

MATERIAL SAFETY DATA SHEET: megAN 33.5

In compliance with Regulation (EC) No. 1907/2006 with further amendments.



Version: 1.2.

Issue date: 15.05.2023

Revision date: 04.06.2024

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING		
1.1. Product identifier		
Commercial product name	megAN 33.5	
Synonyms	Ammonium saltpeter	
Unique Formula Identifier (UFI)	NK8J-X5J3-1MPF-SCDP	
1.2. Relevant identified uses of the substance or mixture and uses advised against		
megAN 33.5 is used in agriculture, as a mineral fertiliser.		
1.3. Details of the supplier of the safety data sheet		
Company name	Grupa Azoty Zakłady Azotowe „Puławy” S.A.	
Company address	Al. Tysiąclecia Państwa Polskiego 13; 24-110 Puławy; Poland	
Company telephone number	+48 (81) 886 34 31; +48 (81) 565 30 00 fax.: +48 (81) 565 28 56	
E-mail	dyspozytor.zap@grupaaazoty.com	
1.4. Emergency telephone number		
Company shift dispatcher: + 48 (81) 565 23 00 (24 hours/7 days a week)		
Emergency telephone number: 112		
SECTION 2: HAZARDS IDENTIFICATION		
2.1. Classification of the mixture		
Classification according to Regulation (EC) 1272/2008		
Product classified as hazardous.		
Human health hazards		
Eye Irrit. 2	Eye irritation, category 2	H319
Adverse physical effects		
Ox. Sol. 3	Oxidising solids, category 3	H272
Environmental hazards		
Product is not classified as hazardous for environment.		
2.2. Label elements		
Hazard pictogram(s)	 GHS03 GHS07	
Signal Word	Warning	
Hazard statement(s)	H272: May intensify fire; oxidizer.	

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	H319: Causes serious eye irritation.					
Precautionary statement(s)	P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P220: Keep away from clothing and other combustible materials. P280: Wear protective gloves/protective clothing/eye protection/ face 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. P337 + P313: If eye irritation persists: Get medical advice/attention.					
2.3. Other hazards						
The criteria accepted for persistent substances with bioaccumulative and toxic potential (Persistent, Bioaccumulative, Toxic - PBT) or very persistent and very bioaccumulative substances (very Persistent very Bioaccumulative - vPvB) are not applicable to the substances contained in the mixture. The product does not contain substances included in the list established pursuant to Article 59 (1) as having endocrine-disrupting properties or substances with endocrine-disrupting properties according to the criteria set forth in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0.1% by weight.						
SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS						
3.1. Substances						
Not relevant.						
3.2. Mixtures						
Product identifier		megAN 33.5				
Classification in accordance with Regulation (EC) 1272/2008						
Chemical name	Concentration	EC Number	CAS Number	REACH registration number	Classification	H - statements
Ammonium nitrate (V)	90.0-98.5%	229-347-8	6484-52-2	01-2119490981-27-0025	Oxid. Solid 3 Eye Irrit. 2	H272 H319
Dolomite	1.5 - 10%	240-440-2	16389-88-1	-	Not relevant	Not relevant
Full text of Hazard statements mentioned in this Section are listed in Section 16. For more details see Section 16.						
SECTION 4: FIRST AID MEASURES						
4.1. Description of first aid measures						
General	Provide sufficient general and local ventilation. Installation of safety showers and eyewash stations is recommended at workplace.					

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Inhalation	Remove victim from the area of exposure to fresh air. Obtain medical attention if symptoms of poisoning occur.
Ingestion	If swallowed, give plenty of water to drink. Do not induce vomiting. Ingestion of small amounts of product usually does not cause intoxication. Ingestion of large amount of ammonium nitrate may cause gastro - intestinal disturbances and methemoglobin creation. In some cases low blood pressure is also observed. Obtain medical attention.
Skin contact	Take off contaminated clothing. Wash contaminated skin with plenty of water. Get medical advice if symptoms of irritation occur.
Eye contact	Immediately flush eyes with plenty of water for about 15 minutes. Avoid strong water stream due to the risk of mechanical damage to cornea. Obtain ophthalmologists' assistance.
4.2. Most important symptoms and effects, both acute and delayed	
The mixture irritates eyes, dusts may cause respiratory tract irritation and result in skin redness. In the event of intake by ingestion, methemoglobinemia may occur with the following symptoms: headache, pressure drop, cardiac arrhythmias, dyspnoea and weakness. When 15% of haemoglobin converts to methemoglobin, cyanosis may occur.	
4.3. Indication of any immediate medical attention and special treatment needed	
Medical personnel ought to diagnose and possibly introduce treatment for methemoglobinemia.	
SECTION 5: FIREFIGHTING MEASURES	
5.1. Extinguishing media	
Suitable extinguishing media	Not flammable. In case of fire involving megAN 33.5, use large amounts of water
Unsuitable extinguishing media	Do not use foam and dry chemical extinguishers.
5.2. Special hazards arising from the substance or mixture	
For more details see item 2.1.	
5.3. Advice for firefighters	
Wear full chemical resistant protective clothing and positive pressure, self contained breathing apparatus.	
SECTION 6: ACCIDENTAL RELEASE MEASURES	
6.1. Personal precautions, protective equipment and emergency procedures	
For non-emergency personnel	
Suitable protective equipment	Depending on exposure route use: • safety goggles or sealed, chemical-resistant protective goggles in the event of exposure to a liquid product, • protective clothing, • dust masks protecting against dust and solid particle aerosols,

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	protective gloves designed for work with hazardous chemicals, with additional mechanical resistance to abrasion and tearing.
Emergency procedures	In case of high concentration of ammonium nitrate dusts evacuate the area of exposure.
For emergency responders	
Wear protective clothing, dust masks, protective gloves, protective goggles.	
6.2. Environmental precautions	
Avoid contamination of watercourses and drains with large amount of ammonium nitrate.	
6.3. Methods and material for containment and cleaning up	
Recommendations for preventing the spread of the spill and its elimination	Small spill and leak: Vacuum or sweep up material. Large spill and leak: Vacuum or sweep up material. Rinse affected area with large amounts of water. Reuse collected product as a fertiliser or give it away for further disposal.
6.4. Reference to other sections	
See section 8 for personal protective equipment and section 13 for waste disposal.	
SECTION 7: HANDLING AND STORAGE	
7.1. Precautions for safe handling	
Follow the OHS rules. Use personal protective equipment. It is forbidden to smoke and carry out work involving the use of an open flame near the fertilizer.	
7.2. Conditions for safe storage, including any incompatibilities	
megAN 33.5 must be stored in accordance with applicable local regulations.	
Storage place requirements:	
- Stored fertilizer should be protected against moisture penetration. Store on a substrate made of non-combustible materials, on a dry and smooth surface without channels, holes and cavities where molten product could be trapped. As bases, you can use wooden pallets in perfect technical condition, not contaminated with petroleum products or ammonium nitrate. - The weight of the product in a stack must not exceed 300 tonnes. Stacks should be at least 1 m away from each other, walls, roofs and heat sources. Ensure access by a vehicle to each stack. - Protect against direct sunlight and temperatures above 30°C.	
Packaging information:	
Fertilizer in flexible Intermediate bulk containers (IBCs) with a unit weight not exceeding 600 kg should be stored in stacks with up to 2 layers. Fertilizer packed in sacks with a unit weight of 750 and 1000 kg must be stored in one layer only.	
Other guidelines:	
Do not store megAN 33.5 together with the materials listed in point 10.5.	

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- Store away from heat sources, hot surfaces and sources of ignition.
- Do not store with fertilizers other than nitrate fertilizers.
- Access to all storage areas should be allowed only to authorized people.

Note: See section 9 for physical and chemical properties.

7.3. Specific end use(s)

megAN 33.5 is used as a mineral fertiliser.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Indicative occupational exposure limit values	Not established
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Biological limit values	Not established
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Ammonium nitrate DNEL (for workers)

Chronic toxicity; systemic effects	Exposure route: dermal	DNEL: 5.12 mg/kg bw/day
Chronic toxicity; systemic effects	Exposure route: inhalation	DNEL: 36 mg/m ³

Ammonium nitrate PNEC

STP	18 mg/l
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8.2. Exposure controls

Eye protection	Safety goggles or sealed, chemical-resistant protective goggles in the event of exposure to a liquid product.
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Skin protection	Wear protective clothing.
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Hand protection	Protective gloves designed for work with hazardous chemicals, with additional mechanical resistance to abrasion and tearing.
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Respiratory system protection	Dust masks protecting against dust and solid particle aerosols.
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Environmental exposure controls	Prevent significant amounts of the product from getting into the municipal water and sewage system and water courses.
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See the attached exposure scenarios for more details.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid
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Colour	From cream to beige
Odour	None
Melting point/freezing point	Ammonium nitrate: 169.6 °C (p = 1013 hPa)
Boiling point or initial boiling point and boiling range	Ammonium nitrate: decomposes at 210 °C
Flammability	Mixture is non - flammable; may intensify fire and oxidation
Lower and upper explosion limit	Not relevant (mixture is not explosive)
Flash point	Not relevant (mixture is non - flammable)
Auto-ignition temperature	Not relevant (mixture is non - flammable)
Decomposition temperature	Ammonium nitrate: $\geq 210^{\circ}\text{C}$
pH	≥ 4.5 (10% aqueous solution of ammonium nitrate)
Kinematic viscosity	Not relevant (solid mixture)
Solubility	Ammonium nitrate: > 100 g/l at 20 °C (in water)
Partition coefficient n-octanol/water (Log Ko/w)	Not relevant (inorganic mixture)
Vapour pressure	No data
Density and/or relative density	Ammonium nitrate: 1.72 at 20 °C (water = 1)
Relative vapour density	Not relevant
Particle characteristics	95% of the product is in the form of granules measuring 2.0 - 5.0 mm.
9.2. Other information	
Information with regard to physical hazard classes	
Mixture is characterized with oxidizing properties. Incapable of detonation according to a test performed in accordance with Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019 laying down rules for making EU fertiliser products available on the market. Substance resistance to detonation transfer is reduced in presence of impurities and/or at high temperature. Heating in enclosed space, especially in presence of materials mentioned in item 10.5. may cause violent uncontrolled reaction or explosion.	
Other safety characteristics	
Ammonium nitrate is highly soluble in pyridine, methanol, liquid ammonia. Limited solubility is observed in solvents such as: ethanol, acetone. The product in the form of granules does not contain particles from the fraction that can be absorbed in the alveoli.	
SECTION 10: STABILITY AND REACTIVITY	
10.1. Reactivity	
The main ingredient of megAN 33.5 is ammonium nitrate, which is unstable when heated to high temperature (see section 5.2.). Ammonium nitrate is characterized with oxidizing properties and therefore reacts violently with combustible and/or reducing agents (see item 10.5). Aqueous solutions of ammonium nitrate are known to	

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act like a weak acids.

10.2. Chemical stability

Product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts violently with combustible materials and/or reducing agents (see item 10.5.).

10.4. Conditions to avoid

Open flame, heating above melting point (see item 9.1.), exposure to atmospheric conditions (see item 7.2.), contact with incompatible materials (see item 10.5.).

10.5. Incompatible materials

Do not store megAN 33.5 with fertilisers other than these specified in point 7.2. and avoid allowing ammonium nitrate to get in contact with materials that may react with it, or are combustible, that is, e.g., pesticides, disinfectants, herbicides, flammable materials, chlorates, hypochlorites, chlorinated organic compounds, bleaches, chromates, organic peroxides, organic compounds, alkalis, acids, sulfur, powdered metals (zinc, copper and copper alloys), organic materials such as hay, straw, oils, greases, grains, and animal fodder.

10.6. Hazardous decomposition products

Ammonia (NH₃), nitrogen oxides (NO_x).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity	Ingredient name	Route	Specie(s)	Result
	Ammonium nitrate (100%)	Inhalation (30 min.)	-	Not relevant
		Ingestion	rat	LD ₅₀ : 2950 mg/kg/bw
		Skin contact	rat	LD ₅₀ : >5000 mg/kg/bw
Skin corrosion/irritation	There is no evidence of skin irritation. Prolonged contact may cause skin redness.			
Serious eye damage/irritation	Mixture causes eye irritation.			
Respiratory or skin sensitisation	There is no evidence for skin or respiratory tract sensitization. No classification.			
Germ cell mutagenicity	There is no evidence for genotoxicity. No classification.			
Carcinogenicity	There is no evidence for carcinogenicity. No classification.			
Reproductive toxicity	There is no evidence for reproductive toxicity. No classification.			

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STOT (<i>Specific target organ Toxicity</i>) - single exposure	Not classified.						
STOT-repeated exposure	Not classified.						
Aspiration hazard	There is no evidence for aspiration hazards.						
Symptoms related to the physical, chemical and toxicological characteristics							
Inhalation	Inhalation of product dusts may cause respiratory tract irritation.						
Ingestion	Ingestion of large amount of product may cause gastro-intestinal disturbances leading to vomiting, diarrhea, methemoglobin creation possibly resulting in cyanosis.						
Skin contact	Prolonged contact may cause skin redness.						
Eye contact	Contact with eye may cause eye irritation.						
Delayed and immediate effects as well as chronic effects from short and long-term exposure							
The mixture irritates eyes, dusts may cause respiratory tract irritation and result in skin redness. In the event of intake by ingestion, methemoglobinemia may occur with the following symptoms: headache, pressure drop, cardiac arrhythmias, dyspnoea and weakness. When 15% of haemoglobin converts to methemoglobin, cyanosis may occur.							
11.2. Information on other hazards							
Endocrine disrupting properties							
No data.							
Other information							
No data.							
SECTION 12: ECOLOGICAL INFORMATION							
12.1. Toxicity							
Short-term (acute) toxicity:							
<table><tr><td>Ingredient name</td><td>Test</td><td>Result</td></tr><tr><td>Ammonium nitrate (100%)</td><td>Fish</td><td>LC₅₀ (48 h): 447 mg/l</td></tr></table>		Ingredient name	Test	Result	Ammonium nitrate (100%)	Fish	LC ₅₀ (48 h): 447 mg/l
Ingredient name	Test	Result					
Ammonium nitrate (100%)	Fish	LC ₅₀ (48 h): 447 mg/l					
12.2. Persistence and degradability							
Biodegradability in case of inorganic chemicals is not required to Regulation (EC) 1907/2006.							
12.3. Bioaccumulative potential							
Bioaccumulation does not occur in case of ammonium nitrate.							
12.4. Mobility in soil							
Based on physico-chemical properties, ammonium nitrate is predicted to have a high mobility in soil.							

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12.5. Results of PBT and vPvB assessment	
PBT and vPvB assessment is not relevant and it is not required for the substances of inorganic type.	
12.6. Endocrine disrupting properties	
No data.	
12.7. Other adverse effects	
Ammonium nitrate is not listed in the Regulation (EU) 2024/590 as the substance potentially depleting the ozone layer.	
SECTION 13: DISPOSAL CONSIDERATIONS	
13.1. Waste treatment methods	
Waste treatment methods	In case of the product spillage, collect the product carefully into closed packaging or containers. If the product has not been mixed with other substances, reuse it as a fertilizer. If the product has been contaminated by other substances, collect the waste into packaging and deliver it directly to an authorised waste collection point for disposal or recovery. Avoid disposal of waste into sewage.
Package waste disposal	Empty product packaging (package waste code: 15 01 02) should be handed over to companies dealing with waste recovery or disposal.
Waste code	02 01 09 - Agrochemical waste other than those mentioned in 02 01 08*. 02 01 08* - Waste agrochemicals containing hazardous substances.
Special precautions	See Section 7 for more details.
Relevant Community provisions	The disposal of this product and its packaging after use must conform to the requirements of environment protection and regulations referring to waste disposal as well as the requirements of local authorities.
SECTION 14: TRANSPORT INFORMATION	
14.1. UN number or ID number	
UN number: 2067	
14.2. UN proper shipping name	
Ammonium nitrate based fertiliser.	
14.3. Transport hazard class(es)	
5.1	
14.4. Packing group	
III	
14.5. Environmental hazards	
Not applicable.	

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14.6. Special precautions for user	
Follow rules and guidelines of the traffic code.	
14.7. Maritime transport in bulk according to IMO instruments	
Product name	Not applicable.
Ship type	Not applicable.
Pollution Category	Not applicable.
SECTION 15: REGULATORY INFORMATION	
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture	
Authorisation	
Material is not subject to authorization according to Annex XIV of Regulation (EC) No. 1907/2006.	
Restrictions	
Ammonium nitrate is subject to following restrictions on the manufacture, placing on the market and use according to Annex XVII of EC Regulation No. 1907/2006: 1. Shall not be placed on the market for the first time after 27 June 2010 as a substance, or in mixtures that contain more than 28% by weight of nitrogen in relation to ammonium nitrate, for use as a solid fertiliser, straight or compound, unless the fertiliser complies with the technical provisions for ammonium nitrate fertilisers of high nitrogen content set out in Annex III to Regulation (EC) No 2003/2003 of the European Parliament and of the Council.	
Other UE regulations	
The main ingredient of megAN 33.5 - ammonium nitrate is listed in Part 1 of Annex I to the Regulation (EU) 2012/18 of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC (also known as the Seveso III Directive). Ammonium nitrate is listed in Annex I to the Regulation (EU) 2019/1148 on the marketing and use of explosives precursors. Acquisition, introduction, possession or use by the general public is restricted. Any suspicious transactions and significant disappearances and thefts must be reported to the National Contact Point within 24 hours of considering or detection.	
15.2. Chemical safety assessment	
Grupa Azoty Zakłady Azotowe „Puławy” S.A. prepared a relevant chemical safety assessment for ammonium nitrate.	
SECTION 16: OTHER INFORMATION	
Changes made	Changing the name, SECTION 12.
<u>Legend to abbreviations and acronyms:</u> Index number - is the nine-digit code that is assigned to chemical substances in part 3 of Annex VI (EC) 1272/2008. EC number - is the seven-digit code that is assigned to chemical substances that are commercially available within the European Union.	

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CAS number - unique numerical identifier assigned by the Chemical Abstracts Service to every chemical substance.

DNEL - is the level of exposure to a substance above which humans should not be exposed.

PNEC - is the concentration below which exposure to a substance is not expected to cause adverse effects for environmental.

LC₅₀ - in toxicology, the median lethal dose, LD₅₀ (abbreviation for "Lethal Dose, 50%"), LC₅₀ (Lethal Concentration, 50%) of a toxic substance or radiation is the dose required to kill half the members of a tested population after a specified test duration.

LD₅₀ - in toxicology, lethal dose (LD) is an indication of the lethality of a given chemical substance. It represents the amount of a material, which results in death of 50% of a group of test animals.

EC₅₀ - effective concentration of a toxic substance at 50% mortality rate of the affected community being observed

Log K_{O/W} - is defined as the ratio of the molar concentrations of a chemical in n-octanol and water, in dilute solution.

K_{O/C} - is defined as the ratio of the molar concentrations of a chemical in organic carbon and water.

References	Chemical Safety Reports for ammonium nitrate and as well for magnesium nitrate were applied during MSDS preparation. Ostra methemoglobinemia - przyczyny, objawy i leczenie /Acute methemoglobinemia - causes, symptoms and medical treatment/ - Tomasz Janus, Jacek Piechock, Anna Janus, /Anestezjologia i Ratownictwo Anaesthesiology and Medical Rescue/ 2015; 9: 327-333
Instruction	Personnel involved in dealing with the substance should be trained and work according to relevant HSE guidelines. Drivers who are responsible for transportation of the substance should be professionally trained in requirements of ADR.

Hazard statements referred to under headings 2 - 15

H272: May intensify fire; oxidizer.

H319: Causes serious eye irritation.

NOTE:

The information in this Safety Data Sheet is given in good faith and belief in its accuracy based on our knowledge of the substance/mixture concerned at the date of publication. It does not imply the acceptance of any legal liability or just responsibility whatsoever by the Company for the consequences of its use or misuse in any particular circumstances.