



DAMAS DOMINUS
GENERAL TRADING

Product Catalog

**INNOVATIVE
SOLUTIONS
AT YOUR SIDE**



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A global leader

in the production
of mineral fertilisers
and chemical products

Key advantages

- advanced production processes
- modern technologies
- robust and flexible business model
- global presence
- high quality products
- large-scale investment programme

Our mission:

We are a global leader unifying the full spectrum of fertiliser production and innovative agricultural solutions. We are at the forefront of the drive to produce reliable harvests with the capacity to feed people today and for generations to come



A world without
hunger is more
than just a dream.
It is our mission

A close-up photograph of a wheat stalk, showing the green glumes and the golden-brown awns. The background is a blurred field of similar wheat stalks under a soft, golden light. A white, rounded rectangular text box is positioned in the lower-left quadrant of the image.

**Because everyone in the world
needs food**

MINERAL FERTILISERS FOR AGRICULTURE 9



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PRODUCTS FOR INDUSTRIAL CHEMISTRY 78



Products:

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● other	103

MINERAL FERTILISERS FOR AGRICULTURE



MINERAL FERTILISERS FOR AGRICULTURE

N/NS/NP	Nitrogen
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NPK/NPKS	Granular complex
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RM	Raw materials
Urea microprilled	46

WS	Water-soluble
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SOLAR NPK micro Finisher 3:11:38+MgO, 3:11:38+4MgO+TE, 12:6:36+2.5MgO+TE, 15:7:30+3MgO+TE	57

WS	Water-soluble	
Complex +Amino		
SOLAR NPK micro		
Starter 13:40:13+TE+Amino,		
Universal 20:20:20+TE+Amino,		
Finisher 12:6:36+2.5MgO+TE+Amino	58	
Complex +Stim		
SOLAR Ня PK micro		
Starter 13:40:13+TE+Stim,		
Universal 20:20:20+TE+Stim,		
Finisher 12:6:36+2.5MgO+TE+Stim	59	
Complex fertilisers +BioSurf		
SOLAR NPK micro		
Starter 13:40:13+TE+BioSurf,		
Universal 20:20:20+TE+BioSurf,		
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Potassium chloride	74	
Services	76	

LEGEND



Suitable for greenhouse applications



Suitable for foliar application



Embedding into the soil is required



Products do not contain sodium, chlorine or heavy metals



Can be used in fertiliser blends



Can be used in irrigation systems



Suitable for first half of the growing season



Suitable for soil application



Seed treatment



Improved physical and chemical properties to ensure even distribution of fertilisers across the entire spreading width



Suitable for basal application



Low carbon footprint



Suitable for UAVs application



Conformance to GOST R 58658-2019 – Fertiliser with Improved Characteristics

A close-up photograph of green rice panicles, likely in a paddy field. The panicles are covered in small, clear water droplets, which catch the light and create a bokeh effect in the background. The rice leaves are a vibrant green, and the overall scene is bathed in soft, natural light.

N/NS/NP

Nitrogen fertilisers

Packaging and storage:



bags



big bags



in bulk



Upon request, ammonium nitrate can be treated with an anti-caking agent (not suitable for greenhouse application).

Store in a dry insulated place, away from moisture and direct sunlight.

Ammonium nitrate (AN)

N 34.4

Versatile highly concentrated nitrogen fertiliser containing ammonium and nitrate forms of nitrogen in equal amounts for extended plant nutrition.

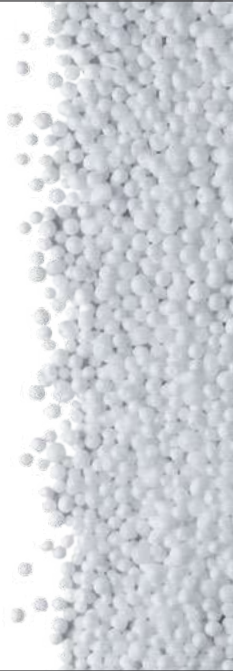
Suitable for direct application to the soil and in fertiliser blends. Excellent physical and chemical characteristics to facilitate storage and application.

Fully water-soluble.

Most effective in the early stages of plant development. Recommended to apply before flowering

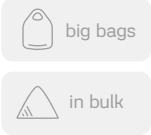


Appearance	white or slightly coloured granules
Mass fraction of total nitrogen (N), % including mass fraction of:	34.4
– ammonium nitrogen	17.2
– nitrate nitrogen	17.2
Particle size distribution, %	
Mass fraction of granules:	
– sized under 1 mm, max	3
– sized 1-4 mm, min	95
– sized over 6 mm	0
Friability, %	100





Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

Stabilised ammonium nitrate (SAN)

NP 33:3

Versatile highly concentrated nitrogen fertiliser containing a small amount of the mobile phosphorus to support the initial stages of plant growth and development.

Contains ammonium and nitrate forms of nitrogen in equal amounts for extended plant nutrition. Contains phosphates in a water-soluble and readily available form.

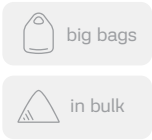
Excellent physical and chemical characteristics to facilitate storage and application.

Suitable for all soils and crops. Most effective at the first, earliest top-dressing of winter crops.



Appearance	white granules
Mass fraction of total nitrogen (N), %	33
including mass fraction of:	
– ammonium nitrogen	16.5
– nitrate nitrogen	16.5
– digestible phosphates in terms of P ₂ O ₅ , %, min	3
Particle size distribution, %	
Mass fraction of granules:	
– sized under 1 mm, max	3
– sized 1-4 mm, min	95
– sized over 6 mm	0
Friability, %	100

Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

Sulphonitrate

NS 30:7

Nitrogen fertiliser with optimally balanced N:S ratio. Effective for most crops on all soil types.

Contains sulphur in a water-soluble sulphate form to improve the quality of agricultural products (increases oil content in oilseeds and protein content in cereals) and promote nitrogen absorption.

The 18% to 12% ratio of ammonium and nitrate forms of nitrogen reduces leaching losses and extends nutrition effect*. The granular form allows even distribution of the fertiliser across soil surface during application.

Improves absorption of phosphorus by the plant and supports extraction of phosphates accumulated in the soil. Improved physical and chemical characteristics (no caking and no dusting).

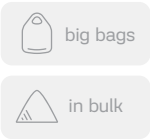


Appearance	white or yellowish-gray granules
Mass fraction of total nitrogen (N), % including mass fraction of:	30
– ammonium nitrogen	18
– nitrate nitrogen	12
– sulphate sulphur in terms of S, min, %	7
Particle size distribution, %	
Mass fraction of granules with size, mm	
– sized under 1 mm, max	3
– sized 1-5 mm, min	90
– sized over 6.3 mm	0
Friability, %	100





Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

Calcium ammonium nitrate (CAN)
27N+12CaO

Physiologically neutral nitrogen fertiliser.
A safety benchmark for nitrogen-rich fertilisers.

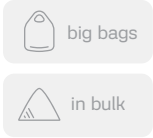
Contains equal amounts of ammonium and nitrate forms of nitrogen for extended plant nutrition. The presence of calcium carbonate prevents soil acidification. Calcium contributes to the development of the root system and increases disease and pest resistance.

Excellent physical and chemical characteristics to facilitate storage and application.
Recommended for all types of soils at pH less than 6.5.
Used for all crops, especially for roots and tubers, fruits and berries.



Appearance	white-grey granules
Mass fraction of total nitrogen (N), %	27
including mass fraction of:	
– ammonium nitrogen	13.5
– nitrate nitrogen	13.5
– calcium in terms of CaO, %	12
– calcium nitrate, %, max	1
Particle size distribution, %	
Mass fraction of granules with size, mm	
– sized under 1 mm, max	3
– sized 1-5 mm, min	90
– sized over 6.3 mm	0
Friability, %	100

Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

Calcium ammonium nitrate with sulphur (CNS)

NS 27:4+8CaO

Highly effective calcium-containing nitrogen fertiliser with sulphur.

Contains ammonium and nitrate forms of nitrogen for extended plant nutrition. Contains sulphur in a water-soluble sulphate form to improve the quality of agricultural products (increases oil content in oilseeds and protein content in cereals and grain legumes).

Calcium contributes to the development of the root system and increases disease and pest resistance.

Excellent physical and chemical characteristics to facilitate storage and application.

Suitable for all soils and crops (requires embedding into the soil). Most effective as supplementary fertiliser for oilseeds, cereals, fodder crops, and root crops.



Appearance	white-grey granules
Mass fraction of total nitrogen (N), % including mass fraction of:	27
– ammonium nitrogen	13.5
– nitrate nitrogen	13.5
– sulphate sulphur in terms of S, %, min	4
– calcium in terms of CaO, %, min	8
– calcium nitrate, %, max	1
Particle size distribution, %	
Mass fraction of granules with size, mm	
– sized under 1 mm, max	3
– sized 1-5 mm, min	90
– sized over 6.3 mm	0
Friability, %	100





Packaging and storage:

 bags

 big bags



The product is a strong acid-forming fertiliser: systematic application acidifies the soil solution and it is therefore recommended to combine it with neutral fertilisers and check soil pH annually.

Store in a dry insulated place, away from moisture and direct sunlight.

Ammonium sulphate (AS)

NS 21:24

Granular nitrogen fertiliser with high sulphur content suitable for all soils and crops.

Contains ammonium nitrogen resistant to leaching and easily digestible sulphur in a water-soluble sulphate form.

An optimal fertiliser for main application. Also suitable for supplemental root feeding of winter crops, hayfields and pastures, oilseeds, cabbages, and crops with high demand for sulphur.

Reduces the loss of nitrogen from leaching on light-textured soils. Highly efficient on soils with a low content of mobile sulphur.

Basal application will be effective in the no leaching water regime.



Appearance	white granules
Mass fraction of total nitrogen (N), % including mass fraction of:	21
– ammonium nitrogen	21
– sulphate sulphur in terms of S, %, min	24
Particle size distribution, %	
Mass fraction of granules, mm	
– sized under 1 mm, max	3
– sized 1-4 mm, min	80
– sized over 6 mm	0
Friability, %	100

Packaging and storage:

 bags

 big bags

 in bulk



Upon request, urea can be treated with an anti-caking agent

Store in a dry insulated place, away from moisture and direct sunlight.

Urea

N 46.2

The most concentrated nitrogen fertiliser. Extended nitrogen nutrition for the plant.

Requires embedding into the soil immediately after application.

Fully water-soluble. Suitable for irrigation systems and foliar application.



Appearance	white granules
Mass fraction of total nitrogen (N), %	46.2
Mass fraction of biuret, %, max	1.4*
Particle size distribution, %	
Mass fraction of granules:	
– sized under 1 mm, max	5(3)*
– sized 1-4 mm, min	94
– sized over 6 mm	0
Friability, %	100

* varies for different production facilities





Packaging and storage:



big bags

Store in a dry insulated place, away from moisture and direct sunlight.

Urea ammonium sulphate (UAS)

NS 40:6, NS 34:12

Universal nitrogen fertiliser with high sulphur availability.

The composition contains a prolonged nitrogen in amid form, as well as an ammonium form of nitrogen and sulphur in a water-soluble sulphate form.

The use of urea ammonium sulphate improves the commodity indicators of product quality, in particular – increasing the content of protein in grains and oil content in oilseeds, as well as increasing the general yield of sulphur demanding crops.

Fertiliser is suitable for main and pre-sowing application, as well as foliar supplementary feeding of agricultural crops. It is recommended to embed fertiliser for decreasing its loss.

Excellent physical and chemical characteristics to facilitate storage and application.



	40:6	34:12
Appearance	white or slightly coloured granules	
Mass fraction of total nitrogen (N), % including mass fraction of:	40	34
– ammonium nitrogen	5	11
– ureic nitrogen	35	23
– sulphate sulphur in terms of S, %, min	6	12
Particle size distribution, %		
Mass fraction of granules:		
– sized under 1 mm, max	10	10
– sized 1-4 mm, min	90	90
– sized over 6 mm	0	0
Friability, %	100	100

Packaging and storage:



tank cars

The fertiliser is transported in specialised tank cars and lorries (in line with applicable hazardous cargo transportation regulations) and via pipelines. It is stored in above-ground tanks in accordance with state technical supervision rules, and safety regulations on liquid ammonia above-ground storage facilities as per GOST 12.1.004.

Anhydrous liquefied ammonia

N 82

The most concentrated ballast-free nitrogenous fertiliser.

Recommended for all soil types and crops.

Applied as a main and at-sowing fertiliser, and is also used for supplementary feeding during inter-row tillage.

Applied by special machines to at least 12-15 cm below ground level.

Creates no health risks if used and handled correctly.



Appearance:	clear colourless liquid
Mass fraction:	
– ammonia, %, min	99.6
– nitrogen, %, min	82
– water (evaporation residue), %	0.2 – 0.4





Packaging and storage:



The fertiliser is transported in specialised tank cars and lorries (in line with applicable hazardous cargo transportation regulations) and via pipelines. It is stored in above-ground tanks in accordance with state technical supervision rules, and safety regulations on liquid ammonia above-ground storage facilities as per GOST 12.1.004.

Technical grade aqueous ammonia (ammonia water)

N 20,5

A nitrogenous fertiliser – a water solution of ammonia. Contains 20.5% of nitrogen.

Can be used as a main fertiliser. Also applied during sowing and supplementary feeding to the centre of the inter-row space to tilled crops.

Applied only by qualified personnel of specialised organisations using special equipment.

Creates no health risks if used and handled correctly.



Appearance	clear colourless or yellowish liquid
Mass fraction:	
– ammonia, %, min	25.0
– nitrogen, %, min	20.5
Mass concentration:	
– non-volatile residue, max	not regulated
– carbon dioxide, g/dm ³ , max	8

A wide-angle photograph of a lush green soybean field at sunset. The rows of plants stretch towards the horizon, where a few distant structures and a small white object are visible. The sky is a soft gradient of orange and yellow.

P/NP/NP(S)

Phosphate fertilisers

NP 22:20

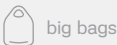
Versatile granular highly concentrated nitrogen-phosphorus fertiliser with sulphur content.

Contains 2% of sulphur in an easily digestible sulphate form.

Suitable for basal application on potassium-rich soils with no leaching water regime. Well suited for pre-sowing or at-sowing application on all crops.

Recommended for top-dressing of fruit and berry crops.

Packaging and storage:



big bags



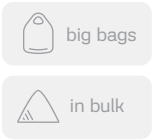
in bulk

Store in a dry insulated place, away from moisture and direct sunlight.



Appearance	grey granules
Mass fraction of total nitrogen (N), %, including mass fraction of:	22
– ammonium nitrogen, %	13
– nitrate nitrogen, %	9
– total phosphates in terms of P ₂ O ₅ , %	20
– digestible phosphates in terms P ₂ O ₅ , %	20
– sulphate sulphur in terms of S, %, min	2
Particle size distribution, %	
Mass fraction of granules, mm	
– sized under 1 mm, max	3
– sized 1-4 mm, min	90
– sized over 6 mm	0
Friability, %	100

Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

Monoammonium phosphate (MAP)

NP 10:46, NP 10:48, NP 12:49, NP 12:52

Versatile granular highly concentrated nitrate-free nitrogen-phosphorus fertiliser.

Contains phosphates in readily available form.

Suitable for direct application to the soil and in fertiliser blends on all soils and crops. Especially for cereals, root crops, rapeseed, sugarcane, and as top-dressing for fruit and berry crops.

Recommended for at-planting application. Also effective as basic fertiliser on soils with low levels of available phosphorus.

Especially effective on cereals, root crops, rapeseed, sugarcane, and as a top-dressing for fruit and berry crops.

Excellent physical and chemical characteristics to facilitate storage and application.



	10:46	10:48	12:49	12:52
Appearance	grey granules			
Mass fraction of total nitrogen (N), %, including mass fraction of:	10	10	12	12
– ammonium nitrogen, %	10	10	12	12
– total phosphates in terms of P ₂ O ₅ , %	46	48	49	52
– digestible phosphates in terms P ₂ O ₅ , %	45	47	48	50
Particle size distribution, %				
Mass fraction of granules, mm				
– sized under 1 mm, max	2	3	3	3
– sized 1-6 mm, min	97	97	-	-
– sized 2-5 mm, min	-	-	97	90
– sized over 6 mm	0	0	0	0
Friability, %	100	100	100	100





Packaging and storage:



big bags



in bulk

Store in a dry insulated place, away from moisture and direct sunlight.

NP(S) 14:34(8), 16:20(12), 20:20(14)

Versatile granular highly concentrated nitrate-free nitrogen-phosphorus fertiliser with high sulphur content.

Contains phosphates in readily available form and nitrogen in ammonium form for a long-term effect. The sulphur content in the fertiliser promotes active growth of plants, increases their immunity and viability, and increases the overall product quality through increased protein content. Additionally, sulphur content improves absorption of nitrogen through synergy effects of both elements.

Suitable for direct application to the soil and in fertiliser blends on all types of soils and crops, especially for cereals, root crops, rapeseed, sugarcane, and as a top-dressing for fruit and berry crops. Also recommended for at-planting application. Effective basic fertiliser on soils with low levels of available phosphorus and high fraction of available potassium.

While NP(S) 14:34(8) is recommended for application as main fertiliser on soils with low intensity water flow in autumn, NP(S) 20:20(14) and 16:20(12) is recommended to be applied on all kinds of soils in spring.

Excellent physical and chemical characteristics facilitate storage and application.

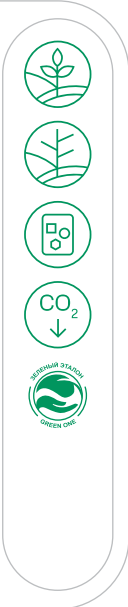


	14:34(8)	16:20(12)	20:20(14)
Appearance	granules from white to grey in color with various shades		
Mass fraction of total nitrogen (N), %, including mass fraction of:	14	16	20
- ammonium nitrogen, %	14	16	20
- total phosphates in terms of P ₂ O ₅ , %	34	20	20
- digestible phosphates in terms P ₂ O ₅ , %	33	20	20
- sulphate sulphur in terms of S, % min	8	12	14
Particle size distribution, %			
Mass fraction of granules, mm			
- sized under 1 mm, max	3	3	3
- sized 1-5 mm, min	90	90	90
- sized over 6 mm	0	0	0
Friability, %	100	100	100



K

Potash
fertilisers



Packaging and storage:

-  bags
-  big bags
-  in bulk

Store in a dry insulated place, away from moisture and direct sunlight.

Pink Granular MOP 60% K₂O

The most concentrated straight potassium fertiliser in granular form.

Ideal source of potassium for all chloride-tolerant crops and soil types.

Suitable for both straight application and bulk blending.

Excellent granulometric characteristics and granule strength.



Appearance	compacted irregularly shaped granules of greyish-white or varoius shades of red-brown colour
Mass fraction of:	
– potassium chloride, %, min	95
– water-soluble potassium oxide (on K ₂ O basis), %, min	60
– sodium chloride (NaCl), %*	3.1
– moisture content, %, max	0.5
Granulometric composition, %:	
– sized over 4 mm, max	10
– sized under 2 mm, max	10
– sized under 1 mm, max	2
– sized under 0.5 mm, max	0.5

* typical

Packaging and storage:

-  bags
-  big bags
-  in bulk

Store in a dry insulated place, away from moisture and direct sunlight.

Pink Standard MOP 60% K₂O

Straight potassium fertiliser for direct application and fertilisers manufacture.

Suitable for all chloride-tolerant crops and soil types.

Suitable for straight application.

Used for production of complex fertilisers.



Appearance	compacted irregularly shaped powder of greyish-white or various shades of red-brown color or large crystals of greyish-white color
Mass fraction of:	
– potassium chloride, %, min	95
– water-soluble potassium oxide (on K ₂ O basis), %, min	60
– sodium chloride (NaCl), %*	2.9
– magnesium (Mg), %*	0.01
– calcium (Ca), %*	0.16
– moisture content, %, max	0.5
Granulometric composition, %	
– sized over 1.7 mm, max	0 – 5.6
– sized over 1 mm, max	6 – 28
– sized over 0.63 mm, max	28 – 55
– sized over 0.4 mm, max	48 – 74
– sized over 0.25 mm, max	65 – 89
– sized over 0.2 mm, max	73 – 93
– sized over 0.1 mm, max	87 – 99

* typical





Packaging and storage:



bags



big bags



in bulk

Store in a dry insulated place, away from moisture and direct sunlight.

White Standard MOP
60%/62% K₂O

High-purity water-soluble potassium fertiliser for fertilisers manufacture.

Used for production of complex and potassium fertilisers (potassium nitrate, potassium sulphate).

Suitable for production of liquid fertilisers.

	60% K ₂ O	62% K ₂ O
Appearance	small crystals of greyish-white color	
Mass fraction of:		
– potassium chloride, %, min	95	98.2
– water-soluble potassium oxide (on K ₂ O basis), %, min	60	62
– sodium chloride (NaCl), %*	2.3	1.5
– magnesium (Mg), ppm*	40	40
– calcium (Ca), ppm*	150	150
– moisture content, %, max	0.5	0.5
– insolubles in water, %*	0.01	0.01
Granulometric composition, %		
– sized over 1.7 mm	0 – 0.1	0 – 0.1
– sized over 1 mm	2 – 7	2 – 7
– sized over 0.63 mm	21 – 38	21 – 38
– sized over 0.4 mm	59 – 82	59 – 82
– sized over 0.2 mm	94 – 99	94 – 99
– sized over 0.1 mm	99 – 100	99 – 100

* typical



Packaging and storage:

-  bags
-  big bags
-  in bulk

Store in a dry insulated place, away from moisture and direct sunlight.

White Fine MOP 60%/62% K₂O

High-purity water-soluble potassium fertiliser for fertilisers manufacture.

Used for production of complex and potassium fertilisers (potassium nitrate, potassium sulphate). Suitable for production of liquid fertilisers.



	60% K ₂ O	62% K ₂ O	
		Grade A	Grade B
Appearance	crumbly crystalline	product white in color	
– potassium chloride, min, %	95	98.2	98.2
– water-soluble potassium oxide (on K ₂ O basis), min, %	60	62	62
– sodium chloride, %	2.7*	1.3 (max)	1.6 (max)
– magnesium (Mg), %*	80	40	40
– calcium (Ca), %*	180	120	120
– sulphate (SO ₄ ²⁻), %*	-	300	300
– moisture content, max, %	1	0.5	0.5
– insolubles in water, %*	0.04	0.04	0.04
Granulometric composition, %			
– sized over 1 mm, max	0 – 1	0 – 1	0 – 1
– sized over 0.63 mm, max	0 – 2	0 – 2	0 – 2
– sized over 0.4 mm, max	3 – 16	3 – 16	3 – 16
– sized over 0.2 mm, max	35 – 70	35 – 70	35 – 70
– sized over 0.1 mm, max	84 – 99	84 – 99	84 – 99
– sized over 0.063 mm, max	96 – 99	96 – 99	96 – 99

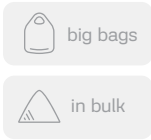
* typical



NPK/NPKS

Granular
complex fertilisers

Packaging and storage:



Granules can be colored in pink and blue.



Various trace elements can be added to all NPK grades.

Store in a dry insulated place, away from moisture and direct sunlight.

NPK 15:15:15, NPKS 15:15:15:11,
NPK 16:16:16

Granular complex fertilisers with balanced composition of key nutrients.

The 11% sulphur content in NPKS 15:15:15:11 supports the quality of agricultural products (increases the protein content in cereals and oil content in oilseeds).

Suitable for all types of soil. Optimal for pre-sowing or at-sowing application for all types of crops.

With their consistent nutrient composition in each granule these complex NPK fertilisers ensure uniform distribution of all nutrients across the field.



	15:15:15	15:15:15:11	16:16:16
Appearance	white to various shades of grey or pink granules		
Mass fraction of total nitrogen (N), %	15	15	16
Including mass fraction of:			
– ammonium nitrogen, %	8	15	8
– nitrate nitrogen, %	7	-	8
– total phosphates in terms of P ₂ O ₅ , %	15	15	16
– digestible phosphates in terms of P ₂ O ₅ , %, min	15	15	16
– potassium in terms of K ₂ O, %	15	15	16
– sulphate sulphur in terms of S, %, min	-	11	-
Particle size distribution, %			
Mass fraction of granules, mm			
– sized under 1 mm, max	3	3	3
– sized 1-5 mm, min	90	90	90
– sized over 6.3 mm	0	0	0
Friability, %	100	100	100





Packaging and storage:



big bags



in bulk

Store in a dry insulated place, away from moisture and direct sunlight.

**NPKS 21:10:10:2, NPKS 21:17:3:3
NPKS 22:7:12:2**

Granular complex NPKS fertilisers with high nitrogen content.

Fully provides mineral nutrition for the plants due to the balanced composition of essential elements. The presence of ammonium and nitrate forms of nitrogen provides a prolonged effect of the fertiliser. The presence of phosphorus, potassium and sulphur allows for more efficient absorption of nitrogen, reducing its loss from leaching.

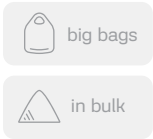
Suitable for all types of soils and all crops, optimally as basic fertiliser on soils with a high content of mobile phosphorus and potassium. Effective for top-dressing of perennial grasses, hayfields and pastures. Suitable for inter-row top-dressing on perennial plantations and fruits.

With their consistent nutrient composition in each granule these complex NPKS fertilisers ensure uniform distribution of all nutrients across the field.



	21:10:10:2	21:17:3:3	22:7:12:2
Appearance	pink, light pink or light brown granules		
Mass fraction of total nitrogen (N), % including mass fraction of:	21	21	22
- ammonium nitrogen	11	13	12
- nitrate nitrogen	10	8	10
- total phosphates in terms of P ₂ O ₅ , %	10	17	7
- digestible phosphates in terms of P ₂ O ₅ , %, min	10	10	7
- potassium in terms of K ₂ O, %	10	3	12
- sulphate sulphur in terms of S, %, min	2	3	2
Particle size distribution, % Mass fraction of granules, mm			
- sized under 1 mm, max	3	3	3
- sized 1-5 mm, min	90	90	90
- sized over 6.3 mm	0	0	0
Friability, %	100	100	100

Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

NPKS 24:6:12:1, NPKS 27:6:6:2

Granular complex NPKS fertilisers with high nitrogen content.

Fully provides mineral nutrition for the plants due to the balanced composition of essential elements. The presence of ammonium and nitrate forms of nitrogen provides a prolonged effect of the fertiliser. The presence of phosphorus, potassium and sulphur allows for more efficient absorption of nitrogen, reducing its loss from leaching.

Suitable for all types of soils and all crops, optimally as basic fertiliser on soils with a high content of mobile phosphorus and potassium. Effective for top-dressing of perennial grasses, hayfields and pastures. Suitable for inter-row top-dressing on perennial plantations and fruits.

With their consistent nutrient composition in each granule these complex NPKS fertilisers ensure uniform distribution of all nutrients across the field.



	24:6:12:1	27:6:6:2
Appearance	pink, light pink or light brown granules	
Mass fraction of total nitrogen (N), % including mass fraction of:	24	27
– ammonium nitrogen	12	15
– nitrate nitrogen	12	12
– total phosphates in terms of P ₂ O ₅ , %	6	6
– digestible phosphates in terms of P ₂ O ₅ , %, min	6	6
– potassium in terms of K ₂ O, %	12	6
– sulphate sulphur in terms of S, %, min	1	2
Particle size distribution, %		
Mass fraction of granules, mm		
– sized under 1 mm, max	3	3
– sized 2-5 mm, min	90	90
– sized over 6.3 mm	0	0
Friability, %	100	100





Packaging and storage:



big bags



in bulk

Store in a dry insulated place, away from moisture and direct sunlight.

NPKS 10:20:20:6, NPKS 10:26:26:2

Versatile granular complex NPKS fertilisers with high phosphorus and potassium contents.

Ammonium nitrogen gives a sustained delivery of nitrogen as it becomes slowly available to the plant after conversion to nitrate form.

Suitable for all crops and soils. Especially effective for grain, vegetable, fodder, fruit and berry crops as main and at-planting fertilisers.

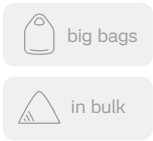
Excellent physical and chemical characteristics to facilitate storage and application.

With their consistent nutrient composition in each granule these complex NPKS fertilisers ensure uniform distribution of all nutrients across the field.



	10:20:20:6	10:26:26:2
Appearance	white to various shades of grey or pink granules	
Mass fraction of total nitrogen (N), % including mass fraction of:	10	10
– ammonium nitrogen	10	10
– total phosphates in terms of P ₂ O ₅ , %	20	26
– digestible phosphates in terms of P ₂ O ₅ , %, min	19.5	25.5
– potassium in terms of K ₂ O, %	20	26
– sulphate sulphur in terms of S, %, min	6	2
Particle size distribution, %		
Mass fraction of granules, mm		
– sized under 1 mm, max	3	3
– sized 1-5 mm, min	90	90
– sized over 6 mm	0	0
Friability, %	10	10

Packaging and storage:



Store in a dry insulated place, away from moisture
and direct sunlight.

NPKS 10:20:10:5, NPKS 12:24:12:6,
NPKS 14:23:14:6

Granular complex NPKS fertilisers with high
phosphorus content.

Suitable for all crops and soils. Used as main fertiliser
for winter crops, as well as pre-planting and at-planting
fertiliser for spring crops. Ideal for cereals and
vegetables.

Also recommended for phosphorus-deficient soils.

With their consistent nutrient composition in each
granule these complex NPKS fertilisers ensure uniform
distribution of all nutrients across the field.



	10:20:10:5	12:24:12:6	14:23:14:6
Appearance	white to various shades of grey or pink granules		
Mass fraction of total nitrogen (N), % including mass fraction of:	10	12	14
– ammonium nitrogen	10	12	12
– amide nitrogen	-	-	2
– total phosphates in terms of P ₂ O ₅ , %	20	24	23
– digestible phosphates in terms of P ₂ O ₅ , %, min	20	24	23
– potassium in terms of K ₂ O, %	10	12	14
– sulphate sulphur in terms of S, %, min	5	6	6
Particle size distribution, %			
Mass fraction of granules, mm			
– sized under 1 mm, max	3	3	3
– sized 1-4 mm, min	90	90	95
– sized over 6.3 mm	0	0	0
Friability, %	10	10	10





Packaging and storage:



big bags



in bulk



Various trace elements can be added
to all NPK grades.

Store in a dry insulated place, away from moisture
and direct sunlight.

NPK/NPKS

Granular complex

**NPK 16:8:16, NPK 17:0,1:28,
NPKS 17:6:18:4+2Mg, NPK 18:4:18**

**Granular complex NPK fertiliser with high nitrogen,
potassium and additional magnesium content.**

Granular complex NPK has a balanced nitrogen source,
containing both forms of nitrogen (nitrate and ammonium).
The nitrate form of nitrogen is a prerequisite to feed fast
growing crops and ensure good root development, while
the ammonium form is important to keep a sustained
delivery of nitrogen.

Magnesium improves absorption of phosphorus,
supports activation of enzymes and accelerates formation
of carbohydrates.

Optimal for soils with a high phosphorus content.

Recommended for perennial crops, fruit, coffee, cocoa,
sugarcane, vegetables. Suitable for top-dressing during
inter-row tillage.

With their consistent nutrient composition in each
granule these complex NPK fertiliser ensure uniform
distribution of all nutrients across the field.

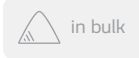


	16:8:16	17:0,1:28	17:6:18:4+2Mg	NPK 18:4:18
Appearance	pink, light-pink or light-brown granules			
Mass fraction of total nitrogen (N), %	16	17	17	18
including mass fraction of:				
– ammonium nitrogen	16	9	10	9
– nitrate nitrogen	-	8	7	9
– total phosphates in terms of P ₂ O ₅ , %	8	0.1	6	4
– digestible phosphates in terms of P ₂ O ₅ , %, min	8	0.1	6	4
– potassium in terms of K ₂ O, %	16	28	18	18
– sulphate sulphur in terms of S, %, min	2	-	4	-
– magnesium in term of Mg, %, min	-	-	2	-
Particle size distribution, %				
Mass fraction of granules, mm				
– sized under 1 mm, max	3	3	3	3
– sized 1-5 mm, min	90	90	90	90
– sized over 6.3 mm	0	0	0	0
Friability, %	100	100	100	100

Packaging and storage:



big bags



in bulk



Various trace elements can be added to all NPK grades.

Store in a dry insulated place, away from moisture and direct sunlight.

**NPK 19:4:19, NPK 19:9:19,
NPK 20:4:20, NPK 21:0,1:21**

Granular complex NPK fertilisers with high nitrogen and potassium content.

Granular complex NPK has a balanced nitrogen source, containing both forms of nitrogen (nitrate and ammonium). The nitrate form of nitrogen is a prerequisite to feed fast growing crops and ensure good root development, while the ammonium form is important to keep a sustained delivery of nitrogen.

Optimal for soils with a high phosphorus content.

Recommended for perennial crops, fruit, coffee, cocoa, sugarcane, vegetables. Suitable for top-dressing during inter-row tillage.

With their consistent nutrient composition in each granule these complex NPK fertilisers ensure uniform distribution of all nutrients across the field.



	19:4:19	19:9:19	20:4:20	21:0,1:21
Appearance	pink, light-pink or light-brown granules			
Mass fraction of total nitrogen (N), %	19	19	20	21
including mass fraction of:				
– ammonium nitrogen	10	10	10	11
– nitrate nitrogen	9	9	10	10
– total phosphates in terms of P ₂ O ₅ , %	4	9	4	0,1
– digestible phosphates in terms of P ₂ O ₅ , %, min	4	9	4	0,1
– potassium in terms of K ₂ O, %	19	19	20	21
– sulphate sulphur in terms of S, %, min	-	-	-	-
– magnesium in term of Mg, %, min	-	-	-	-
Particle size distribution, %				
Mass fraction of granules, mm				
– sized under 1 mm, max	3	3	3	3
– sized 1-5 mm, min	90	90	90	90
– sized over 6.3 mm	0	0	0	0
Friability, %	100	100	100	100





Packaging and storage:



big bags



in bulk

Store in a dry insulated place, away from moisture
and direct sunlight.

**NPKS 6:18:34:2, NPKS 8:15:30:4,
NPKS 8:20:30:3**

**Granular complex NPKS fertilisers with high
potassium content.**

Suitable for all crops and soils. Ammonium nitrogen
gives a sustained delivery of nitrogen as it becomes
slowly available to the plant after conversion
to nitrate form.

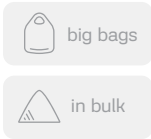
Effective as main fertiliser or for pre-planting and
at-planting application. Recommended for potassium-
loving crops.

With their consistent nutrient composition in each
granule these complex NPKS fertilisers ensure uniform
distribution of all nutrients across the field.



	6:18:34:2	8:15:30:4	8:20:30:3
Appearance	light grey, grey, pink and grey-pink granules		
Mass fraction of total nitrogen (N), % including mass fraction of:	6	8	8
– ammonium nitrogen	6	8	8
– total phosphates in terms of P ₂ O ₅ , %	18	15	20
– digestible phosphates in terms of P ₂ O ₅ , %, min	18	15	19.5
– potassium in terms of K ₂ O, %	34	30	30
– sulphate sulphur in terms of S, %, min	2	4	3
Particle size distribution, %			
Mass fraction of granules, mm			
– sized under 1 mm, max	3	3	3
– sized 1-4 mm, min	95	95	95
– sized over 6 mm	0	0	0
Friability, %	100	100	100

Packaging and storage:



Various trace elements can be added to all NPK grades.

Store in a dry insulated place, away from moisture and direct sunlight.

**NPKS 12:5:27:8, NPKS 13:13:21:7,
NPKS 13:13:24:4**

Granular complex NPKS fertilisers with high potassium content.

Suitable for all crops and soils (especially phosphorus-rich soils). Ammonium nitrogen gives a sustained delivery of nitrogen as it becomes slowly available to the plant after conversion to nitrate form. Low content of nitrate form of nitrogen is a prerequisite to feed fast growing crops and ensure good root development at the time of application.

Effective as main fertiliser, for pre-planting and at-planting application. Recommended for potassium-loving crops.

With their consistent nutrient composition in each granule these complex NPKS fertilisers ensure uniform distribution of all nutrients across the field.

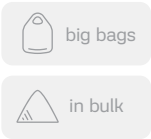


	12:5:27:8	13:13:21:7	13:13:24:4
Appearance	light grey, grey, pink and grey-pink granules		
Mass fraction of total nitrogen (N), % including mass fraction of:	12	13	13
– ammonium nitrogen	10	11	10
– nitrate nitrogen	2	2	3
– total phosphates in terms of P ₂ O ₅ , %	5	13	13
– digestible phosphates in terms of P ₂ O ₅ , %, min	4	11	11
– potassium in terms of K ₂ O, %	27	21	24
– sulphate sulphur in terms of S, %, min	8	7	4
Particle size distribution, %			
Mass fraction of granules, mm			
– sized under 1 mm, max	3	3	3
– sized 1-5 mm, min	90	90	90
– sized over 6 mm	0	0	0
Friability, %	10	10	10





Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

NPKS 8:20:30:3+0.015Zn,
NPKS 14:18:18:6+0.3B

Granular complex NPKS fertilisers with micronutrients.

Ensure comprehensive nutrition because of balanced composition and the presence of micronutrients in one granule. Suitable for all crops and all soils.

Boron is necessary for normal cell division and growth; it supports transportability and storability of agricultural products.

Zinc supports growth of the root system and the absorption of nutrients from the soil; it increases the protein and carbohydrate content in agricultural products.

Effective as basic and at-sowing fertiliser for all crops.

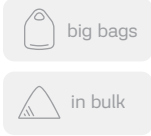
Recommended for use on maize, cereals, rapeseed, root and tubers crops.

With their consistent nutrient composition in each granule these complex NPKS fertilisers ensure uniform distribution of all nutrients across the field.



	8:20:30:3+0.015Zn	14:18:18:6+0.3B
Appearance	pink and greyish-pink granules	
Mass fraction of total nitrogen (N), % including mass fraction of:	8	14
- ammonium nitrogen	8	12
- amide nitrogen	-	2
- total phosphates in terms of P ₂ O ₅ , %	20	18
- digestible phosphates in terms of P ₂ O ₅ , %, min	20	18
- potassium in terms of K ₂ O, %	30	18
- sulphate sulphur in terms of S, %, min	3	6
- zinc in terms of Zn, %	0.015	-
- boron in terms of B, %	-	0.3
Particle size distribution, %		
Mass fraction of granules, mm		
- sized under 1 mm, max	3	3
- sized 1-4 mm, min	95	95
- sized over 6 mm	0	0
Friability, %	100	100

Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

NPKS 15:15:15:6+1B
NPKS 15:20:15:6+0.3B+0.3Zn

Granular complex NPKS fertilisers with micronutrients.

Ensure comprehensive nutrition because of balanced composition and the presence of micronutrients in one granule. Suitable for all crops and all soils.

Boron is necessary for normal cell division and growth; it supports transportability and storability of agricultural products.

Zinc supports growth of the root system and the absorption of nutrients from the soil; it increases the protein and carbohydrate content in agricultural products.

Effective as basic and at-sowing fertiliser for all crops.

Recommended for use on maize, cereals, rapeseed, root and tubers crops.

With their consistent nutrient composition in each granule these complex NPKS fertilisers ensure uniform distribution of all nutrients across the field.

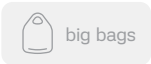


	15:15:15:6+1B	15:20:15:6+0.3B+0.3Zn
Appearance	pink and greyish-pink granules	
Mass fraction of total nitrogen (N), % including mass fraction of:	15	15
– ammonium nitrogen	11	12
– amide nitrogen	4	3
– total phosphates in terms of P ₂ O ₅ , %	15	20
– digestible phosphates in terms of P ₂ O ₅ , %, min	15	20
– potassium in terms of K ₂ O, %	15	15
– sulphate sulphur in terms of S, %, min	6	6
– of zinc, %	-	0.3
– of boron, %	1	0.3
Particle size distribution, %		
Mass fraction of granules, mm		
– sized under 1 mm, max	3	3
– sized 1-4 mm, min	95	95
– sized over 6 mm	0	0
Friability, %	100	100





Packaging and storage:



Possibility of production different biomodified NPKS grades of complex fertilisers.

Store in a dry insulated place, away from moisture and direct sunlight, at a temperature of -40 °C до +40 °C.

Guaranteed storage life – 1 year.
Shelf life – 2 years.

NPK/NPKS Granular complex

MultiStart NPKS 8:20:30:3+BIO,
MultiStart NPKS 15:15:15:11+BIO

Granular complex biomodified fertiliser containing the main nutrients (nitrogen, phosphorus, potassium and sulphur), as well as *Bacillus rhizospheric bacteria*.

Once in the soil, the bacteria produce auxins, which stimulate development of the root system, increase its absorption capacity and produce organic acids, which increase the content of water-soluble forms of phosphorus in the soil.

The microorganisms in the fertiliser inhibit the activity of pathogens in the rhizosphere and increase the plant's bacterial and fungal resistance.

MultiStart NPKS increases biological activity of the soil, improves yields of crops and quality of agricultural products and supports business profitability.

Used for pre-sowing or at-sowing application for all types of crops.



	MultiStart 8:20:30:3+BIO	MultiStart 15:15:15:11+BIO
Appearance	white to various shades of grey or pink granules	
Mass fraction of total nitrogen (N), % including mass fraction of:	8	15
– ammonium nitrogen	8	15
– total phosphates in terms of P ₂ O ₅ , %	20	15
– digestible phosphates in terms of P ₂ O ₅ , %, min	19.5	15
– potassium in terms of K ₂ O, %	30	15
– sulphate sulphur in terms of S, %, min	3	11
Viable bacterial cells per 1 gram of fertiliser, CFU/g, min	5x10 ⁴	5x10 ⁴
Particle size distribution, % Mass fraction of granules, mm		
– sized under 1 mm, max	3	3
– sized 1-5 mm, min	90	90
– sized over 6 mm	0	0
Friability, %	100	100

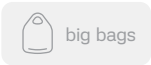


RM

Raw materials
for WS NPK production



Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

Urea microprilled

Microprilled urea can be used to produce water-soluble NPK blends. Fine microprills lead to high uniformity of blends. NPK blends containing microprills do not cake, segregate and do not produce dust.



Appearance	white or slightly colored granules
- nitrogen content on dry basis, %, min	46.2
- biuret content, %, max	1.4
- free ammonia content, %, max	0.02
- hygroscopic water content, %, max	0.3
Granulometric composition, content of granules sized, %:	
- 1 to 1,5 mm, max	10
- 0.7 to 1 mm, min	60
- less than 0.3 mm, max	5

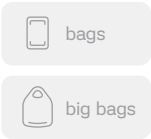


WS

Water-soluble fertilisers



Packaging and storage:



Do not mix calcium nitrate with fertilisers containing phosphates and sulphates.

Store in a dry insulated place, away from moisture and direct sunlight.

Calcium nitrate concentrated (CN)
17N+33CaO

The only water-soluble source of calcium with the maximum content of the active substance (calcium nitrate content – 98%*).

The product has a low content of ammonium nitrogen and is in anhydrous form. Calcium nitrate increases plant's resistance to environmental factors, improves quality of fruits and increases their shelf life. The presence of accessible calcium is necessary throughout the growing season, since calcium is not redistributed within the plant.

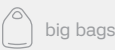
Used in greenhouse vegetable growing, in drip irrigation systems. An excellent solution for top-dressing fruit and berry crops, roots and tubers crops.

* vs 78% content in similar products



Appearance	white or grey-yellow granules
Mass fraction of total nitrogen (N), %	17
including mass fraction of:	
– nitrate nitrogen	16.7
– ammonium nitrogen	0.3
– calcium in terms of CaO, %, min	33
Particle size distribution, %	
Mass fraction of granules, mm	
– sized under 1 mm, max	5
– sized 1-4 mm, min	90
– sized over 6.3 mm	0
pH (1% aqueous solution)	5.5 – 6.5
Water solubility at 20 °C, g/100 cm³	120
Friability, %	100

Packaging and storage:



Do not mix calcium nitrate with fertilisers containing phosphates and sulphates.

Store in a dry insulated place, away from moisture and direct sunlight.

Calcium nitrate concentrated with boron (CN with B)

17N+32CaO+1B

Granular fertiliser containing fully water-soluble calcium and boron in combination with fast acting nitrate nitrogen.

High calcium content increases storability and quality of agricultural products. Calcium nitrate increases plant's resistance to environmental factors, improves quality of fruits and increases their shelf life.

The addition of boron stimulates the setting and preservation of crop ovaries. Ideal for light soils (sandy, sandy-loam and light loam soils).

Recommended for use in fertigation systems for all crops. Suitable for top-dressing sugar beet, vegetable, roots and tubers crops, fruit and berry crops, cotton.

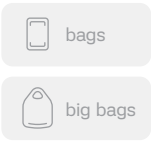


Appearance	white or grey-yellow granules
Mass fraction of total nitrogen (N), % including mass fraction of:	17
– nitrate nitrogen	16.7
– ammonium nitrogen	0.3
– calcium in terms of CaO, %, min	32
– boron in terms of B, %, max	1
Particle size distribution, %	
Mass fraction of granules, mm	
– sized under 1 mm, max	5
– sized 1-4 mm, min	90
– sized over 6.3 mm	0
pH (1% aqueous solution)	5.5 – 6.5
Water solubility at 20 °C, g/100 cm ³	120
Friability, %	100





Packaging and storage:



Do not mix calcium nitrate with fertilisers containing phosphates and sulphates.

Store in a dry insulated place, away from moisture and direct sunlight.

Calcium nitrate concentrated with magnesium (CN with Mg)

17N+32CaO+1MgO

Granular fertiliser containing fully water-soluble calcium and magnesium in combination with fast acting nitrate nitrogen.

High calcium content increases storability and quality of agricultural products. Calcium nitrate increases plant's resistance to environmental factors, improves quality of fruits and increases their shelf life.

Magnesium improves absorption of phosphorus, supports activation of enzymes and accelerates formation of carbohydrates. Ideal for light soils (sandy, sandy-loam and light loam soils).

Recommended for use in fertigation systems on all crops.

Effective on vegetable, fruit and berry crops.



Appearance	white or grey-yellow granules
Mass fraction of total nitrogen (N), %	17
including mass fraction of:	
– nitrate nitrogen	16.7
– ammonium nitrogen	0.3
– calcium in terms of CaO, %, min	32
– magnesium in terms of MgO, %, max	1
Particle size distribution, %	
Mass fraction of granules, mm	
– sized under 1 mm, max	5
– sized 1-4 mm, min	90
– sized over 6.3 mm	0
pH (1% aqueous solution)	5.5 – 6.5
Water solubility at 20 °C, g/100 cm ³	120
Friability, %	100

Packaging and storage:



bags



big bags

Store in a dry insulated place, away from moisture and direct sunlight.

Potassium nitrate (NOP)

NK 13,7:46,2

Highly effective water-soluble nitrogen-potassium fertiliser with high potassium content. SOLAR potassium nitrate is a chemical purity benchmark for similar products.

Potassium supports the intensity of photosynthesis and oxidation, is involved in carbohydrate metabolism, and helps the plant retain water by strengthening cell walls. Potassium nitrate increases the plant's resistance to adverse environmental factors like rapid changes in water and temperature conditions.

Ideal for use in greenhouse farming, fertigation systems, for foliar feeding of grain, technical, fruit, berry and ornamental crops.



Appearance	white crystalline product
Mass fraction of total nitrogen (N), %	13.7
Including mass fraction of:	
– nitrate nitrogen	13.7
– potassium in terms of K ₂ O, %, min	46.2
– insoluble residue, %, max	0.01
pH (1% aqueous solution)	5.4
Water solubility at 20 °C, g/100 cm ³	31
Friability, %	100



Monoammonium phosphate (MAP)

NP 12:61

Due to its 100% water solubility SOLAR MAP is an excellent source of nitrogen and phosphorus in an easily available form.

Monoammonium phosphate is effective during early stages of plant development, especially during the formation of the root system. Ideal for use in fertigation systems and in fertiliser blends.

Packaging and storage:

 bags

 big bags



Do not mix MAP with fertilisers containing calcium and magnesium.

Store in a dry insulated place, away from moisture and direct sunlight.



Appearance	white crystals
Mass fraction of total nitrogen (N), %	12
including mass fraction of:	
– ammonium nitrogen	12
– water-soluble phosphates in terms of P ₂ O ₅ , %	61
– insoluble residue, %, max	0.1
pH (1% aqueous solution)	4.5
Water solubility at 20 °C, g/100 cm ³	37.1
Friability, %	100

Packaging and storage:



bags



big bags

Store in a dry insulated place, away from moisture and direct sunlight.

Monopotassium phosphate (MKP)

PK 52:34

Highly efficient water-soluble phosphorus-potassium fertiliser.

Monopotassium phosphate is the most concentrated phosphorus-potassium fertiliser on the market converted into the content of each element.

Fertiliser is effective during the late stages of vegetation period when the nitrogen application is not recommended.

Provides plants with an additional resistance effect against bacterial and fungal activity.

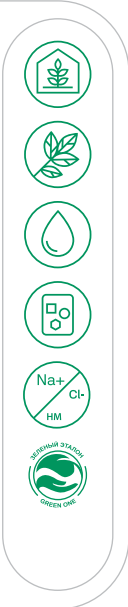
Ideal for use in greenhouses, fertigation systems, or for supplementary foliar feeding.

Can be used for production of complex water-soluble fertilisers.



Appearance	white crystals
Mass fraction of:	
– water-soluble phosphates in terms of P_2O_5 , %	52
– water-soluble potassium in terms of K_2O , %	34
– insoluble residue, %, max	0.1
pH (1% aqueous solution)	4.5
Water solubility at 20°C, g/100 cm ³	24
Friability, %	100

* actually below 0,05

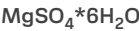


Packaging and storage:

-  bags
-  big bags
-  in bulk

Store in a dry insulated place, away from moisture and direct sunlight.

Magnesium sulphate



Water-soluble fertiliser containing magnesium and high content of sulphur in easily accessible form.

Magnesium in the fertiliser increases photosynthetic and fermentative activity of the plants.

Sulphur in sulphate form is easily absorbed by the root system. The sulphur content in the fertiliser promotes active growth of plants, increases their immunity and viability, and increases the overall product quality through increased protein content.

This fertiliser grade is recommended for early vegetative development stage of the plant.

Perfectly suitable for use in greenhouses and as foliar application in open fields.

Appearance	white crystals
Mass fraction of:	
- magnesium in terms of magnesium (MgO), %	18 ± 1
- magnesium (Mg), %	11 ± 1
- sulphates in terms of S, %	13
- insoluble residue, %, max	0.1
Particle size distribution, %	
Mass fraction of granules, mm	
- sized under 1 mm, max	5
- sized over 0.125 mm	90
Friability, %	100

Packaging and storage:



bags

Store in a dry insulated place, away from moisture and direct sunlight.

SOLAR NPK micro Starter

NPK 11:40:11+2MgO+TE, NPK 13:40:13+TE,
NPK 15:30:15+2MgO+TE

Water-soluble phosphorus-rich NPK fertilisers.

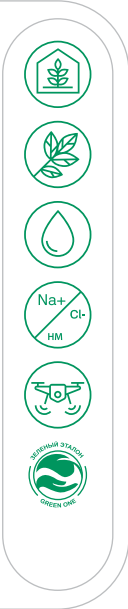
At the early growth stages the special formula of the fertiliser stimulates development of the root system, increases absorption of nutrients, improves metabolism, division and reproduction processes in plant cells. At the stage of budding and flowering the products accelerate formation of reproductive organs and improve quality of agricultural products.

A balanced ratio of nutrients makes these fertilisers suitable for all crops. Ideal for foliar application to field crops.

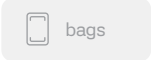


	11:40:11 +2MgO+TE	13:40:13 +TE	15:30:15 +2MgO+TE
Appearance	yellow crystals		
Mass fraction of:			
– total nitrogen (N), %	11	13	15
– nitrate nitrogen	3	4.5	4.4
– ammonium nitrogen	8	8.5	6
– amide nitrogen	-	-	4.6
– water-soluble phosphates in terms of P ₂ O ₅ , %	40	40	30
– potassium in terms of K ₂ O, %	11	13	15
– sulphates in terms of S, %	2	-	2
– magnesium in terms of MgO, %	2	-	2
– insoluble residue, %, max	0.1	0.1	0.1
Mass fraction of trace elements (* – in chelated EDTA form), %, min			
– boron (B)	0.02	0.02	0.02
– copper (Cu)*	0.01	0.01	0.01
– iron (Fe)*	0.1	0.1	0.1
– manganese (Mn)*	0.05	0.05	0.05
– molybdenum (Mo)	0.01	0.01	0.01
– zinc (Zn)*	0.01	0.01	0.01
Friability, %	100	100	100





Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

SOLAR NPK micro Universal

NPK 18:18:18+3MgO+TE, NPK 19:19:19+TE, NPK 20:20:20+TE

The equal-ratio water-soluble grade fertilisers are designed for comprehensive plant nutrition at all phases of growth and support correct development of the plant throughout the growing season.

The products are effective during stress periods like drought, waterlogging, diseases, pests, etc.

A balanced ratio of nutrients makes these fertilisers suitable for all crops. Ideal for foliar application to field crops.



	18:18:18 +3MgO+TE	19:19:19 +TE	20:20:20 +TE
Appearance	green crystals		
Mass fraction of:			
– total nitrogen (N), %	18	19	20
– nitrate nitrogen	5.4	10.5	6
– ammonium nitrogen	3.6	8.5	4
– amide nitrogen	9	-	10
– water-soluble phosphates in terms of P ₂ O ₅ , %	18	19	20
– potassium in terms of K ₂ O, %	18	19	20
– sulphates in terms of S, %	2.5	-	-
– magnesium in terms of MgO, %	3	-	-
– insoluble residue, max, %	0.1	0.1	0.1
Mass fraction of trace elements (* – in chelated EDTA form), %, min			
– boron (B)	0.02	0.02	0.02
– copper (Cu)*	0.01	0.01	0.01
– iron (Fe)*	0.1	0.1	0.1
– manganese (Mn)*	0.05	0.05	0.05
– molybdenum (Mo)	0.01	0.01	0.01
– zinc (Zn)*	0.01	0.01	0.01
Friability, %	100	100	100



Packaging and storage:



bags

Store in a dry insulated place, away from moisture and direct sunlight.

SOLAR NPK micro Finisher

NPK 3:11:38+TE, NPK 3:11:38+4MgO+TE,
NPK 12:6:36+2.5MgO+TE, NPK 15:7:30+3MgO+TE

Water-soluble potassium-rich NPK fertilisers.

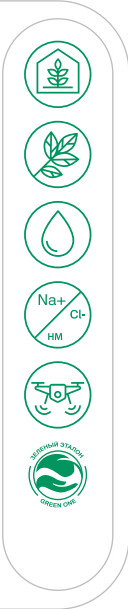
At the final stages of vegetation the products promote even ripening and intensive fruiting, improve taste, appearance and storability of agricultural products, increase sugar content in sugar beet roots and stimulate the plant's resistance to drought conditions.

A balanced ratio of nutrients makes these fertilisers suitable for all crops. Ideal for foliar application to field crops.

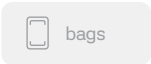


	3:11:38 +TE	3:11:38 +4MgO+TE	12:6:36 +2.5MgO+TE	15:7:30 +3MgO+TE
Appearance	pink crystals			
Mass fraction of:				
– total nitrogen (N), %	3	3	12	15
– nitrate nitrogen	0.2	3	10.6	8.7
– ammonium nitrogen	2.8	-	1.4	1.4
– amide nitrogen	-	-	-	4.9
– water-soluble phosphates in terms of P ₂ O ₅ , %	11	11	6	7
– potassium in terms of K ₂ O, %	38	38	36	30
– sulphate sulphur in terms of S, %, min	-	-	2	2.5
– magnesium in terms of MgO, %, min	-	4	2.5	3
– insoluble residue, %, max	0.1	0.1	0.1	0.1
Mass fraction of trace elements (* – in chelated EDTA form), %, min:				
– boron (B)	0.02	0.02	0.02	0.02
– copper (Cu)*	0.01	0.01	0.01	0.01
– iron (Fe)*	0.1	0.1	0.1	0.1
– manganese (Mn)*	0.05	0.05	0.05	0.05
– molybdenum (Mo)	0.01	0.01	0.01	0.01
– zinc (Zn)*	0.01	0.01	0.01	0.01
Friability, %	100	100	100	100





Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

SOLAR NPK micro+Amino

Starter 13:40:13+TE+Amino
Universal 20:20:20+TE+Amino
Finisher 12:6:36+2,5MgO+TE+Amino

Complex water-soluble fertilisers with trace elements and complex of amino acids.

This unique fertiliser includes a combination of 17 plant based amino acids. The complex of amino acids protects the crop from abiotic stress factors, optimizes water exchange, accelerates growth of generative organs and fertility of pollen, increases yield and improves storability characteristics of the end product.



	Starter 13:40:13+TE +Amino	Universal 20:20:20+TE +Amino	Finisher 12:6:36+2.5MgO+TE +Amino
Appearance	various colors crystals		
Mass fraction of:			
- total nitrogen (N), %	13	20	12
- nitrate nitrogen	4.5	6	10.6
- ammonium nitrogen	8.5	4	1.4
- amide nitrogen	-	10	-
- water-soluble phosphates in terms of P ₂ O ₅ , %	40	20	6
- potassium in terms of K ₂ O, %	13	20	36
- sulphate sulphur in terms of S, %, min	-	-	2
- magnesium in terms of MgO, %, min	-	-	2.5
- insoluble residue, max, %	0.1	0.1	0.1
Complex of Amino acids, %, min	1	1	1
Mass fraction of trace elements (* – in chelated form), %, min:			
- boron (B)	0.02	0.02	0.02
- copper (Cu)*	0.01	0.01	0.01
- iron (Fe)*	0.1	0.1	0.1
- manganese (Mn)*	0.05	0.05	0.05
- molybdenum (Mo)	0.01	0.01	0.01
- zinc (Zn)*	0.01	0.01	0.01
Friability, %	100	100	100

Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

SOLAR NPK micro+Stim

Starter 13:40:13+TE+Stim
Universal 20:20:20+TE+Stim
Finisher 12:6:36+2,5MgO+TE+Stim

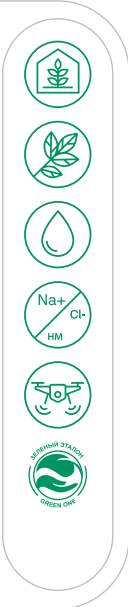
Complex water-soluble fertilisers with trace elements and an effective plant growth stimulant (PGS).

Growth stimulant is a participant of citric acid cycle (Krebs cycle). It effectively promotes development of root system and vegetative organs, improves metabolism of proteins, vitamins and chlorophyll in the plant and increases the overall yield of crops.

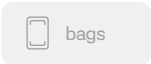


	Starter 13:40:13+TE +Stim	Universal 20:20:20+TE +Stim	Finisher 12:6:36+2.5MgO+TE +Stim
Appearance	various colors crystals		
Mass fraction of:			
– total nitrogen (N), %	13	20	12
– nitrate nitrogen	4.5	6	10.6
– ammonium nitrogen	8.5	4	1.4
– amide nitrogen	-	10	-
– water-soluble phosphates in terms of P ₂ O ₅ , %	40	20	6
– potassium in terms of K ₂ O, %	13	20	36
– sulphate sulphur in terms of S, %, min	-	-	2
– magnesium in terms of MgO, %, min	-	-	2.5
– insoluble residue, %, max	0.1	0.1	0.1
Growth stimulant, %, min	1	1	1
Mass fraction of trace elements (* – in chelated form), %, min:			
– boron (B)	0.02	0.02	0.02
– copper (Cu)*	0.01	0.01	0.01
– iron (Fe)*	0.1	0.1	0.1
– manganese (Mn)*	0.05	0.05	0.05
– molybdenum (Mo)	0.01	0.01	0.01
– zinc (Zn)*	0.01	0.01	0.01
Friability, %	100	100	100





Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

SOLAR NPK micro+BioSurf

Starter 13:40:13+TE+BioSurf
Universal 20:20:20+TE+BioSurf
Finisher 12:6:36+2,5MgO+TE+BioSurf

Complex water-soluble fertiliser with trace elements and biological surfactant.

Biological surfactant increases the contact surface area of the droplet with the leaf surface and shows an increased adhesion causing better absorption of nutritional elements.

Though the surfactant doesn't represent a nutritional element itself, using water-soluble fertilisers with additional surfactant agent improves the intake efficiency of the elements following an increased crop yield. The agent is biologically synthesized and has no toxic effect on the crop.



	Starter 13:40:13+TE +BioSurf	Universal 20:20:20+TE +BioSurf	Finisher 12:6:36+2.5MgO+TE +BioSurf
Appearance	various colors crystals		
Mass fraction of:			
- total nitrogen (N), %	13	20	12
- nitrate nitrogen	4.5	6	10.6
- ammonium nitrogen	8.5	4	1.4
- amide nitrogen	-	10	-
- water-soluble phosphates in terms of P ₂ O ₅ , %	40	20	6
- potassium in terms of K ₂ O, %	13	20	36
- sulphate sulphur in terms of S, %, min	-	-	2
- magnesium in terms of MgO, %, min	-	-	2.5
- insoluble residue, %, max	0.1	0.1	0.1
Fraction of the biosurfactant, %, min	1	1	1
Mass fraction of trace elements (* – in chelated form), %, min:			
- boron (B)	0.02	0.02	0.02
- copper (Cu)*	0.01	0.01	0.01
- iron (Fe)*	0.1	0.1	0.1
- manganese (Mn)*	0.05	0.05	0.05
- molybdenum (Mo)	0.01	0.01	0.01
- zinc (Zn)*	0.01	0.01	0.01
Friability, %	100	100	100

Packaging and storage:



AQUADROP fertilisers are not recommended for use in professional greenhouses due to their chloride content. Can be used in soil-based farm greenhouses.

Store in a dry insulated place, away from moisture and direct sunlight.

AQUADROP NPK

NPK 5:15:45, NPK 13:40:13, NPK 18:18:18, NPK 20:20:20

AQUADROP is a line of water-soluble complex fertilisers specially designed for fertigation of fruit and vegetable crops.

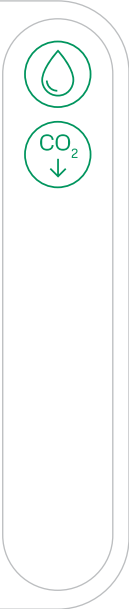
The line boasts a wide range of brands with optimal nutrient ratios to provide complete mineral nutrition throughout the growing season.

All AQUADROP products are suitable for drip irrigation systems.

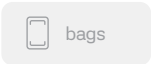


	NPK 5:15:45	NPK 13:40:13	NPK 18:18:18	NPK 20:20:20
Appearance	white crystals			
Mass fraction of:				
– total nitrogen (N), %	5	13	18	20
– ammonium nitrogen	3	7.5	10.8	4
– nitrate nitrogen	-	-	7.2	-
– amide nitrogen	2	5.5	-	16
– water-soluble phosphates in terms of P ₂ O ₅ , %	15	40	18	20
– potassium in terms of K ₂ O, %	45	13	18	20
– insoluble residue, %, max	0.1	0.1	0.1	0.1
– chlorides in terms of Cl, %	34	10	14	15
Friability, %	100	100	100	100





Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

AQUADROP KCl

0:0:62

The most concentrated source of water-soluble potassium fertiliser for fertigation and foliar application.

Ideal water-soluble potassium fertiliser for all chloride-tolerant crops in open field fertigation systems.

Maximum concentration of K₂O and 100% water solubility.

Safe for irrigation systems.

Compatible with all types of water-soluble fertilisers.



Appearance	dust-free crystals with greyish-white color
Mass fraction of:	
- potassium chloride, %, min	98.2
- potassium in terms of K ₂ O, %, min	62
- moisture content, %, max	0.5
- insoluble residue, %*	0.03
Granulometric composition, %	
- sized under 0.1 mm, max	3
- sized 0.1 – 1.25 mm, min	90
- sized under 2 mm	100

* typical



L

Liquid mineral
fertilisers



Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

NPK 5:10:5+1.5MgO+TE

A starter grade with an increased content of phosphorus, magnesium, and trace elements.

Ideal for basal application shortly prior to or during sowing.

The liquid formulation ensures even application of the fertiliser and rapid uptake of both macro nutrients and trace elements.

Magnesium supports movement of phosphorus, accelerates synthesis of hydrocarbons, and regulates oxidation-reduction processes.

Appearance	clear colourless or light-yellowish liquid
Mass fraction:	
– total nitrogen, %	5
– total phosphates in terms of P ₂ O ₅ , %	10
– potassium in terms of K ₂ O, %	5
– magnesium in terms of MgO, %	1.5
– insoluble residue, %, max	0.01
Density at 20 °C, g/cm ³	1.24
Mass fraction of trace elements*, %, min	
– boron (B)	0.01
– copper (Cu)*	0.005
– iron (Fe)*	0.06
– manganese (Mn)*	0.04
– molybdenum (Mo)	0.005
– zinc (Zn)*	0.005

* in chelated EDTA form

Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

NPK 7:7:7+1MgO+TE

A versatile grade with a balanced nitrogen-phosphorus-potassium content, magnesium, and trace elements.

Ideal for main application shortly prior to or during sowing.

The liquid formulation ensures even application of the fertiliser and rapid uptake of both macro nutrients and trace elements.

Magnesium supports movement of phosphorus, accelerates synthesis of hydrocarbons, and regulates oxidation-reduction processes



Appearance	clear colourless or light-yellowish liquid
Mass fraction:	
– total nitrogen, %	7
– total phosphates in terms of P ₂ O ₅ , %	7
– potassium in terms of K ₂ O, %	7
– magnesium in terms of MgO, %	1
– sulphate sulphur in terms of S, %, min	1
– insoluble residue, %, max	0.01
Density at 20 °C, g/cm ³	1.24
Mass fraction of trace elements*, %, min	
– boron (B)	0.01
– copper (Cu)*	0.005
– iron (Fe)*	0.06
– manganese (Mn)*	0.04
– molybdenum (Mo)	0.005
– zinc (Zn)*	0.005

* in chelated EDTA form





Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

NP(S) 8:1(9)

A liquid complex fertiliser with a balanced nitrogen-sulphur content.

A balanced composition enhances the nitrogen and sulphur synergy and helps plants utilise them more effectively.

The liquid formulation ensures even application of the fertiliser and rapid uptake of nutrients.

Optimal for basal and at-sowing application, and for inter-row feeding.

Appearance	clear colourless or light-yellowish liquid
Mass fraction:	
- total nitrogen (N), %	8
- total phosphates in terms of P ₂ O ₅ , %	1
- sulphate sulphur in terms of S, %	9
- insoluble residue, %, max	1

Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

MicroSolar Liquid Boron

Applied to all crops during critical growth and development stages.

Supports normal functioning of the plants' conductive system; improves phosphorus uptake; participates in hydrocarbon metabolism; stimulates formation of and preserves flower buds; improves seed productivity; increases the content of sugars, starch, proteins, and oils in the produce; supports formation of root nodules in pulse crops.

Most effective on neutral, close-to-neutral, and mildly alkaline soils.

Can be used with pesticides and water-soluble fertilisers.

Especially effective on pulse crops, sunflower, cruciferous crops, sugar beet, potato, flax, and vegetables.



Appearance	light-yellowish liquid
Mass fraction:	
– total nitrogen (N), %	5% (68 g/l)
– boron (B), %	11% (149 g/l)
Density, g/cm ³	1.3 – 1.4
pH of 1% water solution, max	10*



* actual pH of 1% water solution is 8.7 – 9.0



Packaging and storage:



canisters

Store in a dry insulated place, away from moisture and direct sunlight.

MicroSolar Liquid Zinc

Applied to all crops during critical growth and development stages.

Contains zinc in easily accessible chelated form (EDTA), which plays an important role in gaseous metabolism of plants.

Zinc regulates oxidation-reduction processes, and also activates a large number of enzymes.

Most effective on acid and carbonate soils.

Can be used with pesticides and water-soluble fertilisers.

Especially effective on pulse crops, sunflower, cruciferous crops, sugar beet, potato, flax, and vegetables.

Appearance	clear colourless liquid
Mass fraction:	
– total nitrogen (N), %	5% (68 g/l)
– zink (Zn), %	6% (78 g/l)
– boron (B), %	0.2% (2.6 g/l)
Density, g/cm ³	1.3
pH of 1% water solution, max	11*

* actual pH of 1% water solution is 7.2 – 7.8

Packaging and storage:



Store in a dry insulated place, away from moisture and direct sunlight.

MicroSolar Liquid Manganese

Applied to all crops during critical growth and development stages.

Contains manganese in easily accessible chelated form (EDTA), which is an essential participant of enzyme systems; takes part in oxidation-reduction processes (hydrocarbon and protein metabolism, photosynthesis, and respiration); increases the content of sugars, starch, and proteins in the produce; improves plants' resistance to draught and diseases.

Most effective on neutral, close-to-neutral, and mildly alkaline soils.

Can be used with pesticides and water-soluble fertilisers.

Especially effective on pulse crops, sunflower, cruciferous crops, sugar beet, potato, flax, and vegetables.



Appearance	dark red liquid
Mass fraction:	
– total nitrogen (N), %	4% (52 g/l)
– manganese (Mn), %	6% (78 g/l)
Density, g/cm ³	1.3
pH of 1% water solution, max	≤ 10



* actual pH of 1% water solution is 6.0 – 7.0



F

Feed grade
products

Packaging and storage:

 bags

 big bags

Store in a dry insulated place, away from moisture and direct sunlight.

Feed-grade urea

An effective protein supplement to boost dairy production.

- replenishes dietary deficiency of crude protein
- improves absorption of nutrients by organisms
- increases milk yield and animal weight gain



Appearance	white or slightly coloured granules
Mass fraction of:	
– total nitrogen in terms of dry matter, %, min	46.0
– biuret, max, %	3.0
– free ammonia, %, max	0.03
– hygroscopic water, %, max	0.3
pH	8.0 – 13.0

Particle size distribution, %:	
– sized 1-4 mm, %, max	94
– sized 2-4 mm, %, max	50
– sized under 1 mm, %, max	5
– sized over 6 mm	0

Mass fraction of:	
– fluorine, mg/kg, max	100
– arsenic, mg/kg, max	0.5
– lead, mg/kg, max	0.5
– cadmium, mg/kg, max	0.4
– mercury, mg/kg, max	0.1





Packaging and storage:



bags



big bags



Product safety is confirmed
under GMP + FSA standards.

Store in a dry insulated place, away from moisture
and direct sunlight.

Feed-grade
monoammonium phosphate

An excellent source of phosphorus for nutrition
enrichment and balancing. Phosphorus availability
in this product is over 91%.

- boosts immunity
- increases milk yield and animal weight gain
- normalises metabolism
- improves meat quality

Appearance	white crystals
Mass fraction of:	
- phosphorus soluble in a 0.4% hydrochloric acid solution in terms of P ₂ O ₅ , %	61
- nitrogen soluble in 0.4% hydrochloric acid solution, %	12
- water, %, max	0.3
Particle size distribution, %:	
- sized 4-7 mm, %, max	3
- sized over 7 mm, %	0
Mass fraction of:	
- fluorine, mg/kg, max	0.05
- arsenic, mg/kg, max	1
- lead, mg/kg, max	1
- cadmium, mg/kg, max	0.4
- mercury, mg/kg, max	0.1

Packaging and storage:

 big bags

Store in a dry insulated place, away from moisture and direct sunlight.

Fodder salt

A balancing additive, which supports development of the musculoskeletal, muscle, and nervous systems. Also increases milk productivity of certain production animals.

- balances potassium-sodium ratio
- supports osmotic blood pressure and kidney function
- increases resistance to thermal stress



Appearance	white with a grey or pink shade crystalline product
Mass fraction of:	
– sodium chloride in terms of dry matter, %, min	98.2
– water, %, max	0.5
– insoluble residue, %, max	0.5
Particle size distribution, %	
– sized up to 1.2 mm, %, min	1.0
– sized over 2.5 mm, %, max	5.0





Packaging and storage:



big bags

Store in a dry insulated place, away from moisture and direct sunlight.

Potassium chloride

A food additive used in the production of pre-mixtures and compound feeds to replenish potassium deficiency.

- maintains normal osmotic pressure, affects tissue excitability
- promotes digestion and improves metabolism
- promotes intensive growth and development of poultry
- increases resistance to thermal stress

Appearance	white with a grey or pink shade crystalline product
Mass fraction of:	
- potassium chloride, %	95.0 – 98.8
- sodium chloride, %	1.1 – 4.8
- water, %, max	0.5
Typical content of particles sized under 2 mm, %	100
Mass fraction of:	
- arsenic, mg/kg, max	50.0
- lead, mg/kg, max	50.0
- cadmium, mg/kg, max	0.4
- mercury, mg/kg, max	0.1

PRODUCTS FOR INDUSTRIAL CHEMISTRY



PRODUCTS FOR INDUSTRIAL CHEMISTRY

B

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LEGEND



Construction



Chemical industry



Mining



Fire-extinguishing equipment



Glass-making



Petroleum production



De-icing materials



Diesel exhaust treatment



Metalworking



Woodworking

A low-angle photograph of a complex industrial facility, likely a refinery or chemical plant. The image is dominated by large, horizontal, silver-colored pipes that curve and connect various parts of the structure. In the background, there are tall, cylindrical storage tanks or distillation columns, some of which are wrapped in blue insulation. The entire structure is supported by a network of steel beams and ladders. The sky is overcast with grey clouds. A blue semi-transparent banner is overlaid on the left side of the image, containing the letter 'B' and the text 'Base products'.

B

Base
products

Packaging, transportation and storage:



Transportation in tank cars and tanker lorries in accordance with applicable regulations.

Technical liquid ammonia

Technical liquid ammonia **Grade A** is used in the production of nitric acid and nitration processes, as a coolant, and in the creation of protective gas environments.

Grade B is used for the production of nitrogen fertilizers and as an independent fertilizer.



	Grade A	Grade B
Mass fraction of:		
- ammonia, %, min	99.9	99.6
- nitrogen (N), %, min	-	82
- water (residue after evaporation), %	0.2 – 0.4	0.2 – 0.4
- water (by Fisher method), %, max	0.1	-
- iron, max	1	2
- oil, max	2	8





Packaging, transportation and storage:



tank cars

Transported in tank cars and tanker lorries in accordance with applicable regulations.

Technical aqueous ammonia (ammonia water)

Technical aqueous ammonia (a 20-25% ammonia water solution) is used in the pulp and paper industry in the pulp cooking process or in the neutralisation of organic acids in hydrolysis plants.

A key application area is treatment of feed water for power plants.

	Grade A	Grade B
Mass fraction of:		
- ammonia, %, min	25	25
- nitrogen (N), %, min	not regulated	20.5
Mass concentration:		
- non-volatile residue, mg/dm ³ , max	0.07	not regulated
- carbon dioxide, max, mg/dm ³ , max	not regulated	8

Packaging, transportation and storage:

-  bags
-  big bags
-  in bulk

Transportation by rail, road and water transport in accordance with applicable regulations.
Store in a dry insulated place.

Technical urea



Urea is used in the production of plastics, adhesives, urea formaldehyde resins and the ADBLUE AUS 32 agent for treatment of diesel exhaust of industrial plants, vessels and vehicles.

For orders with extra purity requirements, urea can be supplied without anti-caking treatment.



	Prilled		Microprilled
	Premium grade	First grade	
Mass fraction of:			
– nitrogen in dry matter, %, min	46.3	46.2	46.2
– biuret, %, min	0.6	1.2	0.6
– free ammonia, %, max	0.01	0.01	0.01
Mass fraction of water, %, max:			
– hygroscopic	0.3	0.3	0.3
– total	0.6	0.6	0.5





Packaging, transportation and storage:



bags



big bags



in bulk

Transportation by rail, road and water transport in accordance with applicable regulations.

Store in a dry insulated place.

Ammonium nitrate



Ammonium nitrate is used as the main oxidiser in various types of industrial explosives.

Ammonium nitrate is used as a raw material to produce emulsion explosives, which are prepared directly at the sites of drilling and blasting operations or at stationary plants to produce IE (industrial explosives).



	Grade A	Grade B
Total mass fraction of:		
- nitrate and ammonium nitrogen in terms of NH_4NO_3 in dry matter, %, min	-	98
- nitrate and ammonium nitrogen in terms of nitrogen in dry matter, %, min	34.4	-
Mass fraction of:		
- hygroscopic water, %, max	0.3	-
- total water, %, max	0.6	0.5
- substances insoluble in 10% solution of nitric acid, %, max	0.2	0.2
- organic additive, %, max	-	0.15
- magnesium nitrate additives in terms of MgO, %	0.2 – 0.4	-
- calcium and magnesium nitrates (in total) in terms of MgO in dry matter, %, max	-	0.6
Static strength of granules, N/gran (kgf/ granule), min	5 (0.5)	0.8
pH of a water solution of ammonium nitrate with a mass fraction of 10%, min	5	5
Particle size distribution, %		
Mass fraction of granules, mm		
- sized 1-3 mm, min	93	-
- sized 1-4 mm, min	-	95
- sized 2-4 mm, min	-	80
- sized under 1 mm, max	4	3
- sized over 6 mm	0	0
Friability, %	100	100



Packaging, transportation and storage:



Transportation by rail, road and water transport
in accordance with applicable regulations.

Store in a dry insulated place.

Grade FWRG water-resistant
ammonium nitrate



The Grade FWRG water-resistant ammonium nitrate is
used in the production of industrial explosive mixtures
for waterflooded rock applications.



Mass fraction of:

– ammonium nitrate	
in terms of dry matter, %, min	99
– water, %, max	0.8
– fatty acids and paraffin in the 1:1 ratio, %	0.2 – 0.4
– iron, %	0.06 – 0.09
Acidity in terms of HNO_3 , %, max	0.07
Water resistance measured with a hydrodynamic tool, Pa (cm of water column), min	2451.7 (25)
Mechanical strength of granules (kg/granule), min	0.4

Particle size distribution, %	
Mass fraction of granules, mm	
– sized 1-3 mm, min	94
Friability, %	100





Packaging, transportation and storage:



big bags

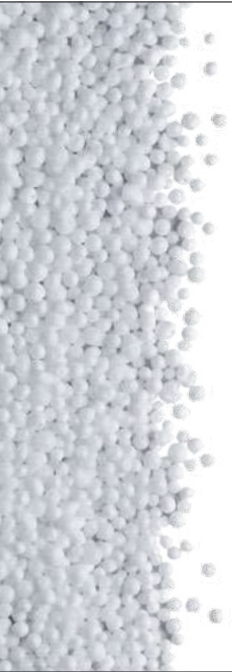
Transportation by rail, road and water transport
in accordance with applicable regulations.

Store in a dry insulated place.

Porous modified
ammonium nitrate

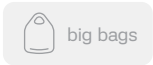


Porous modified ammonium nitrate is used in the
production of the ANFO industrial explosive, which is
typically used for 127 mm wells.



Mass fraction of:	
- ammonium nitrate in terms of NH_4NO_3 , %, min	98
- water, %, max	0.5
- pore-forming additive in terms of MgO in dry matter, %, max	0.6
- organic additive, %, max	0.15
pH of a water solution of ammonium nitrate with a mass fraction of 10%, min	4.5
Static strength of granules, N/granule (kg/granule), min	3 (0.3)
Absorption capacity in relation to diesel fuel, % min	10
Retentivity in relation to diesel fuel, % max	5.5
Bulk density, g/cm ³ , max	0.84
Particle size distribution, %	
Mass fraction of granules, mm	
- sized 1-3 mm, %, min	90
- sized under 1 mm and over 3 mm, %, total max	10
Friability, %	100

Packaging, transportation and storage:



Transportation by rail, road and water transport
in accordance with applicable regulations.
Store in a dry insulated place.

Technical potassium chloride
KCl

Technical Potassium chloride has many industrial
applications but is mainly used in the production
of chemical products.



	Grade A	Grade B
Guaranteed values		
Mass fraction of:		
- potassium chloride, %, min	98,2	98.2
- potassium chloride in terms of K ₂ O, %, min	62	62
- sodium chloride, %, max	1.3	1.6
- water-insoluble residue in dry matter, %, max	0.5	0.5
Typical values		
Mass fraction of:		
- water-insoluble residue, CaSO ₄ , MgCl ₂ *6H ₂ O, %, max	0.2	0.2
- amines, %	0.01 – 0,02	min 0.013



Packaging, transportation and storage:



big bags

Transportation by rail, road and water transport
in accordance with applicable regulations.

Store in a dry insulated place.

Potassium chloride
for oil & gas applications

KCl

Potassium chloride for the oil & gas sector is used in
the production of drilling fluids, killing fluids, additives
for grouting mixtures, and fluids for hydraulic fracturing.

Mass fraction of:

- potassium chloride, %, min	95
- water, %, min	0.5
Friability, %	100



S

Specialty
products



Packaging, transportation and storage:

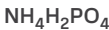
 bags

 big bags

Transportation by rail, road and water transport
in accordance with applicable regulations.

Store in a dry insulated place.

Technical water-soluble MAP



Technical water-soluble monoammonium phosphate is a versatile flame retardant.

In particular, it is used as a water-soluble agent for fireproofing of wood, wooden boards, plywood, and fabric. MAP can be successfully used in extinguishing fires of classes A, B, C and E. It is also used in the production of matches as a flame retardant agent.

As MAP does not contain any insoluble impurities, it dissolves completely and is better absorbed by target materials like fabric, plywood or wood.

MAP is used as a component in the production of lithium-iron-phosphate batteries (LiFePO_4 , LFP), including for electric vehicles.

Mass fraction of:

– monoammonium phosphate, %, min	99
– water, %, max	0.3
– water-insoluble residue, %, max	0.1

Packaging, transportation and storage:



bags



big bags

Transportation by rail, road and water transport
in accordance with applicable regulations.

Store in a dry insulated place.

Technical potassium nitrate
 KNO_3

Technical potassium nitrate is widely used in glass-making due to its high chemical purity and very low content of chlorides, sulphates and insoluble impurities.

Nitrate of potassium is used in the processes of producing colored explosives.



Grade B

Mass fraction of:

- potassium nitrate, %, min	99.85
- water, %, max	0.2
- chloride salts in terms of NaCl, %, max	0.03
- water-insoluble residue in dry matter, %, max	0.03
- substances oxidised by potassium permanganate in terms of KNO_2 in dry matter, %, max	0.01
- calcium and magnesium salts in terms of Ca, %, max	0.02
- iron, %, max	not regulated



Packaging, transportation and storage:

 bags

 big bags

Transportation by rail, road and water transport in accordance with applicable regulations.

Store in a dry insulated place.

Anhydrous calcium nitrate



Anhydrous calcium nitrate is widely used in various industries.

The product is often used in the oil and gas sector. During well work-overs, killing fluids are used, which create back pressure inside the well and plug it. Calcium nitrate allows killing fluids to be made with different density levels and therefore be used for a wide range of formation pressure values. An important advantage of calcium nitrate is that it does not cause clogging of the bottomhole area in a productive formation, which prevents adverse impacts on the well flow rate.

As an element of multi-purpose additives, calcium nitrate is used in concrete production: it reduces the freezing point, accelerates strength development of cold and hot concrete, increases water resistance, reduces efflorescence and ensures flat surface finishes.

Calcium nitrate can also be used in external finishing works, in the creation of foundations, construction of transport infrastructure and production of de-icing agents for airports.



Mass fraction of:	
- calcium, %, min	96
- water, %, max	3
- ammonium nitrogen, %, max	0.3*
Water-insoluble residue, %, max	0.1
Static strength of granules, MPa (kgf/cm ²), min	2.0 (20)
Particle size distribution, %	
Mass fraction of granules, mm	
- sized under 1 mm, %, max	10
- sized 1-4 mm, %, min	90
- sized under 6 mm, %	100
Friability, %	100

* Under an agreement with customers, mass fraction of ammonium nitrogen in terms of nitrogen can be limited to 0.1%



Packaging, transportation and storage:



Transportation by rail, road and water transport in accordance with applicable regulations.
Store in a dry insulated place.

Sodium nitrate



Sodium nitrate is used as a component of complex additives to reduce the freezing point of concrete slurries in construction.

Sodium nitrate also accelerates the strength development of the slurry and improves the quality of precast concrete structures. An important quality of sodium nitrate in the construction applications is its ability to inhibit corrosion of rebars. Sodium nitrate can also be used for external and internal finishing works. In glass-making, sodium nitrate improves optical properties of glass. As a strong oxidising agent, sodium nitrate is widely used as an additional oxidiser in the production of emulsion explosives and pyrotechnic products. In metalworking, sodium nitrate is used in the preparation of fluxes for soldering and welding of metals, and in etching and melting.



	Grade A	Grade B
Mass fraction of:		
- sodium nitrate in dry matter, %, min	99.8	99.5
- water, %, max	0.5	0.5
- water-insoluble substances, %, max	0.03	0.03
- chloride salts in terms of NaCl, %, max	0.15	0.3
- oxidisable substances in terms of NaNO_2 , %, max	0.01	0.2
- iron in terms of Fe_2O_3 , %, max	0.001	-
- chromium in terms of Cr_2O_3 , %, max	0.0001	-



Packaging, transportation and storage:



bags

Transportation by rail, road and water transport
in accordance with applicable regulations.

Store in a dry insulated place.

Sodium nitrite



Sodium nitrite is used as a gas generating additive in emulsion explosives, as a component in metalworking, and as an oxidising agent in well yield enhancement processes in the oil and gas sector. In construction, sodium nitrite is used as an anti-freeze additive.

Mass fraction of:

- sodium nitrite (<chem>NaNO2</chem>), %, min	98.5
- sodium nitrate (<chem>NaNO3</chem>), %, max	1.0
- sodium chloride (<chem>NaCl</chem>) in dry matter, %, max	0.17
- water-insoluble residue, %, max	0.03
- water, %, max	1.4



A

Acids



Packaging, transportation and storage:



tank cars

Transportation by railroad in special aluminium tanks in accordance applicable regulations.

Concentrated nitric acid (98%)
 HNO_3

Grade A is used in the production of electronic and radio products, in the nitration of organic compounds, in the production of explosives, in the chemical processing of metals and in other applications.

Grade B is used for galvanic operations, in the production of chemicals, and in the dissolution of impurities in industrial products.

	Grade A	Grade B
Mass fraction of:		
– nitric acid, %, min	98.6	97.5
– sulphuric acid, %, max	0.05	0.06
– nitrogen oxides (N_2O_3), %, max	0.2	0.3
– residue after calcination, %, max	0.014	0.025

Packaging, transportation and storage:



Transportation by railroad in special steel tanks in accordance applicable regulations.

Special nitric acid (75%)



Used in the production of nitro compounds and in the processing of fuel elements of nuclear reactors.



	Premium grade	First grade
Mass fraction of:		
- nitric acid, %, min	72	70
- chlorides, %, max	0.0003	0.0004
- iron, %, max	0.0005	0.001
- nitrogen oxides, %, max	0.1	0.2
- residue after calcination, %, max	0.005	0.01





Packaging, transportation and storage:



tank cars

Transportation by railroad in special steel tanks in accordance applicable regulations.

Non-concentrated nitric acid (57%)



Used in the production of ammonium nitrate, complex fertilisers, in metal etching, and in acid washing of equipment.

	Premium grade	Grade 1	Grade 2
Mass fraction of:			
- nitric acid, %, max	57	56	46
- itrogen oxides (in terms of N_2O_4), %, max	0.07	0.1	0.2
- residue after calcination, %, max	0.004	0.02	0.05

Packaging, transportation and storage:



tank cars

Transportation by rail and road transport in rubber-lined or other special tanks in accordance with applicable regulations.

Phosphoric acid extractive



Used in the production of concentrated fertilisers, technical and feed grade phosphates.



Mass fraction of:

– H_3PO_4 in the liquid clarified phase in terms of P_2O_5 , %, min	52
– sulphate sulphur in terms of SO_3 , %, max	4.5
– residue, %, max	5
– arsenic (As), %, max	0.004





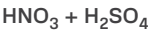
Packaging, transportation and storage:



tank cars

Transported by rail in specialised tank cars in line with applicable transportation regulations.

Acid melange



Used in the production of nitrating mixtures, semi-finished products, and synthetic colourants.



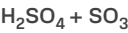
	Highest grade	First grade
Mass fraction:		
- nitric acid, % min	90	89.3
- sulphuric acid, % max	7.5	7.5
- nitrogen oxides (N ₂ O ₃), % max	0.3	0.3
- ignition residue, % max	0.02	0.04

Packaging, transportation and storage:



Transported by rail in specialised thermally insulated or heated tank cars in line with applicable transportation regulations.

Oleum



Used in the production of explosives, synthetic materials, and aniline colourants, and also in organic synthesis and petrochemical processes.



	Highest grade	First grade
Mass fraction:		
- free sulphur trioxide (SO_3), % min	24	19
- iron (Fe), % max	0.006	not regulated
- nitrogen oxides (N_2O_3), % max	0.0002	not regulated
- lead (Pb), % max	0.0001	not regulated
- ignition residue, % max	0.02	not regulated
- arsenic (As), % max	0.00008	not regulated





Other
products



Packaging, transportation and storage:



Liquid carbon dioxide is a cryogenic liquid and is filled into specialised tanker lorries.
Transportation by motor roads in special isothermal tankers designed for pressurised liquid gases.

Carbon dioxide



Liquid carbon dioxide is used in the food industry for carbonation of beverages and as a process gas, in mechanical engineering as a component of welding gas mixtures, and also in oil production to enhance oil recovery.



Volume fraction of carbon dioxide, %, min	99.8
Mass concentration of:	
– mineral oils, mg/kg	0.1
– water vapour at 20 °C g/m ³	0.037





Packaging, transportation and storage:



Transportation airtight containers by rail and road transport in accordance with applicable regulations.

Urea formaldehyde concentrate
UFC-85

Urea formaldehyde concentrate is used in woodworking in the synthesis of urea formaldehyde resins, in the production of foundry resins

	Grade UFC-85/i	Grade UFC-85
Mass fraction of:		
- total urea, % by weight	24.0 – 25.5	24.0 – 25.5
- total formaldehyde, % by weight	59.0 – 60.5	59.0 – 60.5
- dry residue, % by weight, max	0.3	0.3
- methanol, % by weight, max	0.3	0.3
- methylol groups, % by weight, min	10	10
Formaldehyde / urea molar ratio	4.6 – 5.0	4.6 – 5.0
Colour on the APHA scale at 2-25 °C, max	40	40
Content of uronic derivatives, % by weight, max	10	10
Concentration of hydrogen ions at 20 °C, pH units	7.0 – 9.0	7.0 – 9.0
Buffer capacity, ml, max	12	18

Packaging, transportation and storage:



Transportation by rail, road and water transport
in accordance with applicable regulations.
Store in a dry insulated place.

Enriched carnallite

Carnallite is used in the production of metallic
magnesium.



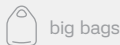
Mass fraction of:	
– magnesium chloride, %	31.5 ± 1.0
– sulphates in terms of calcium sulphate, %, max	0.05
– hygroscopic water, %, max	3.3

Typical values

Mass fraction of:	
– potassium chloride, %, max	25.3
– sodium chloride, %, max	5.3



Packaging, transportation and storage:



big bags



in bulk

Transportation by rail, road and water transport
in accordance with applicable regulations.

Store in a dry insulated place.

Halite mineral concentrate

Halite is used as a de-icing material for roads
and streets, as an oil well killing agent, in chemical
water treatment systems in recirculation heating
and in other industrial applications.



	Grade A	Grade B	Grade M
Guaranteed values			
Mass fraction of:			
– sodium chloride, %, min	97	93	95
Typical values			
Mass fraction of:			
– calcium sulphate, %, min	2.0	3.3	2.0
– magnesium sulphate, %, min	0.4	0.3	0.2
– potassium chloride, %, min	0.8	2.7	2.2
– water-insoluble residue, %, min	1.0	2.0	1.2
Particle size distribution, %			
Mass fraction of granules, mm:			
– sized under 2.5 mm, %	85	-	75
– sized 2.5-4.5 mm, min	-	85	5
– sized over 4.5 mm	10	15	-

Packaging, transportation and storage:



Supplied in 20 litre cans (20LG101), in special polymer IBCs and in bulk in tanks.

Transportation by rail, road and water transport in accordance with applicable regulations.

Store in original containers in indoor warehouses, away from moisture and direct sunlight at temperatures from -5 °C to 25 °C.

ADBLUE® NOx Reduction Agent
AUS-32

The product effectively lowers the concentration of nitrogen oxides in emissions from diesel vehicles.

The solution is consumed in selective catalyst reduction (SCR) of nitrogen oxides in diesel exhaust.



Mass fraction of:	
- urea, %	31.8 – 33.2
- biuret, %	≤ 0.3
Density at 20 °C, kg/m ³	
1087.0 – 1093.0	
Refractive index at 20 °C	
1.3814 – 1.3843	
Alkalinity in terms of free ammonia NH ₃ , %	
≤ 0.2	
Mass concentration, mg/kg:	
- aldehydes, mg/kg	≤ 5
- insoluble residue, mg/kg	≤ 20
- phosphates (PO ₄), mg/kg	≤ 0.5
- calcium, mg/kg	≤ 0.5
- iron, mg/kg	≤ 0.5
- copper, mg/kg	≤ 0.2
- zinc, mg/kg	≤ 0.2
- chromium, mg/kg	≤ 0.2
- nickel, mg/kg	≤ 0.2
- aluminium, mg/kg	≤ 0.5
- magnesium, mg/kg	≤ 0.5
- sodium, mg/kg	≤ 0.5

