

SAFETY DATA SHEET

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

Urea - Ammonium nitrate

1. IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY/UNDERTAKING	
1.1 Product identifier	
Trade name:	Urea Ammonium Nitrate, solution (32% total N)
Other names:	Liquid fertilizer Urea Ammonium Nitrate; Solution UAN 32-0-0; UAN 32% nitrogen
Chemical name:	Nitric acid Ammonium salt (1:1), mixture with Urea
INDEX number as listed in Table 3.1-Application VI in CLP:	Not listed. Mixture.
ID number of the C&L inventory:	Not classified. Mixture.
CAS number:	15978-77-5
REACH registration no(s):	01-2119490981-27-0027: Ammonium nitrate 01-2119463277-33-0014: Urea
UFI #	A600-S0Q7-R00J-4J57
1.2 Relevant identified uses of the mixture and uses advised against	
Uses:	<u>Uses by workers in industrial settings:</u> 1: Manufacturing of the substance, including handling, storage and quality control. 2: Sampling, loading, filling, transfer, dumping, bagging of substance (charging/discharging) at (non-)dedicated facilities. Industrial/professional settings. 3: Storage. 4: Transfer of substance into small containers (dedicated filling line, including weighing). Industrial/professional setting. 5: Quality control. <u>Uses by professional workers:</u> 6: Spraying. 10: Professional use as fertilizer – liquid fertigation at open field (non-industrial spraying). 11: Professional use as fertilizer– liquid fertigation in the soil. 12: Professional use as fertilizer – greenhouse liquid fertigation in the soil. 16: Professional use as fertilizer – greenhouse liquid fertigation (non-industrial spraying). <u>Uses by consumers:</u> 17: Consumer end use – fertilization at open field.

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	18: Consumer end use – indoor use of fertilizers.
Uses advised against:	None
1.3 Details of the supplier of the safety data sheet	
Manufacturer:	AGROPOLYCHIM AD BULGARIA Industrial zone 9160, DEVNYA Tel: +359 / 519 97 419 URL website: www.agropolychim.bg
Person responsible for the Safety Data Sheet (with e-mail address)	Miroslava Tsvetkova, dipl. eng. AGROPOLYCHIM AD, BULGARIA Industrial zone 9160, DEVNYA Tel.: +359 / 519 97 419 Email: m.tsvetkova@agropolychim.bg
1.4 Emergency telephone number	
Emergency phone number in Bulgaria – Toxicology Clinique “Pirogov” Medical Institute:	+359 2 9154 233; +359 2 9154 409 (24 hours / day)
International emergency phone number	112
2. HAZARDS IDENTIFICATION	
2.1 Classification of the mixture	
<u>Classification in accordance with Regulation (EC) #1272/2008 (CLP): based on a Chapter 3.3.3.3 / CLP classification rule, and according additive principle and limit values settled down into Table 3.3.3. This mixture is not included in Table 3.1 of CLP. According Orange book (Transport of Dangerous Goods) – mixtures, containing AN under 70% are not classified as a hazard and doesn't fall under class 5.1 i.e. oxidizing mixtures.</u>	
Classification:	Eye irritation, category 2
2.2 Label elements	
Labelling in accordance with Regulation (EU) 1272/2008 (CLP)	
Hazard pictogram(s):	 GHS07
Signal word	Warning
Hazard statement(s):	H319 Causes serious eye irritation.

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Precautionary statement(s):	In prevention: P264 P280 In reaction: P305+P351+P338 P337+P313	Wash hands thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Seek medical advice/attention.
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2.3 Other hazards

PBT/vPvB criteria:	According to Annex XIII of Regulation (EC) No 1907/2006, no PBT and vPvB assessment has been conducted since ammonium nitrate and urea are inorganic substances.
Endocrine disrupting properties:	No available data
Nanoforms:	This product does not contain nanoforms or nanoform-containing substances.
Other hazards:	Not known

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances/preparation:

According to the REACH Regulation the product is a mixture between Urea and Ammonium nitrate.

Chemical name	CAS no.	EC no.	IUPAC name	% mass
Nitric acid ammonium salt	6484-52-2	229-347-8	Ammonium nitrate, (NH ₄ NO ₃)	45,70 ± 1
Carbonyl di amide	57-13-6	200-315-5	Urea, CO(NH ₂) ₂	34,50 ± 1
Water	7732-18-5	231-791-2	Water	Up to 100%

Ingredients Classification:

Nitric acid ammonium salt	May intensify fire; oxidiser, cat.3; H272 Causes serious eye irritation, cat.2; H319	Type [1]
Carbonyl dy amide	Not classified.	

[1] Substance classified as presenting a physical, health and environmental hazard.

[2] Substance with a workplace exposure limit.

[3] Substance meets the criteria for PBT according to Regulation (EC) No 1907/2006, Annex XIII.

[4] Substance meets the criteria for very persistent and very bio accumulative (vPvB) according to Regulation (EC) No 1907/2006, Annex XIII.

[5] Substance of equivalent concern.

See section 16 for the full text of the H-phrases listed.

4. FIRST-AID MEASURES

4.1 Description of first aid measures

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Eye contact:	Immediately wash eyes with plenty of running water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Remove contact lenses if present and easy to do. Seek medical advice if irritation develops and persists.
Skin contact:	Wash with soap and water. Seek medical attention if irritation progresses.
Ingestion:	Seek medical advice if the victim feels unwell. Wash out mouth with plenty of water and give plenty of water to drink. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical advice if symptoms occur.
Inhalation:	Avoid breathing vapors, sprays or mist. In case of inhalation, remove person to fresh air.
4.2 Most important symptoms and effects	
Acute effects	Adverse symptoms of eye contact may include the following: pain or irritation, tearing, redness.
Delayed effects	Not known
4.3 Indication of any immediate medical attention and special treatment needed	
Note to physician: Treat symptomatically. Contact a toxicologist immediately if large quantities are swallowed or inhaled. In case of inhalation of decomposition products in a fire, symptoms may appear later. The exposed person may need to remain under medical observation for 48 hours. No specific treatment.	
5. FIRE-FIGHTING MEASURES	
5.1 Extinguishing media	
Suitable:	Water.
Not suitable:	Not identified.
5.2 Special hazards arising from the substance or mixture	
Hazards arising from the substance or mixture:	
In a fire or if heated, a pressure increase will occur, and the container may burst.	
Hazardous combustion products:	
Decomposition products may include the following materials: nitrogen oxides, ammonia, avoid breathing fumes or smoke from burning material. In case of inhalation of decomposition products in a fire, symptoms may be delayed.	
5.3 Advice for firefighters	
Special precautions for firefighters:	
Promptly isolate the scene by removing people from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.	
Special protective equipment for firefighters:	
Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Firefighting clothing (including helmets, protective boots and gloves) complying with European Standard EN 469 provides a basic level of protection in chemical incidents.	

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6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

No action shall be taken involving any personal risk or without suitable training. Evacuate the surrounding area. Do not allow personnel not involved in the emergency response and not protected against harmful effects to enter the contaminated area. Do not touch or walk through spilled material. Avoid breathing vapours or mists. Ensure adequate ventilation. Wear suitable respiratory equipment when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

For emergency responders:

If specialized clothing is required to deal with the spillage, carefully consider the information in Section 8 on suitable and unsuitable materials. See also the information in the section "For non-emergency personnel".

6.2 Environmental precautions

Prevent the material from contact with soil, entering surface water or sanitary sewer system. Do not discharge directly to a water source. If accidental spillage or washings enter drains or watercourses contact local authority.

6.3 Methods and material for containment and cleaning up

Small spill:

Stop leak if without risk. Move containers from spillage area. Dilute with water and dry if water soluble. Alternatively, or if water insoluble, absorb with inert dry material and place in a suitable container for waste treatment. Disposal of product should be carried out by a licensed chemical waste disposal company.

Large spill:

Stop leak if without risk. Move containers from spillage area. Approach spillage from windward direction. Do not allow drains, water courses, basements or confined spaces. Wash spillage to a treatment plant or proceed as follows. Soak up spillage with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth, collect and place in containers for subsequent disposal according to local regulations. Disposal of products should be carried out by a licensed chemical waste disposal company. Contaminated absorbent material may pose the same hazards as the spilled product.

6.4 Reference to other sections

See Section 1 for emergency contacts. See Section 8 for information on appropriate personal protective equipment. See Section 13 for further information on waste treatment methods.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Technical measures/ Precautions:	Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapours or mist. Keep tightly closed when not in use in the original container or another approved container made of a compatible material. Empty containers retain product residues and may be hazardous. Do not reuse container. product.
General occupation hygiene:	Do not eat, drink or smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

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Technical measures/ Storage conditions:	Store in accordance with local regulations. Store in original container, protected from direct sunlight, in a dry, cool and well-ventilated place, away from incompatible materials (see Section 10), food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened should be carefully resealed and stored upright to prevent spillage. Do not store in unmarked containers. Packaging materials: Black/carbon/steel. Tanks. Unsuitable: Zinc, copper																		
Incompatible products:	Combustible and reducing materials																		
8. EXPOSURE CONTROLS / PERSONAL PROTECTION																			
8.1 Control parameters																			
Regulated occupational exposure limit values:	No occupational exposure limits established.																		
Recommended occupational and consumer exposure limit values (following from the performed Ammonium nitrate CSA):	<table><tr><th rowspan="2">Exposure pattern</th><th colspan="2">Derived No Effect Level (DNEL)</th></tr><tr><th>Workers</th><th>Users</th></tr><tr><td>Oral¹</td><td>Not applicable</td><td>2.56 mg/kg bw/day</td></tr><tr><td>Dermal¹</td><td>5.12 mg/kg bw/day</td><td>2.56 mg/kg bw/day</td></tr><tr><td>Inhalation¹</td><td>36 mg/m³</td><td>8.9 mg/m³</td></tr><tr><td></td><td></td><td></td></tr></table> ¹: As an acute toxicity hazard leading to Classification and Labelling of the substance has not been identified, the long-term DNEL is considered sufficient to ensure that effects from acute exposure to the substance do not occur (in accordance with ECHA Guidance on information requirements and chemical safety assessment: Chapter R.8: Characterization of dose [concentration]-response for human health, May 2008 and Part B: Hazard Assessment, Draft new chapter B.8 Scope of Exposure Assessment, March 2010).		Exposure pattern	Derived No Effect Level (DNEL)		Workers	Users	Oral ¹	Not applicable	2.56 mg/kg bw/day	Dermal ¹	5.12 mg/kg bw/day	2.56 mg/kg bw/day	Inhalation ¹	36 mg/m ³	8.9 mg/m ³			
Exposure pattern	Derived No Effect Level (DNEL)																		
	Workers	Users																	
Oral ¹	Not applicable	2.56 mg/kg bw/day																	
Dermal ¹	5.12 mg/kg bw/day	2.56 mg/kg bw/day																	
Inhalation ¹	36 mg/m ³	8.9 mg/m ³																	
8.2 Exposure controls																			
Appropriate engineering controls:	None required: Use of adequate ventilation is good industrial practice. In addition, an eyewash facility and a safety shower for facilities storing or utilizing this material is good industrial practice.																		
Environmental exposure controls:	Dispose of rinse water in accordance with local and national regulations.																		
Individual protection measures, such as personal protective equipment																			
Respiratory protection:	In case of poor ventilation, wear respiratory protective equipment.																		
Hand protection:	long sleeved overall; chemically resistant impregnated gloves conforming to EN374 with basic employee training) [Effectiveness Dermal: 90%]																		
Eye protection:	Tightly fitting safety glasses are recommended, CEN: EN166.																		
Skin and body protection:	Personal protective equipment should be selected based on the activity being performed and the risks involved, and should be approved by a specialist before handling this product.																		
Hygiene measures:	Wash hands, forearms and face thoroughly after handling chemical																		

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	products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.
9. PHYSICAL AND CHEMICAL PROPERTIES	
9.1 Information on basic physical and chemical properties	
Appearance:	Clear liquid
Odour:	Odourless
Odour threshold:	Not applicable
Freezing temperature:	3 – 5 °C
Boiling temperature:	~ 107 °C
Flash-point:	Not applicable
Flammability:	Not flammable (based on molecular structure).
Explosive properties:	Non-explosive
Oxidizing properties:	Slightly corrosive to zinc, copper and aluminium. Non corrosive to mid or stainless steel (304 or 316).
Vapour pressure:	17.2 mm Hg (20°C) (solution)
Density:	1,320 – 1,340 g/cm ³
Solubility in water:	Solution / 100%
Partition coefficient n-octanol/water:	Not relevant as the substance is inorganic, considered to be low (based on high water solubility)
Viscosity:	40°F: 6,1 cP; 60°F: 4,7 cP (32% N)
Specific conductivity:	Not applicable
Auto ignition temperature:	Not relevant
pH (10% water solution)	6.7 – 7.5
Surface tension:	Not surface active (based on molecular structure)
9.2 Other information	
Taste: Disagreeable, saline. Volatility: 20% (w/w) Evaporation rate: Not available.	
10. STABILITY AND REACTIVITY	
10.1 Reactivity	
Stable under recommended storage and handling conditions (see section 7, handling and storage). Stable in normal temperatures and pressure.	
10.2 Chemical stability	

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Stable under recommended storage and handling conditions (see section 7, handling and storage).	
10.3 Possibility of hazardous reactions	
When heated, decomposition products. UAN will form urea – nitrate when mixed with nitric acid at low pH. Urea – nitrate may become unstable and / or explosive under certain conditions.	
10.4 Conditions to avoid	
Decomposes on heating. Avoid confined spaces, sudden heating, contact with flames, sparks and other sources of ignition. Avoid contact with incompatible materials listed in section 7 and below.	
10.5 Incompatible materials	
Bases flammable materials, reducing materials, Urea reacts with calcium hypochlorite or sodium hypochlorite to form the explosive nitrogen trichloride., organic materials, acids.	
10.6 Hazardous decomposition products	
Under normal conditions of storage and use, hazardous decomposition products should not be produced. In case of fire, nitrogen oxides (NO, NO ₂).	
11. TOXICOLOGICAL INFORMATION	
11.1 Information on toxicological effects	
ACUTE TOXICITY / Ammonium nitrate	
Acute oral toxicity:	LD ₅₀ : 2000 mg/kg bw (OECD 401)
Acute dermal toxicity:	LD ₅₀ : > 5000 mg/kg bw (OECD 402)
Acute inhalation toxicity:	LC ₅₀ : > 88.8 mg/l (no guideline followed)
LOCAL EFFECTS / Ammonium nitrate	
Skin irritation:	No adverse effect observed (not irritating)
Eye irritation:	Adverse effect observed (irritating)
Respiratory irritation:	No study available
Corrosivity	No data available
Sensitisation	No adverse effect observed (not sensitising)
OTHER	
Repeated dose toxicity:	Via oral route - systemic effects: No adverse effect observed (NOAEL: 256 mg/kg bw/day) (subacute; rat) Dermal - systemic effects: No study available Dermal - local effects: No study available Inhalation - systemic effects: No adverse effect observed (NOAEC: 185 mg/m ³) (subacute; rat) Inhalation - local effects: No study available
Mutagenicity:	In vitro: No adverse effect observed (negative) In vivo: No adverse effect observed (negative)
Reproductive toxicity:	No relevant information available
Carcinogenicity:	Ammonium nitrate is not genotoxic
CONCLUSION: NO KNOWN SIGNIFICANT EFFECTS OR CRITICAL HAZARDS.	

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12. ECOLOGICAL INFORMATION	
12.1 Toxicity / Ammonium nitrate	
Fish (acute):	LC ₅₀ : > 100 mg/L
Fish (long-term):	NOEC 58 mg/L (study based on sodium nitrate)
Aquatic invertebrates (acute):	> 100 mg/L
Aquatic invertebrates (long-term):	No data
Algae (acute):	EC ₅₀ : > 100 mg/L
Algae (long-term)	NOEC 100 mg/L
12.2 Persistence and degradability / Ammonium nitrate	
Biodegradation:	Standard test is not applicable as the substance is inorganic. In addition, in the anaerobic transformation of ammonium, one group of bacteria oxidizes ammonium to nitrite while another group oxidizes nitrite into nitrate. The average biodegradation rate in wastewater treatment plant at 20°C is 52 g N/kg dissolved solid/day. Nitrate degradation is fastest in anaerobic conditions. During anaerobic transformation of nitrate to N ₂ , N ₂ O and NH ₃ , the biodegradation rate in wastewater treatment plant at 20°C is 70 g N/kg dissolved solid/day.
Hydrolysis:	No hydrolysis group is presented, completely dissociates into ions.
12.3 Bioaccumulative potential	
Octanol-water partition coefficient (K _{ow}):	Not relevant as the mixture is inorganic, but considered to be low (based on high water solubility).
Bio concentration factor (BCF):	Low potential for bioaccumulation (based on ammonium nitrate substance properties).
12.4 Mobility in soil	
Adsorption coefficient:	Low potential for adsorption (based on ammonium nitrate substance properties).
12.5 Results of PBT and vPvB assessment	
According to Annex XIII of Regulation (EC) No 1907/2006, no PBT and vPvB assessment have been conducted since both components, ammonium nitrate and urea are inorganic substances.	
12.6 Endocrine disrupting properties	
No available data for endocrine disrupting properties.	
13. DISPOSAL CONSIDERATIONS	
Waste from residues:	In accordance with local and national regulations. Controlled biodegradation in waste water treatment plant is possible.

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Storage container (tanks):	Containers should be cleaned by an appropriate method and then re-used or disposed by landfill or incineration as appropriate, in accordance with local and national regulations. Do not remove the label until container is thoroughly cleaned.
14. TRANSPORT INFORMATION	
UN Number:	ADR/RID: not available ADN/ADNR: not available IMDG: not available ICAO/IATA: not available
Proper shipping name:	Urea Ammonium nitrate, solution
Transport hazard classes:	ADR/RID: not classified ADN/ADNR: not classified IMDG: not classified ICAO/IATA: not classified
Packaging group:	ADR/RID: not classified ADN/ADNR: not classified IMDG: not classified ICAO/IATA: not classified
Label	Not applicable
Special precautions:	Not applicable
15. REGULATORY INFORMATION	
15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture:	Regulation (EU) 1907/2006 regarding Registration, Evaluation, Authorization and Restriction of the substances (REACH); Regulation (EC) regarding Rules on the making available on the market of EU fertilizing products and repealing Regulation (EC) 2003/2003 (FPR); Regulation (EU) 1272/2008 regarding Classification, Labeling and Packaging (CLP).
15.2 Chemical safety assessment:	In accordance with REACH Article 14, a Chemical Safety Assessment has been carried out for the classified ingredient of this mixture – Ammonium nitrate.
15.3 Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors, amending Regulation (EC) No 1907/2006 and repealing Regulation (EU) No 98/2013	Classified component Ammonium Nitrate with Nitrogen conc. above 16% mass, connected to the AN is under the list of Appendix 1 with code 3102 30 10 (in a water solution) и 3102 30 90 (others). Substances under limitation according to this Regulation ARE NOT made available, introduced, owned or used by the general public!

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16. OTHER INFORMATION	
The information provided in this safety data sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any proceed, unless specified in the text.	
Classification in accordance with Regulation (EU) 1272/2008 (CLP), as listed in Annex VI: <i>Not listed in table 3.1/Appendix VI of CLP Regulation.</i>	
Procedure used for classification according to Regulation (EU) No 1272/2008 [CLP/GHS]	
Classification	Justification
Eye irritation, category 2; H319	Calculation method
Full text of abbreviated H statements:	
H272 - May intensify fire; oxidizer.	
H319 - Causes serious eye irritation.	
Full text of classifications [CLP/GHS]	
OXIDIZING SOLIDS, category 3, H272: May intensify fire.	
EYE IRRITATION, category 2, H319: Causes serious eye irritation.	

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Created/Revised by:	"AGROPOLYCHIM"AD