coefficient n-octanol/water (Log Kow):	Not data available
Partition coefficient n-octanol/water (Log Pow):	-1.73 (20°C)
Vapour pressure:	0.0016 Pa (25 °C) (Jones, 1960)

Vapour density:	Not applicable
Relative density	1330 (20°C)
Relative vapour density at 20 °C:	Not applicable
Explosive properties:	Not applicable
Oxidising properties:	Not applicable
Explosive limits:	Not applicable (non-flammable)
Viscosity:	Not applicable (solid)
Evaporation rate:	Not applicable
Particle size:	No data available
Particle size distribution:	No data available
Particle shape:	No data available
Particle aspect ratio:	No data available
Particle aggregation state:	No data available
Particle agglomeration state:	No data available
Particle specific surface area:	No data available
Particle dustiness:	No data available

## **9.2. Other information**

### 9.2.1. Information with regards to physical hazard classes

Organic peroxide: Based on the available data, the classification criteria are not met.

Self-heating: Based on the available data, the classification criteria are not met.

Pyrophoric liquid: Based on the available data, the classification criteria are not met.

Corrosive to metals: Based on the available data, the classification criteria are not met.

Substance which in contact with water emits flammable gases: Based on the available data, the classification criteria are not met.

### 9.2.2. Other safety characteristics

Relative evaporation rate (butylacetate=1): Not determined

## **SECTION 10. STABILITY AND REACTIVITY**

### **10.1. Reactivity**

See section: 10.3

### **10.2. Chemical stability**

Stable.

### **10.3. Possibility of hazardous reactions**

Reacts with: Acid, acid anhydrides.

Reacts with: Nitric acid: formation of urea-nitrate (explosive).

### **10.4. Conditions to avoid**

Keep away from moisture.

Keep away from sources of ignition.

Keep away from incompatible materials.

### **10.5. Incompatible materials**

Water. Acid. Combustible substance. Fertilizers.

**10.6. Hazardous decomposition products**

Nitrogen oxides. Carbon monoxide. Carbon dioxide. Ammonia.

**SECTION 11. TOXICOLOGICAL INFORMATION**

**11.1. Information on toxicological effects:**

Moderately hazardous substance.

**11.1.1. Acute effects (acute toxicity, irritation and corrosivity)**

LD50 oral:	14300 mg/kg bw (rat, male) 15000 mg/kg bw (mouse, female) OECD 401 Sato, N. Aikawa K., Sugimoto, T., Kotera, K., Tauchi, K., Tanaka (1997)
LD50 dermal:	No data available
LC50 inhalation:	Inhalation: not relevant.
Skin corrosion / irritation:	Not an irritant (rabbit) OECD 404, EU B.4, EPA OPPTS 870.2500
Serious eye damage / irritation:	Not an irritant (rabbit) OECD 405
Specific target organ toxicity – single exposure:	Based on the available data, the classification criteria are not met.
Specific target organ toxicity – repeated exposure:	Based on the available data, the classification criteria are not met. Oral (12 months) NOAEL:2250 mg/kg bw/day (rat, male/female) NCI screening study. Fleischman, R.W. Baker, J.R. Hagopian, M. Wade, G.G. Hayden, D.W. (1980).

**11.1.2. Sensitisation:**

**Respiratory sensitisation:**

Not classified. Based on the available data, the classification criteria are not met. (Based on experience of extensive and historical occupational use of urea).

**Skin sensitisation:**

Based on the available data, the classification criteria are not met.  
(Urea: naturally present in human skin. Used in skin creams. No reports of sensitisation reactions) (Stuttgen, 1992). (Alchangian et al., 1986).

**11.1.3. Repeated dose toxicity:**

**Specific target organ toxicity — repeated exposure:** Based on the available data, the classification criteria are not met.

Oral (12 months)

NOAEL: 2250 mg/kg bw/day (rat, male/female)

NCI screening study.

Fleischman, R.W. Baker, J.R. Hagopian, M. Wade, G.G. Hayden, D.W. (1980).

**11.1.4. CMR effects (carcinogenicity, mutagenicity, and toxicity for reproduction):**

**Carcinogenicity:** Based on the available data, the classification criteria are not met.

Oral (12 months)

NOAEL: 2250 mg/kg bw/day (rat, male/female).

Fleischman, R.W. Baker, J.R. Hagopian, M. Wade, G.G. Hayden, D.W. (1980).

**Germ cell mutagenicity:** Based on the available data, the classification criteria are not met.

**Reproductive toxicity:** Based on the available data, the classification criteria are not met.

Developmental toxicity/teratogenicity

Oral (14 days)

NOAEL (teratogenicity): 500 mg/kg bw/day (rat) .

Seipelt, H., Zoellner, K., Hilgenfeld, E. & Grossmann, H. (1969).

**Reproductive toxicity, effects on or via lactation:** Based on the available data, the classification criteria are not met.

**11.1.5. Aspiration hazard:**

Based on the available data, the classification criteria are not met.

**11.2. Information on other hazards**

11.2.1. Endocrine disrupting properties:  
Not classified. Based on available data, the classification criteria are not met.

11.2.2. Other information:  
Potential Adverse human health effects and symptoms: Based on available data, the classification criteria are not met.

**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

**Acute toxicity to fish**

LC50: Species:

Leuciscus idus > 6810 mg/L (96 h)

**Chronic toxicity to fish**

NOEC: No data available

**Acute toxicity to crustaceans**

EC50: Species: Daphnia magna >10000 mg/L (24 h) (freshwater, static, based on mortality), DIN 38412 Teil 11 (modified) Bringmann, G. & Kuhn, R. (1982)

<b>Chronic toxicity to crustaceans</b>	
NOEC: No data available	
<b>Acute toxicity to algae and other aquatic plants</b>	
EC50: Species: <i>Microcystis aeruginosa</i> (algae) Toxicity threshold (192 h): 47 mg/L (freshwater, semi-static, based of biomass.) Bringmann, G. & Kuhn, R. (1982)	
<b>Toxicity data on soil micro- and macro-organisms and other environmentally relevant organisms, such as birds, bees, and plants</b>	
Species: <i>Glycine max.</i> (L.) Merr. (legume) Short-term toxicity (laboratory study). NOEC (7 d): 9 mg/leaf/day dissolved in 0.6 ml water (based on leaf tip necrosis). Krogmeier, M.J., McCarty, G.W. & Bremner, J.M. (1989).	
<b><u>12.2. Persistence and degradability</u></b>	
Readily biodegradable:	
In water: Readily biodegradable. OECD 302 B	
Other relevant information:	
Urea is stable in aqueous solution.	
<b><u>12.3. Bioaccumulative potential</u></b>	
Experimental BCF	No applicable (low bioaccumulation potential).
Log Pow	-1.73 (20°C)

#### **12.4. Mobility in soil**

Adsorption coefficient: Koc: 0.037-0.064

Hongprayoon, C., Patrick, W.H., Lindau, C.W., Bouldin, D.R. & Reddy, K.R. (1991)

#### **12.5. Results of PBT and vPvB assessment**

PBT/vPvB: No

#### **12.6. Endocrine disrupting properties**

No additional information available.

#### **12.7. Other adverse effects**

Other adverse effects:

No additional information available.

Additional information:

Avoid release to the environment.

### **SECTION 13. DISPOSAL CONSIDERATIONS**

#### **13.1. Waste treatment methods**

This product and its packaging must be disposed of in a safe way. Generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should always comply with the requirements of environmental protection and waste disposal legislation and any regional or local authority requirements.

Product/Packaging disposal recommendations:

Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer but processed in a suitable effluent treatment plant.

Depending on the degree and nature of the contamination, dispose of it as fertilizer on the field, as a raw material or in an authorized waste facility. Incineration or landfill should only be considered when recycling is not feasible. European waste catalogue (EWC) waste code 06 10 99 - wastes not otherwise specified.

Empty containers or liners may contain product residues. Packages should be emptied and can be recycled after thorough cleansing. If approved by local authorities, empty containers may be disposed of as non-hazardous material or returned for recycling.



Ecology - waste materials:  
Avoid release to the environment.

**SECTION 14. TRANSPORT INFORMATION**

In accordance with ADR / IMDG / IATA / ADN / RID

**14.1 UN number:**

Not regulated as dangerous under transport regulations.

**14.2. UN proper shipping name:**

Not regulated as dangerous under transport regulations.

**14.3. Transport hazard class(es):**

Not regulated as dangerous under transport regulations.

**14.4. Packing group:**

Not regulated as dangerous under transport regulations.

**14.5. Environmental hazards:**

Not regulated as dangerous under transport regulations.

14.6. Special precautions for user

**Overland transport**

Not applicable

<b>Transport by sea</b>
Not applicable
<b>Air transport</b>
Not applicable
<b>Inland waterway transport</b>
Not applicable
<b>Rail transport</b>
<b><u>14.6. Maritime transport in bulk according to IMO instruments</u></b>
Not applicable
<b><u>14.7. Transport in bulk according to Annex II of Marpol and the IBC Code:</u></b>
Not relevant.
<b>SECTION 15. REGULATORY INFORMATION</b>
<b><u>15.1. Safety, health, and environmental regulations/legislation specific for the substance or mixture</u></b>
<p><b>15.1.1. EU-Regulations</b></p> <p>No REACH Annex XVII restrictions          Urea is not on the REACH Candidate List          Urea is not on the REACH Annex XIV List          Urea is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.          Urea is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants          Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.</p>

Regulation (EC) No 2003/2003 of the European Parliament and of the council of 13 October 2003, relating to fertilizers.

15.1.2. National regulations

No additional information available

### **15.2. Chemical safety assessment**

Not applicable (not classified as dangerous).

## **SECTION 16. OTHER INFORMATION**

### **Indication of changes:**

### **Documentation of changes:**

#### **Version № P-5-EN**

According to Regulation (EU) 2015/830, 2020/878 (REACH Annex II):

Change of revision date: 11-09-2021.

Section 1.1: Product identifier – Added Product form: Substance.

Section 2.3: Other hazards – Added confirmation the product does not contain substances for having endocrine disrupting properties.

Section 4.1: Description of first aid measures – Information was divided into the following categories: First aid measures general; First aid measures after inhalation; First aid measures after skin contact; First aid measures after eye contact; First aid measures after ingestion

Section 4.2: Added a separate sub-heading for Most important symptoms and effects, both acute and delayed.

Section 4.3: Added a separate sub-heading for Indication of any immediate medical attention and special treatment needed.

Section 5: Added separate sub-headings for Extinguishing media; Special hazards arising from the substance or mixture; Advice for firefighters.

Section 6: Added separate sub-headings for Personal precautions, protective equipment, and emergency procedures; Environmental precautions; Methods and material for containment and cleaning up; Reference to other sections.

Section 8.1: Added separate sub-headings for National occupational exposure and biological limit values; Recommended monitoring procedures; Air contaminants formed; DNEL and PNEC; Control banding.

Section 8.2.2: Added Personal protective equipment symbols.

Section 8.2.2: Included Environmental exposure controls under section 8.2.2 (previously 8.2.3)

Section 9: Updated Information on basic physical and chemical properties.

Section 11: Updated Toxicological information.

Section 12: Updated Ecological information.

Section 15: Updated Regulatory information.

Section 16: Updated Indications of changes. Added Sources of Key data. Added Full text of H- and EUH-statements

**Version № P-4-EN**

Sections 13.1, 13.1.1., 13.1.2.: Adding information about disposal considerations.

**Version № P-3-EN**

Change of the manufacturer's name in section 1.3.

**Version № P-2-EN**

File actualization according to COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

**Abbreviations:**

**DNEL:** Derived No-Effect Level

**PNEC:** Predicted No-Effect Concentration

**NOAEL:** No Observed Adverse Effect Level

**NOEC:** No observed effect concentration.

**LD50:** Lethal Dose 50%. The LD50 corresponds to the dose of a tested substance causing 50% lethality during a specified time interval.

**LC50:** Lethal Concentration 50%. The LC50 corresponds to the concentration of a tested substance causing 50% lethality during a specified time interval.

**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.

**BCF:** Bioconcentration factor

**PBT:** Persistent, bioaccumulative and toxic

**vPvB:** Very Persistent and very Bioaccumulative

**Sources of Key data :** 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.

**Other information :** None.

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.