



SAFETY DATA SHEET

In compliance with Regulation (EC) 1907/2006 (REACH), Annex II, amended with Regulation (EC) 2020/878

CARBAMIDE (UREA) – version 8, 2022

1. PRODUCT AND SUPPLIER IDENTIFICATION	
1.1 Product name	
Trade name:	Carbamide
Other names:	Urea
Chemical name:	Carbonyl diamide
Index number in Appendix VI of the CLP Regulation:	Not included in Tables 3.1 and 3.2 / Appendix VI
Identification number in C&L description:	Not classified
CAS/EC number:	57-13-6/200-315-5
REACH registration numbers:	01-2119463277-33-0014
1.2 Identified product or mixture uses and advice on undesirable uses	
Uses:	<u>Main uses of the substance:</u> 1: Production of the substance, including handling, storage and laboratory agent. 2: Formulation and synthesis (including transfer between vessels, product and mixture formulation). 3: Formulation of fertilizers, including blending, packaging, dilution, handling and addition of microelements. 4: Manufacture of solid/liquid fertilizers, including intermediate products for the purpose. 5: Antifreeze production 6: Production of animal feed supplements 7: As pH regulator
Advice on undesirable uses:	None As exposure scenarios, in accordance with Art. 14.4 and Annex XI, section 3 from Regulation (EC) 1907/2006, are not required, detailed information on uses is not provided.
1.3 Details on the supplier of the safety data sheet:	

Importer:	AGROPOLYCHIM AD Industrial area 9160 Devnya URL website: www.agropolychim.bg			
Contact person with regard to the Safety Data Sheet	Eng. Miroslava Tsvetkova AGROPOLYCHIM AD Industrial zone 9160 Devnya Tel.: +359 / 519 97 / 419 Email: m.tsvetkova@agropolychim.bg			
<i>1.4 Emergency phone line</i>				
Emergency phone number in the company:	Tel: + 359 / 519 97 530 (24 hours / day) on the production site			
Emergency phone number in Bulgaria – Toxicology Clinique “Pirogov” Medical Institute:	+359 2 9154 233; +359 2 9154 409 (24 hours / day) Toxicology Clinique, Pirogov National Institute, Sofia			
International emergency phone number	112			
2. HAZARDS IDENTIFICATION				
2.1 Substance classification				
Classification according to Regulation 1272/2008 (CLP)				
Danger phrases:	Not classified	---		
2.2 Label elements				
Labeling in accordance with Regulation 1272/2008 (CLP)				
Danger pictograms:	None			
Signal word	None			
Danger phrases:	Not classified	----		
Precautionary statements	Not classified	----		
2.3 Other dangers				
PBT (persistent, bioaccumulative and toxic) / vPvB (very persistent and very bioaccumulative) criteria:	In accordance with annex XIII from Regulation (EC) No 1907/2006, this substance is not subject to PBT and vPvB assessment, due to its inorganic origin.			
Endocrine disrupting properties:	Data lacking			
Nanoforms:	This product does not contain nanoforms or nanoform-containing substances.			
Other dangers	Not known			
3. COMPOSITION/INFORMATION ON INGREDIENTS				
Substance				
In accordance with the REACH Regulation, carbamide is classified as a single-component substance (of inorganic origin)				
Chemical name	CAS no.	EC no.	IUPAC name	Purity
Carbamide	57-13-6	200-315-5	Carbonyl diamide	~ 98 %
4. FIRST AID MEASURES				
4.1 Description of first aid measures				

Contact with eyes:	Wash thoroughly with plenty of water for at least 10 minutes. In case of eye irritation – seek specialized medical assistance.
Contact with skin:	Wash the area with plenty of water and soap.
Ingestion:	Do not induce vomiting. Rinse mouth and give water or milk to drink. IN case of ingestion of larger quantities, immediately seek specialized medical assistance.
Inhalation:	Remove from source of dust exposure. In case of discomfort, seek medical assistance.
4.2 Main symptoms and effects	
Acute effects	None
Delayed effects	None
4.3 Guidelines on any emergency first aid measures or specialized treatment, if necessary	
Note to medical personnel: Inhalation of gases, containing ammonia and carbon dioxide, in case of fire or decomposition, may cause irritation to the eyes and skin.	
5. FIRE-FIGHTING MEASURES	
5.1 Fire-fighting means	
Suitable:	If fertilizer is not directly involved in the fire – use the best available fire-fighting means. If the fertilizer is directly involved in the fire – use plenty of water, foam or a dry chemical.
Unsuitable:	Not determined
5.2 Special hazards from the substance/mixture.	
Heating to decomposition leads to the release of ammonia and carbon dioxide (NH ₃ and CO ₂). Dangerous and flammable decomposition products: Ammonia (NH ₃).	
5.3 Advice to fire-fighters	
Open the doors and windows of the storage room for maximal ventilation. Avoid inhaling the smoke, stay upwind from fire. Use an individual breathing apparatus, if in contact with smoke.	
6. ACCIDENTAL RELEASE MEASURES	
6.1 Personal precautions, safety equipment and emergency procedures	
Avoid walking on dispersed product and exposure to dust. Avoid contact with eyes. Use suitable safety equipment. Keep away from heat sources.	
6.2 Safety measures for the environment	
Avoid polluting water sources and sewage, inform authorities in case of accidental release into waters reservoirs.	
6.3 Methods and materials for collection and cleaning	
In case of release of any fertilizer, the fertilizer must be cleaned immediately, swept clean and collected in labeled open containers for safe disposal. Avoid spreading the dust.	
6.4 Reference to other parts of this Safety Data Sheet.	
See part 8 for personal protective equipment and part 13 for disposal considerations.	
7. HANDLING AND STORAGE	
7.1 Safety measures for handling	

Technical measures / Safety measures:	Avoid excessive generation of dust. Avoid unnecessary exposure to the atmosphere, in order to avoid absorption of moisture. Avoid polluting with flammable materials (e.g. diesel, lubricants) and/or other incompatible materials, such as ammonium nitrate. When handling for a long period of times, use protective equipment, such as gloves. Carefully clean tools and equipment before handing them over for repair and/or inspection.
General work hygiene rules	Do not eat, drink and smoke in the working area. Wash your hands after contact with the substance. Remove dirty clothes and protective equipment when leaving polluted areas. See also Section 8 for additional information on hygiene measures.
<i>7.2 Safe storage conditions, including incompatibilities</i>	

Technical measures/ Storage conditions:	<p>Store in compliance with national and local legal requirements.</p> <p>Store away from heat and flame sources.</p> <p>Keep away from flammable materials and the substances, listed in p. 10.</p> <p>On the field – make sure that fertilizer is not stored close to hay, grain, straw, diesel etc.</p> <p>When fertilizer is stored in bulk, take necessary measures to make sure that it is not mixed with other fertilizers.</p> <p>Ensure high standards of storage in storage rooms.</p> <p>Do not allow smoking or the use of open light in storage rooms.</p>
Incompatible materials:	Strong oxidizers, acids, alkali, nitrates, nitrites, sodium or calcium hypochlorite. Mixing solid carbamide with solid ammonium nitrate leads to the formation of a suspension. Carbamide reacts with sodium or calcium hypochlorite, resulting in the formation of explosive nitrogen trichloride.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 Control parameters:

Carbamide does not meet the criteria for classification as a dangerous substance, set out in Directive 67/548/EEC or Directive 1999/45/EC and is not classified as persistent, bioaccumulative and toxic or very persistent and very bioaccumulative and therefore there are no grounds for exposure assessment.

Regulated levels of population exposure limits.	None
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Recommended population and user exposure limits (with regard to the chemical safety assessment)	Exposition	Derived No Effect Levels (DNEL)		
		Systematic effects	Workers	Public
	Oral	Chronic Systems effects acute/ chronic	Not applicable	50 mg/kg bw/day
	Dermal	System effects, acute	500 mg/kg bw/day	300mg/kg bw/day
		Chronic systems effects	500 mg/kg bw/day	300mg/kg bw/day
	Inhalation	System effects, acute	3526 mg/m ³	1043.5mg/m ³
		Systemic effects, chronic	3526 mg/m ³	1043.5mg/m ³
8.2 Exposure control				

No requirements: Use of adequate ventilation is a good industrial practice. Avoid high dust concentrations and provide ventilation, where necessary.

Respiratory protection:	If the dust concentration is high and/or ventilation is inadequate, use suitable dust masks or a respirator with a filter, suitable for the respective dust concentration (EN 143, 149, filters P2, P3).
Hand protection:	Suitable gloves (e.g. leather or rubber) when working with the product for an extended amount of time.
Eye protection:	Safety goggles with side protection (EN 166).

Protection of the skin and body:	Working clothing
Hygiene measures:	While working with the product, do not eat, drink or smoke. After working with the product and before eating, smoking or using the WC, as well as at the end of the day – wash your hands.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on the main physical and chemical properties

Appearance:	White granules or prilled particles
Odour:	No odor or a weak ammonia odor.
pH	9 (100 g/l; 20°C)
Melting/freezing temperature:	Melting temperature ~134°C, with decomposition right after melting.
Boiling temperature:	Decompose before boiling.
Ignition point:	Not applicable
Flammability:	Not flammable.
Explosive properties:	Not explosive.
Oxidizing properties:	No oxidizing properties.
Vapour pressure 25 °C:	$< 1.2 \times 10^{-5}$ mm Hg.
Relative density (D4 (20)):	1.33 g/cm ³
Bulk density:	760 – 800 kg/m ³
Solubility in water:	>624 g/l at 20°C
Diffusion coefficient n – octanol/water:	Not applicable, the substance is inorganic but it is considered that the coefficient is too small (based on the high solubility in water)
Viscosity:	Not applicable, the substance is a solid
Dissociation constant	under 0,6 pKb
Specific conductivity:	No data
Ignition temperature:	Does not ignite on its own (on the basis of structure and melting temperature)
Granule size,	0.1 – 5 mm
Surface pressure:	Not a surfactant (based on structure).

9.2 Additional information

Molecular weight: 60.06; Inorganic, solid, single-component compound

10. STABILITY AND REACTIVITY

10.1 Reactivity

Stable when recommended storage and handling conditions are kept (see p. 7)

10.2 Chemical stability

Stable when recommended storage and handling conditions are kept (see p. 7)

10.3 Probable risk reactions

Avoid welding the equipment, before it is cleaned and washed, as it may contain remnants from the product,

10.4 Conditions to avoid

Heating above 134 °C leads to decomposition. Avoid contamination with metals, dust and organic materials. Sources of heat and fire in close proximity.

10.5 Incompatible materials

Strong oxidizers, acids, alkali, nitrates, nitrites, sodium or calcium hypochlorite. Mixing solid carbamide with solid ammonium nitrate leads to the formation of a suspension. Carbamide reacts with sodium or calcium hypochlorite, resulting in the formation of explosive nitrogen trichloride.

10.6 Hazardous decomposition products

For fire situations – see point 5.

When heating up to high temperatures above 134 °C, carbamide melts and decomposes, releasing ammonia vapors and NO_x (see points 2 and 9).

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxic effects

ACUTE TOXICITY	
Acute oral toxicity:	LD50 rats: 11500 – 13000 mg/kg live weight (OECD guidelines 425)
Acute oral toxicity:	Not toxic
Acute inhalation toxicity:	Not toxic
LOCAL EFFECTS	
Irritation of skin:	Not irritating
Irritation to eyes:	Not irritating
Increase in skin sensitivity:	Does not increase skin sensitivity
OTHERS	
Average toxicity (no observable adverse effect level– NOAEL):	Inhalation exposure not considered likely for this substance. (NOAEL): 2250mg/kg bw/day (chronic; rats)
Mutagenity:	Negative (OECD guidelines 471), <i>in vitro</i> Negative (OECD guidelines 476), <i>in vivo</i>
Reproductive toxicity:	Not toxic; (NOAEL): 1000 mg/kg bw/day (subchronic; rats)
Cancerogenicity:	Negative
Repeated toxicity	After research has been done, no long-term effects have been observed. No suggestions for classification.

12. ECOLOGIC INFORMATION

12.1 Toxicity

Fish (short-term):	96-h LC ₅₀ : > 6810 mg/l (OECD guidelines 203); Fresh water
Fish (long-term):	No data available
Plankton Daphnia carinata (short-term):	24-h EC ₅₀ : 10 000 mg/l
Plankton Daphnia carinata (long-term):	No data available
Algae (chronic):	NOEC 47 mg/l Fresh water
	Low toxicity to water organisms. No known significant effects or critical hazards

12.2 Persistence and degradability

Biodegradability:	4 mg/l for 1h at 20 °C; 96 % - Inherently biodegradable - 16 d
Photolysis:	Does not undergo photolysis

12.3 Bioaccumulative potential

LogPow	1.73
Bioconcentration factor (BCF):	Not applicable
12.4 Mobility in soils	
Adsorption coefficient:	Low adsorption potential (based on substance qualities).
12.5 Results from the PBT and vPvB assessment	
As the Urea is an inorganic substance, PBT (persistence, bioaccumulation and toxicity) and vPvB (strong persistence and bioaccumulation) assessments are not necessary, in accordance with Annex XIII / REACH Regulation.	
12.6 Endocrine disrupting properties	
No available data for endocrine disrupting properties.	
13. DISPOSAL CONSIDERATIONS	
Decomposition product disposal:	<p>Depending on the level and type of contamination, treat either as agricultural fertilizer, or as raw material for the production of liquid fertilizer, or treat inside respectively regulated facilities.</p> <p>Do not throw the material in the drainage system, treat material and its package in a safe way and in accordance with applicable local and national regulatory norms.</p> <p>See points 06 03 and 06 10 from the disposal item list (Commission decision 2000/532/EC)</p>
Package /bags:	<p>Clean emptied packages as well as possible, by shaking carefully.</p> <p>If it is permitted by local authorities, empty packages may be used a second time or returned for recycling.</p>
14. TRANSPORT INFORMATION	
UN №:	Not regulated
Exact name of the transported product:	Carbamide
Danger classes when transporting:	Not classified
Package group:	<i>Not classified</i>
Special safety measures:	<i>None</i>
IMDG regulation	
UN №:	Not regulated
Exact name of the transported product:	Not applicable
Danger classes when transporting:	Not classified
Package group:	<i>Not classified</i>
Environmental hazard:	<i>No</i>
Marine pollutant:	<i>No</i>
IMSBC	
Exact name of the bulk transported product:	<i>UREA</i>
Class:	Not applicable
Group:	<i>C</i>
MARPOL V:	<i>Non-HME</i>
Transport in bulk according to Annex II of MARPOL and the IBC Code	Not applicable

15. REGULATORY INFORMATION	
15.1 Specific regulations/legislation on the substance or mixture, regarding safety, health and environmental protection	Regulation EC 1907/2006 (REACH), Regulation (EU) 2019/1009 on Fertilizers
15.2 Chemical safety assessment:	The substance is not classified as dangerous in accordance with the criteria, set out in Regulation on classification, labeling and packaging of substances and mixtures CLP Regulation, 1272/2008/EC). Therefore, in agreement with Art. 14 (4) of the REACH Regulation, an assessment of exposure and chemical safety is not required.
16. ADDITIONAL INFORMATION	
<p>The information, provided in this informational Safety Data Sheet is accurate to our best knowledge, beliefs and information at the time of publication. The information is provided only as guidance for safe treatment, use, processing, storage, transport, disposal and release, and should not be considered a guarantee or quality specification. The information pertains only to the specific product, described in the sheet, and shall not be considered for the same material, used in combination with any other materials or derivatives, unless specified in the text.</p>	
<p>Classification according to Regulation 1272/2008, as described in Annex VI:</p> <p>The substance is not classified as dangerous, in accordance with the criteria, set out in the Dangerous Substance Directive (67/548/EEC) or the CLP Regulation on classification, labeling and packaging of substances and mixtures (1272/2008/EC)</p> <p>Classification according to Regulation 1272/2008, own classification based on the performed chemical safety assessment (CSA):</p> <p>Not classified uniquely, under CSA.</p>	
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