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_____ № _____
Your ref. _____ Date _____

MATERIAL SAFETY DATA SHEET

Entered in the MSDS Register

MSDS Register No. 0 0 2 0 3 7 8 9 . 2 0 . 7 5 4 1 1

from 12 July 2022

Valid

until 12 July 2027

**Coordinating Informational Center of CIS Member States
on Approximation of Regulatory Practices
Non-commercial Partnership Association**

NAME

technical (as per the Regulatory Documentation)

Azophoska (nitroammophoska) agrochemical grades: NPK 15-15-15, NPK 16-8-16, NPK 16-13-14, NPK 16-16-8, NPK 16-16-16, NPK 17-10-20, NPK 18-8-15, NPK 18-9-20, NPK 20-10-10, NP 20-20, NPK 22-11-11, NP 23-22, NPK 25-9-9, NP 22-20

chemical (as per IUPAC)

None

commercial

Azophoska (nitroammophoska) grades: NPK 15-15-15, NPK 16-8-16, NPK 16-13-14, NPK 16-16-8, NPK 16-16-16, NPK 17-10-20, NPK 18-8-15, NPK 18-9-20, NPK 20-10-10, NP 20-20, NPK 22-11-11, NP 23-22, NPK 25-9-9, NP 22-20

synonyms:

NPK fertilizer, nitrogen-phosphorus-potassium fertilizer

OKPD 2 Code (Russian Classification of Products by Economic Activities)

2 0 . 1 5 . 7 1 . 0 0 0

TN VED EAEU Code (Foreign Economic Activity Commodity Nomenclature)

3 1 0 5

Identification code and name of a regulatory, technical or information document for the product (GOST, TU, OST, STO, (M)SDS)

TU 20.15.71-039-00203789-2021 Azophoska (nitroammophoska)

HAZARDS IDENTIFICATION

Signal word

Warning

Brief (verbal): A moderately hazardous substance in its effect on the human body as per GOST 12.1.007. May be harmful if swallowed. Causes mild irritation in contact with skin. Causes irritation in case of contact with eyes. Low-combustible substance. May pollute environmental media.

Detailed: see 16 attached sections of the MSDS

PRINCIPAL HAZARDOUS CONSTITUENTS	TLV, mg/m ³	Hazard class	CAS No.	EC No.
Ammonium nitrate	N.A.	None	6484-52-2	229-347-8
Potassium nitrate	5	3	7757-79-1	231-818-8

APPLICANT PJSC Acron, Veliky Novgorod
(company name) (city)

Applicant type manufacturer, supplier, seller, exporter, importer
(delete as applicable)

OKPO Code 0 0 2 0 3 7 8 9 Emergency telephone number (8162) 99-62-54

Head of Applicant Organization

First Deputy Executive Director -

Chief Engineer / M. Yu. Yaskevich/

This MSDS meets UN (GHS) ST/SG/AC.10/30 recommendations

- IUPAC** – The International Union of Pure and Applied Chemistry
- GHS** – UN-Recommended Globally Harmonized System of Classification and Labelling of Chemicals (GHS) ST/SG/AC.10/30
- OKPD 2** – Russian Classification of Products by Economic Activities
- OKPO** – The Russian National Classifier of Enterprises and Organizations
- TN VED EAEU** – Foreign Economic Activity Commodity Nomenclature of the Eurasian Economic Union
- CAS No.** – a substance number on the Chemical Abstracts Service Registry
- EC No.** – a substance number on the European Chemicals Agency Registry
- TLV** – a threshold limit value for a chemical substance in the workplace air, mg/m³
- Signal word** – a word used to focus on the hazard level for a chemical product, and selected as required by GOST 31340-2013

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1 Identification of the chemical product and of the manufacturer/supplier	
1.1 Chemical product identifier	
1.1.1 Technical name	Azophoska (nitroammophoska) agrochemical (henceforth NPK) [1]
1.1.2. Brief recommendations for use: (incl. restrictions on use)	NPK is intended for use in agricultural production and in private farm households (retail trade) as mineral fertilizer. [1]
1.2 Information on the manufacturer and/or supplier	
1.2.1 Full official name of the organization	Public Joint Stock Company Acron
1.2.2 Address (mail and legal)	173012, Veliky Novgorod, Novgorod Oblast
1.2.3 Telephone numbers incl. for emergency consultations and time limits:	Telephone number of Administrative Assistant to Executive Director of PJSC Acron: (8162) 99-65-58 from 09:00 to 17:00. 24-hour consultation telephone number: (8162) 99-62-54. Telephone number and address for emergency contact in case of poisoning: House 3, bldg. 7, Bolshaya Sukharevskaya Square, Moscow, 129090 FSI Scientific and Practical Toxicology Center of FMBA of Russia (24-hour), telephone numbers: (495) 628-16-87, 621-68-85.
1.2.4 E-mail	root@vnov.acron.ru
2 Hazards identification	
2.1. General hazard level for chemical product (hazard data classified according to Russian law (GOST 12.1.007-76) and GHS (GOST 32419-2013, GOST 32423-2013, GOST 32424-2013, GOST 32425-2013))	hazard class 3, a moderately hazardous substance in its effect on the human body acc. to GOST 12.1.007. GHS classification: Chemical product with acute toxic effect on the human body, class 5; Chemical product causing skin irritation, class 3; Chemical product causing serious eye damage/irritation, class 2B. [1, 5, 23, 24, 33]
2.2 Information on warning labels as per GOST 31340-2013	
2.2.1 Signal word	Caution [6]
2.2.2 Hazard symbols (signs)	N.A. [6]
2.2.3 Hazard statements: (H-phrases)	H303: May be harmful if swallowed; H316: Causes mild irritation in contact with skin; H320: Causes irritation in contact with eyes. [6]
3 Composition (information on ingredients)	
3.1. General product information	
3.1.1 Chemical name (acc. to IUPAC)	No [7]
3.1.2 Chemical formula	No [7]
3.1.3 General characteristic of the composition (based on the grade range; manufacturing process)	A compound blend of mineral components containing the following ions: nitrate (NO_3^-), ammonium (NH_4^+), calcium (Ca^{2+}), potassium (K^+), chloride (Cl^-), phosphate (H_2PO_4^-). The ions may

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	<p>form the following basic salts: ammonium nitrate, monoammonium phosphate, potassium nitrate, potassium chloride, ammonium chloride, calcium hydrogen phosphate. The blend may also contain conditioning agents.</p> <p>Produced through decomposition of natural phosphates by nitric acid without using phosphoric or sulfuric acids with calcium nitrate tetrahydrate frozen out.</p> <p>Grades: NPK 15 15 15, NPK 16-8-16, NPK 16-13-14, NPK 16-16-8, NPK 16-16-16, NPK 17-10-20, NPK 18-8-15, NPK 18-9-20, NPK 20-10-10, NP 20-20, NPK 22-11-11, NP 23-22, NPK 25-9-9, NP 22-20.</p> <p>NPK containing two nutrient elements falls under 20.15.74.000 OKPD 2 Code; NPK containing three nutrient elements falls under 20.15.71.000 OKPD 2 Code [1]</p>
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3.2 Components

(name, CAS and EC Nos., mass fraction (must be 100% in total), TLV or SRLI for workplace, hazard classes, references to data sources)

Table 1 [4]

Components (name)	Mass fraction, %	Hygiene standards in workplace air		CAS No.	EC No.
		TLV, mg/m ³	Hazard class		
ammonium nitrate	22- 60	N.A.*	None	6484-52-2	229-347-8
monoammonium phosphate (ammonium dihydrogen phosphate)	9.1-29	10(a)	4	7722-76-1	231-764-5
potassium nitrate	3.4-26.4	5(a)	3	7757-79-1	231-818-8
potassium chloride	5.1-26.0	5(a)	3	7447-40-7	231-211-8
ammonium chloride	1.8-13.9	10(a)	3	12125-02-9	235-186-4
calcium hydrogen phosphate	2.5-10.5	10(a)	4	7757-93-9	231-826-1
water	max 0.7	N.A.	None	7732-18-5	231-791-2

Note:

"a" stands for aerosol

*** - recommended concentration in workplace air - 10 mg/m³ [12]

4 First aid measures

4.1. Observed symptoms

4.1.1. If poisoned by inhalation (if inhaled)	Cough, breathing difficulties, headache, retrosternal pain. [2]
4.1.2. In contact with skin	Burning sensation. [1]
4.1.3. In case of contact with eyes	Itching, redness. [1]
4.1.4 If poisoned by oral route (if swallowed)	Dizziness, atony, nausea, vomiting, heart and abdominal pains, cold sweat, fainting, cyanosis, urinary and fecal incontinence. [2]

4.2. Description of first aid measures

4.2.1. If poisoned by inhalation	Immediately remove victim to fresh air and ensure the possibility of unlabored breathing. If it is necessary to get medical attention or take victim to the medical center, have the shipping label or recommendations on agrochemical transportation, use and storage available. [1, 2]
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4.2.2. In contact with skin	Take off contaminated clothing and rinse skin with plenty of running water. If it is necessary to get medical attention or take victim to the medical center, have the shipping label or recommendations on transportation, use and storage available. [1, 2]
4.2.3. In case of contact with eyes	Eye contact: rinse eyes cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue eye washing. If required, seek medical advice. [1, 2, 6]
4.2.4 If poisoned by oral route	If accidentally swallowed, rinse mouth with water, immediately have victim drink 1 or 2 glasses of water with enterosorbent suspension (activated charcoal, Enterumin, Polysorb etc.) following recommendations for their use; then cause vomiting by stimulating the tongue base, following which drink again 1 or 2 glasses of water with sorbent suspension and seek medical advice immediately. [1, 2]
4.2.5 Contraindications	No data available [7]

5 Fire and explosion safety measures and means

5.1. General characteristic of the fire and explosion hazards (acc. to GOST 12.1.044-89)	NPK is explosion-proof. It belongs to low-combustible substances. NPK dust is explosion-proof. [1, 9, 10, 27]
5.2 Fire and explosion hazard data (data range acc. to GOST 12.1.044-89)	Autoignition temperature for air suspension – 450°C. A lower concentration limit for flame spreading is not applicable up to a concentration of 280 g/m ³ . Linear burning rate: $(2.5-16) \times 10^{-4}$ m/s. [9, 25]
5.3. Combustion and/or thermal decomposition products and hazards they cause	NPK is subject to deflagration. Hot spots initiate decomposition that goes along with an exothermic reaction releasing gases and causing a temperature increase in the reaction zone up to (250–500)°C. The released heat is transferred to an adjacent fertilizer portion that has not yet decomposed and that is also heated and initiates a decomposition process. Conditioning agents increase the fertilizer burning rate. The decomposition process releases toxic gases: nitrogen oxides. Nitrogen oxides: cause asphyxia, NO is a blood poison, causes methemoglobinemia. [27, 28]
5.4. Recommended fire extinguishers	Water spray with wetting agents, mechanical air foam. [25]
5.5. Unsuitable fire extinguishers	No data available. [7]
5.6. Personal protective equipment for firefighting (PPE for firefighters)	The fire entry suit (a jacket and trousers with detachable thermal insulation lining) c/w a firefighter rescue belt, gauntlets or gloves, a firefighter's helmet, special safety footwear. The fire entry outfit should meet the requirements of GOST R 53264, GOST R 53269, GOST R 53268, GOST R 53265. [9]
5.7 Special remarks on firefighting	Polymer packing may be involved. Fight fire from maximum possible distance without coming close to burning product. [7]

6 Accidental release measures

6.1. Personal and environmental precautions, protective precautions for buildings, structures, etc. in emergencies

6.1.1. General actions required in emergencies	Isolate the hazardous zone within a radius of min 50 m. Correct the above distance based on the chemical survey findings. Remove unauthorized staff. Enter the hazardous
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	zone wearing personal protective equipment. Follow fire safety rules, do not smoke, remove the source of fire or sparks. Keep to the windward side. Give first aid to casualties. [7]
6.1.2. Personal protective equipment in emergencies (PPE for emergency response teams)	In case of a spill - a dustproof suit, safety footwear, protective headgear, dust respirator, goggles, gauntlets or gloves. In case of ignition - a fire entry suit, oxygen breathing protective mask. [1, 9, 20, 21]
6.2. Procedure for emergency response actions	
6.2.1. Actions to take in case of a leak or spill (incl. remedial actions and environmental precautions)	If packaging is damaged, repack into a container securing product safety and use as intended. If physicochemical properties and consumer performance of spilled product are changed, other substances and materials being present, dispose of product as required by applicable law. Dike spillages (diking), cover with dry inert material; collect in dry containers and seal. Prevent entry of the material into aquifers, water supply sources and other important economic infrastructure. [32]
6.2.2. Actions to take in case of fire	Enter the fire area wearing firefighter protective clothing and a breathing apparatus. Water packed product stored close to the combustion area at a maximum possible distance from the containers to cool them and prevent possible product decomposition and ignition of combustible packaging. Evacuate people depending on where toxic combustion products move. [7]
7 Handling and storage	
7.1 Precautions for safe handling	
7.1.1. Engineering safety measure systems	Available ventilation and exhaust devices in possible dusting area. Use machinery fitted with dusting control devices. [1]
7.1.2. Environmental precautions	Sealing the process equipment, arrangement of exhausts where hazardous emission may occur. The air must be cleaned before it is vented to the atmosphere. After flushing equipment and utility lines, flushing water should be routed to the biotreatment plant. [7, 10, 32]
7.1.3. Safe movement and transportation recommendations	NPK is carried by rail, by road or by water. Non-hazardous goods. Bagged NPK is carried in multipurpose covered railcars and multipurpose containers, on covered decked vessels, in motor vehicles fitted with covering fixtures. If packed in FIBC type disposable flexible containers (big bags) (henceforth FIBCs), NPK is carried in multipurpose covered railcars, in open-top railcars and multipurpose containers; on covered decked vessels, in motor vehicles fitted with covering fixtures. Containers (FIBCs) and multipurpose containers may be carried uncovered by road. In bulk, NPK is carried in specialized hopper cars for transportation of mineral fertilizers, by sea and in motor vehicles fitted with fixtures for covering the product in the vehicle body. [1]
7.2. Conditions for safe storage	

<p>Azophoska (nitroammophoska) agrochemical grades: NPK 15-15-15, NPK 16-8-16, NPK 16-13-14, NPK 16-16-8, NPK 16-16-16, NPK 17-10-20, NPK 18-8-15, NPK 18-9-20, NPK 20-10-10, NP 20-20, NPK 22-11-11, NP 23-22, NPK 25-9-9, NP 22-20.</p> <p>TU 20.15.71-039-00203789-2021</p>	<p>MSDS Register No. 0203789.20.75411 Valid till 12.07.2027</p>	<p>page 7 of 14</p>
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7.2.1. Conditions and time for safe storage (incl. guaranteed storage life, shelf life; substances and materials incompatible in storage)	<p>NPK must be kept in covered, well-ventilated storage facilities that prevent entry of any precipitation, groundwater and meltwater. The stack height when storing bagged NPK must not be more than 10 rows. The stack height when storing NPK packed in containers (FIBCs) must not be more than 2 tiers. The bottom tier (row) of a stack should be placed on flat pallets. The angular deviation of a container (FIBC) from the vertical axis must not be higher than 10°. The storage area should be fitted with firefighting equipment. The guaranteed storage life for NPK for agricultural production is 6 months from the date of production, and 18 months from the date of production for retail trade. The shelf life has no expiry date. Substances and materials incompatible in storage: pesticides, mineral additives, preservatives, fodder and food, flammable substances (oil, carbon, sawdust etc.), organic matter, acids. [1, 2, 10, 32]</p>
7.2.2. Containers and packaging (incl. the materials they are made from)	Polyethylene, polypropylene. Bags, FIBC type disposable flexible containers. [1]
7.3. Precautions and storage regulations for household use	Keep in a dry place, out of reach of children or animals, away from food. [32]

8 Exposure controls/personal protection

8.1. Workplace control parameters (TLV or SRLI for workplace)	TLV nitroammophoska - -/4 mg/m ³ , "a" stands for aerosol, "F" stands for strongly fibrogenic aerosol [1, 2, 4]
8.2 Exposure controls	Fit manufacturing premises and laboratories where NPK is handled with Inflow and exhaust ventilation to ensure that ambient air quality meets the standard. Use machinery fitted with dusting control devices. [1, 13]
8.3. Personal protective equipment for personnel	
8.3.1. General recommendations	<p>Persons who have not passed a health check or have medical contraindications or are not aware of NPK handling regulations are not admitted to work. Do not eat, drink or smoke at work! After handling the product, wash face and hands thoroughly with water.</p> <p>Use personal protective equipment for eyes, hands and skin depending on the kind of work performed. [20, 21]</p>
8.3.2. Respiratory protection (RPE types)	<p>As a precaution against exceeding threshold limit values, use respiratory protection against NPK dust exposure in the workplace.</p> <p>Anti-aerosol RPE, a mask or half mask with replacement filters, respirators. [20, 21]</p>
8.3.3. Protective gear (material, type) (protective clothing, safety footwear, protective gear for hands and eyes)	Cotton suit; leather boots, leather and/or rubber or polyvinyl chloride high boots; rubber or knitted gloves with dotted coating or gloves made from polymer materials and/or combined gauntlets; goggles. [20, 21]
8.3.4. Personal protective equipment for household use	Directions for use of NPK are given on the packaging. When handling the fertilizer, avoid dusting, use rubber gloves or other hand protection. Wash hands with soap and water after work. [7]

9. Physicochemical properties

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9.1 Physical state (state of aggregation, color, odor)	Granules in various shades of white, grey or pink, odorless. [7]
9.2. Parameters indicative of primary properties of product (temperature values, pH, solubility, n-octanol/water partition coefficient and other parameters indicative of this kind of product)	Decomposition temperature > 200°C. Autoignition temperature for air suspension – 450°C. A lower concentration limit for flame spreading is not applicable up to a concentration of 280 g/m ³ . pH (10% solution): 4.5÷4.7 [7, 9, 25]
10. Stability and reactivity	
10.1 Chemical stability (indicate decomposition products for unstable products)	NPK is stable if handling and storage regulations are met. [7]
10.2 Reactivity	Reacts with acids and alkalies. Decomposes if heated. Chlorides and copper act as catalysts for the thermal decomposition reaction. It may facilitate combustion of organic matter at high temperatures from 800°C to 900°C. [2, 10]
10.3 Conditions to avoid (incl. hazardous manifestations in case of contact with incompatible substances and materials)	Sources of ignition, high temperatures. NPK hot spots and contact with flammable substances (oil, carbon, sawdust), acids and other substances (chlorides, copper) may cause thermal decomposition. [2]
11. Toxicological information	
11.1. General information on toxicological effects (hazard (toxicity) level evaluation for effect on the human body and most typical hazard manifestations)	By the extent of its effect on the human body, NPK is regarded as a moderately hazardous substance, hazard class 3 acc. to GOST 12.1.007. May be harmful if swallowed. Causes mild irritation in contact with skin. Causes irritation in contact with eyes. [1, 6]
11.2. Routes of exposure (by inhalation, oral route, skin or eye contact)	If inhaled, if swallowed, in case of skin or eye contact. [2]
11.3. Affected human organs, tissues and systems	Central nervous and respiratory systems, heart, gastrointestinal tract, liver, kidneys, spleen, blood, skin, eyes. [2]
11.4. Information on hazardous human exposure in case of direct contact with this product incl. consequences of such exposure (irritant effect on upper respiratory system, eyes, skin; skin-resorptive and sensitizing actions)	No reliable data. NPK contains ammonium nitrate. Acc. to the PHCBS information card, ammonium nitrate has an irritant effect on eyes and skin and a sensitizing action. Has no skin-resorptive action. NPK contains potassium nitrate. Potassium nitrate has an irritant effect on eyes and skin. [2, 29]
11.5. Information on long-term adverse health effects (reproductive effects, carcinogenicity, mutagenicity, cumulativity and other chronic effects)	No reliable data. NPK may exhibit a fibrogenic action, but allowing for the form it is produced in (granulated product), a fibrogenic action of the product is unlikely. NPK contains ammonium nitrate that is a methemoglobin former. Acc. to the PHCBS information card, ammonium nitrate has a gonadotropic action. Teratogenic and mutagenic actions are not identified; embryotropic and carcinogenic actions have not been studied. NPK contains potassium nitrate. Potassium nitrate has gonadotropic, embryotropic and mutagenic actions. Mutagenicity is not listed by IARC. [2, 29]

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11.6. Acute toxicity characteristics (LD ₅₀), entry route (intragastrical, dermal), animal species; LC ₅₀ , exposure time (h), animal species)	For NPK 15-15-15: Intragastrical, white rat: LD ₅₀ = 4442 mg/kg. For NP 23-22: Intragastrical, white rat: LD ₅₀ = 4238 mg/kg. For ammonium nitrate: Intragastrical, rat: LD ₅₀ = 2950 mg/kg; Dermal, rat: LD ₅₀ = 5000 mg/kg; For monoammonium phosphate: Dermal, rat: LD ₅₀ = 2000 mg/kg; Dermal, rat: LD ₅₀ = 5000 mg/kg; 4 h, rat: LC ₅₀ = 5000 mg/m ³ ; For potassium nitrate: Dermal, rat: LD ₅₀ = 2000 mg/kg; Dermal, rat: LD ₅₀ = 5000 mg/kg; 4 h, rat: LC ₅₀ = 527 mg/m ³ ; [23, 24, 33]
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12. Ecological information

12.1. General characteristic of impact on the natural environment (atmospheric air, water bodies, soil incl. observable signs of exposure)	If used in recommended doses, phytotoxicity does not occur. If the application rates are not met (higher concentrations), it may have a negative impact on the quality of agricultural products and inhabitants of water bodies. If TLV rates for the components in water are not met, organoleptic (odor, flavor), sanitary-toxicological and toxicological properties may change. When TLV for the components in soil is higher, the substances migrate from soil to groundwater and water sources. [4, 7]
12.2. Routes of impact on the environment	Adverse effects for the natural environment are possible if handling, storage, transportation and use regulations are not met, and as a result of accidents and emergencies. [7]

12.3. Key characteristics of impact on the environment

12.3.1. Hygiene standards (threshold limit values in atmospheric air, water incl. fishery water, soil)				
Table 2 [4, 35]				
Components	TLV in atmospheric air or SRLI in atmospheric air, mg/m ³ (LNV ¹ , hazard class)	TLV in water ² or SRLI in water, mg/l (LNV, hazard class)	TLV fish ³ or SRLI fish., mg/l (LNV, hazard class)	TLV in soil or TAC (tentative allowable concentration) in soil, mg/kg (LNV)
NPK	0.3	ammonium ion (expressed as nitrogen): 1.5 org., od., class 4. nitrates (NO ₃ ⁻): 45, san-tox., class 3	ammonium ion (NH ₄ ⁺): 0.5 (expressed as nitrogen - 0.4); for marine water bodies –	nitrates (NO ₃ ⁻): 130.0, water migratory
ammonium nitrate	-/0.3, res., 4			

¹ (LNV) - limiting nuisance value (tox. – toxicological; s.-t. (san-tox.) – sanitary-toxicological; org. – organoleptic with explanation of nature of the change in organoleptic properties of water (od. - changes odor of water, turb. - increases turbidity of water, col.- gives color to water, foam - causes foaming, flm. - forms a film on water surface, flv. - gives a flavor to water, op. - causes opalescence); ref. – reflective; res. – resorptive; ref-res. – reflective-resorptive; fish. – fishery (changed merchantability of commercially important aquatic organisms); gen. – general sanitary).

² Water in water bodies for domestic and social and cultural water uses

³ Water in fishery water bodies (incl. sea ones)

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potassium nitrate	0.05	TLV for chlorides (expressed as Cl ⁻) 350, organoleptic, class 4	2.9 at 13-34 ‰, tox., class 4	
potassium chloride	0.3/0.1, res., 4		nitrate anion (NO ₃ ⁻): 40 (expressed as nitrate nitrogen 9), tox., class 4 c	
ammonium chloride	0.2/0.1, ref-res., class 3		TLV for chloride anion (Cl ⁻) 300.0 (san-tox., 4 e), for marine water bodies – 11900 at 12-18 ‰. (tox., 4)	

12.3.2. Ecotoxicity values
(LC, EC, NOEC etc. for fish (96 h), Daphnia (48 h)
algae (72 or 96 h) etc.)

For ammonium nitrate:
LC50 = 6000 mg/l, 96 h, [Rainbow trout]
EC50 = 490 mg/l, 48 h, [Daphnia magna]
EC50 = 83 mg/l [Green algae]
For potassium nitrate:
LC50 > 100 mg/l, for fish, 96 h
LC50 > 100 mg/l, for aquatic invertebrates, 48 h
EC50 > 100 mg/l, for algae, 72 h
For potassium chloride:
LC50 = 880 mg/l, for fish, 96 h
EC50 = 660 mg/l, 48 h, [Daphnia magna]
EC50 > 100 mg/l, for algae, 72 h [2, 33]

12.3.3. Migration and transformation in
the environment caused by biodegradation
and other processes (oxidation, hydrolysis,
etc.)

NPK transformation information is not available.
Ammonium nitrate contained in NPK becomes transformed in the
environment. Transformation products: nitrogen oxides, ammonia.
[2]

13. Disposal considerations

13.1. Precautions for handling waste
generated by use, storage, transportation

Same precautions as those for handling the core product. See
section 7, 8 of the MSDS. [7]

13.2. Information on area and methods for
neutralization, disposal or destruction of
the product waste incl. containers
(packaging)

If physicochemical properties and consumer performance of product
are changed, other substances and materials being present,
decontaminate, dispose of and destroy product as required by
applicable law.
Dump any used containers. [34]

13.3. Recommendations on removal of
waste generated by household use of
product

Take used containers to controlled waste collection points. [1]

14. Transport information

14.1 UN number
(according to UN Recommendations on the
Transport of Dangerous Goods)

N.A. [1, 13]

14.2. Proper shipping and transport names

Transport name:
Azophoska (nitroammophoska) NPK 15-15-15 grade;
Azophoska (nitroammophoska) NPK 16-8-16 grade;
Azophoska (nitroammophoska) NPK 16-13-14 grade;
Azophoska (nitroammophoska) NPK 16-16-8 grade;
Azophoska (nitroammophoska) NPK 16-16-16 grade;
Azophoska (nitroammophoska) NPK 17-10-20 grade;
Azophoska (nitroammophoska) NPK 18-8-15 grade;

Azophoska (nitroammophoska) agrochemical grades: NPK 15-15-15, NPK 16-8-16, NPK 16-13-14, NPK 16-16-8, NPK 16-16-16, NPK 17-10-20, NPK 18-8-15, NPK 18-9-20, NPK 20-10-10, NP 20-20, NPK 22-11-11, NP 23-22, NPK 25-9-9, NP 22-20. TU 20.15.71-039-00203789-2021	MSDS Register No. 0203789.20.75411 Valid till 12.07.2027	page 11 of 14
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	Azophoska (nitroammophoska) NPK 18-9-20 grade; Azophoska (nitroammophoska) NPK 20-10-10 grade; Azophoska (nitroammophoska) NP 20-20 grade; Azophoska (nitroammophoska) NPK 22-11-11 grade; Azophoska (nitroammophoska) NP 23-22 grade; Azophoska (nitroammophoska) NPK 25-9-9 grade; Azophoska (nitroammophoska) NP 22-20 grade [1]
14.3 Applicable modes of transport	Covered railcars, covered specialized railcars, open-top railcars, multipurpose containers, covered vessels, motor vehicles and tractor trolleys fitted with covering. [1]
14.4. Dangerous goods classification acc. to GOST 19433-88:	
- class	N.A. [1, 14]
- subclass	N.A. [1, 14]
- classification code (acc. to GOST 19433-88 and for railway transportation)	N.A. [1, 14]
hazard sign(s) dwg(s) no(s)	N.A. [1, 14]
14.5 Dangerous goods classification according to UN Recommendations on the Transport of Dangerous Goods:	
- class or subclass	N.A. [1, 13]
- extra hazards	N.A. [1, 13]
- UN Packing Group	N.A. [1, 13]
14.6. Transport labeling (handling symbols as per GOST 14192-96)	"Protect from moisture" handling symbol on bags and flexible containers (big bags). [1]
14.7. Transport emergency cards (for railway, sea and other types of transportation)	N.A. [15-19]
15. Regulatory information (local/international regulations)	
15.1. Local regulations	
15.1.1. Russian Federation laws	Federal Law "On the Sanitary and Epidemiological Welfare of the Population", Federal Law "On Technical Regulation", Federal Law "On Production and Consumption Waste", Federal Law "On the Industrial Safety of Hazardous Production Facilities", Federal Law "On Environmental Protection", Federal Law "On the Protection of Atmospheric Air", Federal Law "On Fire Safety", Federal Law "On Standardization".
15.1.2. Information on documentation regulating human life and environment protection requirements	- Certificate of Registration for Agrochemical No. 3678, valid until: no time limit; - Declaration of Conformity No. ROSS RU D-RU.RA01.V.22178/22, valid until 21.06.2027; - Expert opinion issued by FBES FSCH named after F. F. Erisman of the Rospotrebnadzor No. 21-ref-OI/464-Ag dd. 23.06.2021

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15.2 International conventions and agreements (indicate if this product is regulated by the Montreal Protocol, the Stockholm Convention, etc.)	This product is not regulated by any international conventions or agreements.
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16. Other information

16.1. Date of the latest revision of the MSDS (indicate: "This MSDS is issued for the first time" or "This MSDS is re-registered upon expiration. Previous MSDS Register No..." or "Amendments made to sections..., amendment date...")	This MSDS is issued for the first time
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16.2. List of data sources used in preparing this MSDS⁴

1. TU 20.15.71-039-00203789-2021 Azophoska (nitroammophoska). Specifications
2. PHCBS (potentially hazardous chemical and biological substances) information card. Ammonium nitrate. Certificate of Registration, Series AT No. 000054 dd. 15.06.1994.
3. GOST 12.3.037-84 Occupational safety standards system. Noxious substances. Classification and general safety requirements.
4. SanPiN 1.2.3685-21 "Hygiene standards and requirements for ensuring safety and (or) harmlessness of the environmental factors to humans". Decree No. 2 dd. 28.02.2021 issued by Chief State Sanitary Physician of the Russian Federation.
5. GOST 32423-2013 Hazard classification for mixed chemical product in its effect on the human body.
6. GOST 31340-2013 Labelling of chemicals. General requirements
7. Information possessed by this MSDS's author
8. Order No. 169n dd. 05.03.2011 issued by the Ministry of Health and Social Development of the Russian Federation On approval of the requirements for furnishing first aid kits with medical devices
9. Technical Guidelines on Fire Safety Requirements No. 123-FZ, dd. 22.07.2008, Article 133
10. GOST 19691-84 Nitroammophoska. Specifications
11. Transport emergency cards for dangerous goods carried by railways of the CIS, the Republic of Latvia, the Republic of Lithuania, the Republic of Estonia. Approved by the Council for Rail Transport of the Commonwealth Member States, Protocol No. 48 dd. 30.05.2008.
12. GOST 2-2013 Ammonium nitrate. Specifications
13. Recommendations on the Transport of Dangerous Goods. Model Regulations. Twenty-first edition. UN, New York and Geneva, 2019.
14. GOST 19433-88 Dangerous goods. Classification and labelling
15. RD 31.15.01-89 International Maritime Dangerous Goods Code (IMDG Code). Adopted by Order No. 56 dd. 03.05.1989 issued by the Ministry of the Maritime Fleet of the Soviet Union.
16. Rules for carriage of goods by road. Decree No. 2200 dd. 21.12.2020 issued by the Government of Russia.
17. Rules for carriage of dangerous goods by rail. Approved by the Council for Rail Transport of the Commonwealth Member States. Protocol No. 15 dd. 05.04.1996. As amended on 23.11.07, 30.05.08, 22.05.09.
18. The European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), UN, New York and Geneva, 2008.
19. International Maritime Dangerous Goods Code (IMDG Code)
20. Standard specifications for free issue of protective clothing, safety footwear and other personal protective equipment to employees working at chemical factories and performing work in harmful and (or) dangerous work environment and also performing work under special temperature conditions or in contaminated environment. Order No. 906n dd. 11.08.2011 issued by the Ministry of Health and Social Development of the Russian Federation

⁴ The sequential numbers of data sources are given in each section of this MSDS as references.

Azophoska (nitroammophoska) agrochemical grades: NPK 15-15-15, NPK 16-8-16, NPK 16-13-14, NPK 16-16-8, NPK 16-16-16, NPK 17-10-20, NPK 18-8-15, NPK 18-9-20, NPK 20-10-10, NP 20-20, NPK 22-11-11, NP 23-22, NPK 25-9-9, NP 22-20. TU 20.15.71-039-00203789-2021	MSDS Register No. 0203789.20.75411 Valid till 12.07.2027	page 13 of 14
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21. Standard specifications for free issue of certified protective clothing, safety footwear and other personal protective equipment to employees in the agricultural and water management industries performing work in harmful and (or) dangerous work environment and also performing work under special temperature conditions or in contaminated environment. Order No. 416n dd. 12.08.2008 issued by the Ministry of Health and Social Development of the Russian Federation
22. GOST 14192-96. Marking of cargoes
23. Expert opinion issued by Federal State-Funded Healthcare Institution Hygiene and Epidemiology Center in St. Petersburg based on the sanitary and epidemiological examination on non-food product: "Azophoska (nitroammophoska) agrochemical NP 23-22 grade" No. 78-20-09.006.L.26223 dd. 16.07.2021 and Protocol No. 11280 dd. 12.07.2021.
24. Expert opinion issued by Federal State-Funded Healthcare Institution Hygiene and Epidemiology Center in St. Petersburg based on the sanitary and epidemiological examination on non-food product: "Azophoska (nitroammophoska) agrochemical NPK 15-15-15 grade" No. 78-20-09.006.L.26226 dd. 16.07.2021 and Protocol No. 11282 dd. 12.07.2021.
25. A. Ya. Korolchenko Fire and explosion hazards for substances and materials and appropriate firefighting equipment. Vol. 2. – Moscow, Pozhnauka, 2004
26. Technical statement issued by OOO Expert Center of Railcar Builders No. 502511-21/ETS dd. 22.10.2021 on assessment of compliance of TU 20.15.71-039 00203789 2021 "Azophoska (nitroammophoska). Specifications with regulatory documents specifying the requirements for transportation of goods by rail in the Russian Federation, Saint Petersburg.
27. Phosphorus-containing fertilizers. V. N. Kochetkov. Handbook, edited by Sokolovsky, Moscow, Khimiya, 1982
28. Hazardous substances in the environment. Under the general editorship of V. A. Filov, NPO (Scientific & Legal Union) Professional, 2007
29. PHCBS information card for potassium nitrate. Certificate of Registration, Series AT No. 000493 dd. 30.05.1995
30. Expert opinion issued by FBES FSCH named after F. F. Erisman of the Rospotrebnadzor based on the toxicological-hygienic assessment for Azophoska (nitroammophoska) agrochemical grades: NPK 15-15-15, NPK 16-8-16, NPK 16-13-14, NPK 16-16-8, NPK 16-16-16, NPK 17-10-20, NPK 18-8-15, NPK 18-9-20, NPK 20-10-10, NP 20-20, NPK 22 11 11, NP 23 22, NPK 25-9-9, NP 22-20 dd. 23.06.2021.
31. Recommendations for transportation, use and storage of the agrochemical.
32. GOST 12.3.037-84 Occupational safety standards system. Use of fertilizers in agriculture and forestry. General safety requirements
33. <https://echa.europa.eu/> (European Chemicals Agency)
34. SP 2.2.3670-20 "Sanitary and epidemiological requirements for working environment". Decree No. 40 dd. 02.12.2020 issued by Chief State Sanitary Physician of the Russian Federation.
35. Water quality standards for fishery water bodies including standards for threshold limit values for hazardous substances in waters of fishery water bodies. Approved by Order No. 552 dd. 13.12.2016 issued by Ministry of Agriculture of the Russian Federation.

Head of Export Market Department
PJSC "Acron"



S.L. Lugovskoy