



OSTCHEM

Nitrogen Fertilizers Catalogue

OSTCHEM: formation

OSTCHEM was established in 2010 as a company that operates Group DF nitrogen business enterprises.

The same year OSTCHEM purchased a controlling interest of two large-scale Ukrainian manufacturers of nitrogen fertilizers, PJSC “CONCERN STIROL” (Horlivka, Donetsk region) and PJSC “AZOT” (Cherkasy).

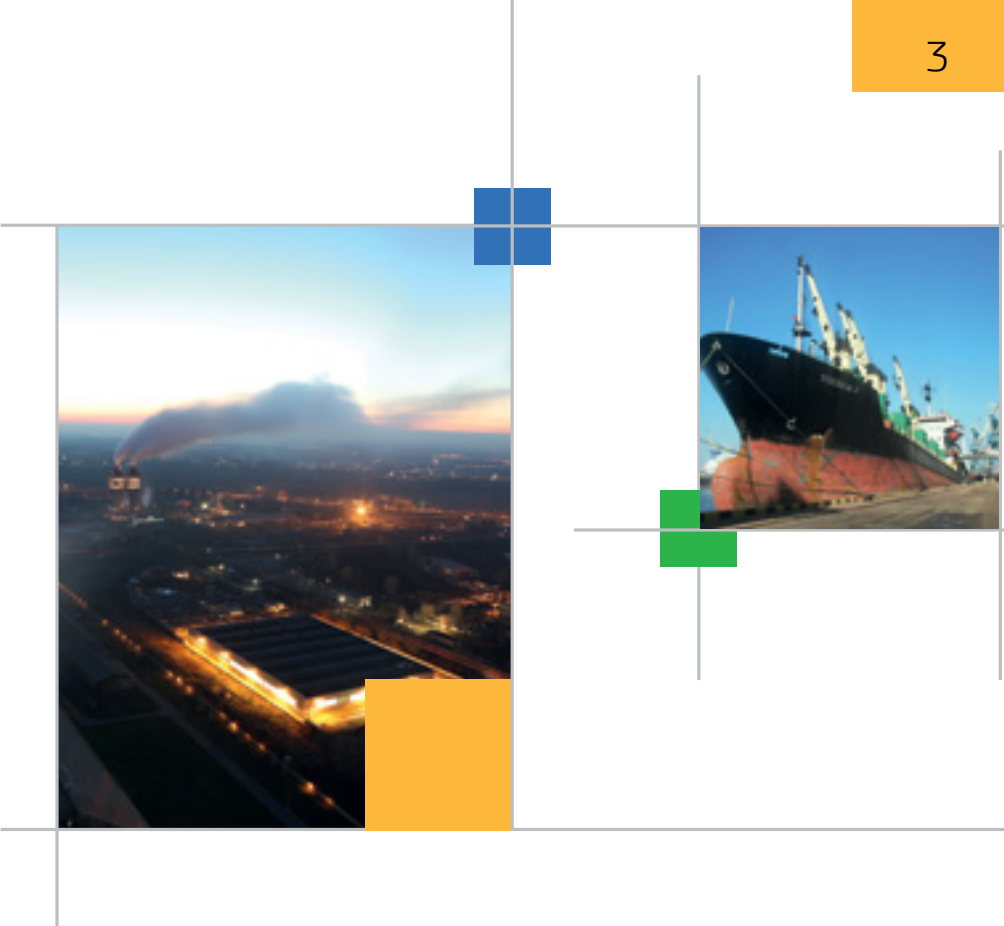


In 2011 OSTCHEM group acquired PrJSC “SEVERODONETSK AZOT ASSOCIATION” (Severodonetsk, Lugansk region) and PJSC “RIVNEAZOT” (Rivne).

One year later the acquisition of “Specialized Seaport Nika-Tera Ltd.” in Nikolaev and PrJSC “UkrAgro NPK” which is responsible for the distribution of products through its own Ukraine wide network strengthened OSTCHEM positioning.

PrJSC “UkrAgro NPK” has more than 25 warehouses for mineral fertilizers storage. This network of warehouses is the largest in Ukraine.

In 2014 Estonian nitrogen fertilizer producer AS “NITROFERT” joined OSTCHEM.



OSTCHEM production capacity
(nitrogen fertilizers, thousand tonnes
per year)

Plant	Liquid ammonia technical	Urea	Ammonium nitrate	CAN	UAN	Ammonium sulphate	Aqueous ammonia technical
STiROL	1 470	940	693	—	670	—	—
CHERKASY AZOT	964	760	1000	—	500	153	252
SEVERODONETSK AZOT	1020	390	550	—	—	—	60
R I V N E AZOT	420	—	540	450	—	—	470
NiTROFERT	180	220	—	—	—	—	30
OSTCHEM	4 054	2 310	2 783	450	1 170	153	812

OSTCHEM production capacity
(organic chemistry and other products,
thousand tonnes per year)

Plant	Adipic acid	Acetic acid	Methanol	Caprolactam	Polystyrene	Vinyl acetate	Liquid carbon dioxide
STiROL	—	—	—	—	58	—	64
CHERKASY AZOT	—	—	—	60	—	—	24
SEVERODONETSK AZOT	30	150	190	—	—	40	5
R I V N E AZOT	25	—	—	—	—	—	6
NiTROFERT	—	—	—	—	—	—	—
OSTCHEM	55	150	190	60	58	40	99

Aqueous ammonia technical

Normative document: GOST 9-92

Chemical formula: NH₃•H₂O

Application

According to its application aqueous ammonia technical is produced in two grades:

grade A – for use in various industries;

grade B – for use in agriculture as a nitrogen fertilizer.

Specifications

Description	Value	
	Grade A	Grade B
Appearance	Transparent colorless liquid	Transparent colorless or yellowish liquid
Ammonia, %, min	25	25
— as nitrogen, %, min	Not rated	20,5
Non volatile residue, g/dm ³ , max	0,07	Not rated
CO ₂ , g/dm ³ , max	Not rated	8

Produced at OSTCHEM production sites: PJSC “AZOT” (Cherkasy), PJSC “RIVNEAZOT”, PrJSC “SEVERODONETSK AZOT ASSOCIATION”, AS “NITROFERT”

Storage and transportation

Aqueous ammonia technical is stored indoors in leak-tight packaging or in special storage containers.

Aqueous ammonia technical is transported by railway, by road, and by water in leak-tight transportation facilities in accordance with cargo carriage regulations applicable to a particular transportation mode.

Guaranteed storage life: 3 months from the date of manufacture.

Liquid ammonia technical (anhydrous ammonia)

Normative document: GOST 6221-90

Chemical formula: NH₃

Application

According to its application liquid ammonia technical is produced in 3 grades:

grade A – for nitrogen acid production, for nitration, as a coolant, for creating protective atmospheres;

grade Ak – for exporting;

grade B – for processing into fertilizers and for usage in agriculture as a nitrogen fertilizer.

Specifications

Description	Value		
	Grade A	Grade Ak	Grade B
Ammonia, %, min	99,9	99,6	99,6
Nitrogen content, %, min	–	82	82
Water (evaporation residue), %	–	0,2–0,4	0,2–0,4
Water (the Fischer method), %, max	0,1	–	–
Oil, mg/dm ³ , max	2	2	8
Iron, mg/dm ³ , max	1	1	2
Total Chlorine, mln ⁻¹ (mg/kg), max	–	0,5	–
Carbon monoxide (IV), mln ⁻¹ (mg/kg), max	–	30±10	–

Produced at OSTCHEM production sites: PJSC “AZOT” (Cherkasy), PJSC “CONCERN STIROL”, PJSC “RIVNEAZOT”, PrJSC “SEVERODONETSK AZOT ASSOCIATION”, AS “NITROFERT”

Storage and transportation

Liquid ammonia technical is stored in land-based tanks in warehouses in accordance with security rules for ground storage of synthetic liquid ammonia. Cylinders filled with liquid ammonia technical are stored in special warehouses or on open areas under cover, that protects cylinders from precipitation and direct sunlight.

Liquid ammonia technical is transported in special railway or car tanks, in steel cylinders in covered vehicles, in tankers or via pipeline.

Guaranteed storage life: 1 year from the date of manufacture.

Calcium ammonium nitrate (CAN)

Normative document: TU UA 24.1-05607824-041-2004

Application

Calcium ammonium nitrate (CAN) is used in agriculture as fertilizer.

Storage and transportation

Calcium ammonium nitrate can be transported by all means of transportation in accordance with cargo carriage regulations applicable to a particular transportation mode. It is allowed to transport CAN by railway in bulk in covered hopper cars.

Packaged CAN is stored in sheltered, dry, vented space, which protects product from moistening. At least 1 meter of free space between roof and bags must be secured or vented shed should be used. CAN must be protected from direct sunlight and rapid temperature changes.

It is allowed to store CAN in bulk in dry, ventilated and cold warehouses (with max. temperature 32 °C)

Guaranteed storage life:

9 months for bulk, 24 months for retail sales from the date of manufacture.

No expiration date as fertilizer.



Specifications

	Value	
Description	Grade A	Grade B
Appearance	Light gray to brownish-red grains	
Total nitrogen (N), %	25–28	20–24
including nitrate form (NO ₃), %	12–14	10–12
Calcium oxide (CaO), %	4–16	9–22
Magnesium oxide (MgO), max, %	6,0	6,0
Total carbonates as calcium carbonate (CaCO ₃), %	12–28	28–40
Calcium nitrate (Ca(NO ₃) ₂), %, max	1,5	1,5
Water, %, max	0,8	0,8
pH of 10% aqueous solution	6,5–7,5	6,5–7,5
Free flowing, %	100,0	100,0
Granule static strength, N/granule (kg/granule), min	15	15
Granulometry, %:		
less than 1 mm particles, max	3	3
1 mm to 5 mm particles, min	90	90
more than 6 mm particles, max	0	0

Produced at OSTCHEM production site: PJSC “RIVNEAZOT”

Urea

Normative document: GOST 2081-92 (DSTU 7312:2013)

Chemical formula: CO(NH₂)₂

Application

Urea is intended for use in industry as a raw material for production of resins, adhesives, etc., for use in agriculture as a nitrogen fertilizer.

According to its application urea is produced in 2 grades:

grade A – for industry;

grade B – for agriculture.

Storage and transportation

Urea is stored in covered warehouses that protect product from precipitation. If urea is stored in bulk it is not allowed to mix it with other kinds of fertilizers. Urea packed in containers and transport packages wrapped up with synthetic film can be stored on open areas.

Measures should be taken to avoid spillage of product and contamination of environment.

Urea is transported both packed (in bags, containers, transport packagings) and in bulk by all means of transportation in accordance with cargo carriage regulations applicable to a particular transportation mode.

Guaranteed storage life: 6 months from the date of manufacture.



Specifications

Description	Value				
	Grade A		Grade B		
	Premium quality	First quality	Premium quality	First quality	Second quality
Nitrogen (in terms of dry substance), %, min	46,3	46,2	46,2	46,2	46,2
Free ammonia, %, max	0,02	0,03	–	–	–
Biuret, %, max	0,6	1,4	1,4	1,4	1,4
Water, %, max:					
drying method	0,3	0,3	0,3	0,3	0,3
the Fischer method	0,6	0,6	0,5	0,5	0,6
Friability, %	–	–	100	100	100
Granulometry, %:					
1–4 mm, min	–	–	94	94	94
2–4 mm, min	–	–	70	50	–
less than 1 mm, max	–	–	3	5	5
sieve residue 6 mm, max	–	–	Absence	Absence	Absence
Static strength of granules, kgf/granule, min	–	–	0,7	0,5	0,3

Produced at OSTCHEM production sites: PJSC “AZOT” (Cherkasy), PJSC “CONCERN STIROL”, PrJSC “SEVERODONETSK AZOT ASSOCIATION”, AS “NITROFERT”

Urea granulated

Normative document: TU U 24.1-05761614-060:2007

Chemical formula: CO(NH₂)₂

Application

Urea granulated is intended for use in industry as a raw material for production of resins, adhesives, etc., for use in agriculture as mineral nitrogen fertilizer including dry complex fertilizing.

Depending on purpose, 2 grades of urea are produced:

grade A – for industry;

grade B – for agriculture as mineral fertilizer.

Urea granulated of grade B is produced in premium, first and second quality.



Storage and transportation

Packed urea granulated or in bulk is stored in warehouses protecting the product from precipitation and pollution.

Urea granulated is transported both packed (in bags, containers, transport packagings) and in bulk by all means of transportation, except by air, in accordance with cargo carriage regulations applicable to a particular transportation mode.

Guaranteed storage life: 6 months from the date of manufacture.

Specifications

Description	Value			
	Grade A	Grade B		
		Premium quality	First quality	Second quality
Nitrogen (in terms of dry substance), %, min	46,2	46,2	46,2	46,2
Biuret, %, max	1,4	1,4	1,4	1,4
Free ammonia, %, max	0,03	–	–	–
Water, %, max:				
drying method	0,3	0,3	0,3	0,3
the Fischer method	0,6	0,6	0,6	0,6
Granulometry, %:				
2-5 mm, min	–	95	95	95
1-4 mm, min	–	–	–	–
2-4 mm, min	–	–	–	–
less than 1 mm, max	–	3	5	5
sieve residue 6 mm, max	–	Not rated	Not rated	Not rated
Static strength, kgf/granule, min	–	2,5	2,0	1,5
Friability, %	100	100	100	100

Produced at OSTCHEM production site: PJSC “CONCERN STIROL”

Ammonium nitrate

Normative document: DSTU 7370:2013

Chemical formula: NH₄NO₃

Application

Ammonium nitrate is used in agriculture as fertilizer and as a raw material in chemical industry.

Storage and transportation

Packed ammonium nitrate is stored in dry and clean covered warehouses that protect product from precipitation. Ammonium nitrate packed in paper bags or in bulk is stored in temperature (≤ 30 °C) and humidity (≤ 50%) regulated warehouses. If ammonium nitrate is stored in bulk it is not allowed to mix it with other kinds of fertilizers. Ammonium nitrate packed in containers is allowed to store on open areas within one month.

Ammonium nitrate is transported in packages and in bulk by all means of transportation, except by air, in accordance with cargo carriage regulations applicable to a particular transportation mode. Ammonium nitrate is stored and transported separately from other materials and substances.

Guaranteed storage life: 6 months from the date of manufacture.
No expiration date as fertilizer.



Specifications

Description	Value		
	Grade A	Grade B	
		Premium quality	First quality
Total nitrate and ammonium nitrogen in terms of:			
NH ₄ NO ₃ in dry matter, %, min	98	Not rated	Not rated
Nitrogen in dry matter, %, min	Not rated	34,4	34,4
Water, %, max:			
with sulphate and sulphate phosphate additives	0,2	0,2	0,2
with calcium and magnesium nitrate additives	0,3	0,3	0,3
pH of 10% water solution, min	5,0	5,0	5,0
with sulphate-phosphate additives	4,0	4,0	4,0
Substances insoluble in 10% nitric acid solution, %, max	0,2	Not rated	Not rated
Granulometry, %:			
1–3 mm, min	93	Not rated	Not rated
1–4 mm, min	Not rated	95	95
including: 2–4 mm, min	Not rated	80	50
less than 1 mm, max	4	3	3
more than 6 mm, %	0,0	0,0	0,0
Static strength of granules, N/granule (kgf/granule), min	5 (0,5)	–	7 (0,7)
with sulphate and sulphate-phosphate additives	–	10 (1,0)	–
with calcium and magnesium nitrate additives	–	8 (0,8)	–
Friability, %	100	100	100

Produced at OSTCHEM production sites: PJSC “AZOT” (Cherkasy), PJSC “CONCERN STIROL”, PJSC “RIVNEAZOT”, PrJSC “SEVERODONETSK AZOT ASSOCIATION”

Residue product of ammonium nitrate production

Normative document: TU U 6-05761614.019-99

Chemical formula: NH_4NO_3

Application

Residue product of ammonium nitrate production (hereinafter – residue product) is used in agriculture as mineral fertilizer.

Specifications

Description	Value
Appearance	Non-polluted with organic substances product consisting of destroyed and pressed granules
Total nitrate and ammonium nitrogen based on nitrogen in dry matter, %, min	34

Produced at OSTCHEM production site: PJSC “CONCERN STIROL”

Storage and transportation

P/e bag-packed residue product is stored in dry and clean covered warehouses protected from precipitation. Residue product packed in paper bags or in bulk is stored in temperature ($\leq 30\text{ }^{\circ}\text{C}$) and humidity ($\leq 50\%$) regulated warehouses. While storing ammonium nitrate in bulk it is not allowed to mix it with other kinds of fertilizers, particularly with urea. Residue product packed in containers is allowed to store on open areas within 1 month after production.

Residue product is transported both packed and in bulk by all means of transportation, except by air, in accordance with cargo carriage regulations applicable to a particular transportation mode. Residue product is stored and transported separately from other materials and substances.

Guaranteed storage life: 3 months from the date of shipment.



Potassium nitrate technical

Normative document: GOST 19790-74

Chemical formula: KNO₃

Application

According to its application potassium nitrate technical is produced in the following grades:

grade B – for production of gunpowder and special mixtures, for decolorization and clarification of crystal glass, for glassware reinforcement.

grade V – for production of enamels, thermal salts and heat-transfer agents, for decolorization and clarification of industrial glass, for retail trading.

Storage and transportation

Potassium nitrate technical is stored in packages in closed warehouses.

Potassium nitrate technical is transported by top-covered r/w cars, top-covered deck vessels and top-covered trucks in accordance with cargo regulations applicable to a particular transportation mode.

Handling, transportation and storage of potassium nitrate technical together with inflammable matters, mineral acids, cyanic potassium, rhodanides as well as mixing it with sawdust, straw, coal, peat and other organic matters are not allowed to avoid spontaneous ignition, fire and explosion.

Guaranteed storage life is not limited.



Specifications

Description	Value	
	Grade B	Grade V
Appearance	White crystals of yellowish-grayish colour	
Potassium nitrate, %, min	99,90	99,85
Water, %, max	0,08	0,1
Chlorine salts as NaCl, %, max	0,017	0,03
Carbonates as K ₂ CO ₃ , %, max	0,01	0,01
Water insoluble residue, %, max	0,01	0,03
Components oxidized with potassium permanganate as KNO ₂ , %, max	0,01	0,01
Calcium and magnesium salts, as Ca, %, max	0,002	0,02
Iron, %, max	0,005	–

Produced at OSTCHEM production site: PrJSC “SEVERODONETSK AZOT ASSOCIATION”

Potassium nitrate technical with anticaking agent

Normative document: TU U 24.1-33270581-022:2009

Chemical formula: KNO₃

Application

According to its application potassium nitrate technical with anticaking agent is produced in the following grades:

grade B – in production of gunpowder, special mixtures and in agriculture as mineral fertilizer;

grade V – in manufacture of enamels, thermosalts, heat media, for decolorization and clarification of industrial glass, in agriculture as a mineral fertilizer, and also for retail trading.

Storage and transportation

Potassium nitrate technical with anticaking agent is stored in packages in closed warehouses.

Potasium nitrate technical with anticaking agent is transported in accordance with cargo carriage regulations applicable to a particular transportation mode:

by railway transport – in top covered r/w wagons;

by motor transport – in top covered transport facilities;

by marine and water inland transport – in closed cargo rooms or on decks of cargo vessels under shelter.

Loading, unloading, transportation and storage conditions must avoid contact of potassium nitrate technical with anticaking agent with combustible substances, mineral acids, potassium cyanide, rhodanides, and mixing with saw dust, resin, coal, turf and other organic substances to prevent auto ignition, fire and explosion.

Guaranteed storage life: 1 year from the date of manufacture.

Best before period is unlimited.

Specifications

Description	Value	
	Grade B	Grade V
Appearance	White crystals of yellowish-grayish colour	
Potassium nitrate, %, min	99,90	99,85
Water, %, max	0,08	0,1
Chloride salt as sodium chloride, %, max	0,017	0,03
Carbonate as potassium carbonate, %, max	0,01	0,01
Water insoluble residue, %, max	0,01	0,03
Substances oxidized with potassium permanganate as KNO ₂ , %, max	0,01	0,01
Calcium and magnesium salts as Ca, %, max	0,002	0,02
Iron, %, max	0,005	–
Sulphonol, %	0,05–0,30	0,05–0,30
Petro-AG, %	0,05–0,20	0,05–0,20

Produced at OSTCHEM production site: PrJSC “SEVERODONETSK AZOT ASSOCIATION”

Ammonium sulphate

Normative document: GOST 9097-82

Chemical formula: $(\text{NH}_4)_2\text{SO}_4$

Application

Ammonium sulphate is used in different sectors of industry and agriculture.

Storage and transportation

Ammonium sulphate is stored in covered warehouses that protect product from moisture. Containers with ammonium sulphate are stored at open areas.

Ammonium sulphate is transported in bulk and packed.

Packed ammonium sulphate is transported by all types of transport, except by air, in covered means of transport in accordance with cargo carriage regulations applicable to a particular transportation mode.

Ammonium sulphate in bulk is transported in special wagons, mineral wagons or hoppers, in covered wagons, equipped with shields on both doors, and in covered trucks.

Guaranteed storage life: 6 months from the date of manufacture.



Specifications

Description	Value
Appearance	White or clear crystals
Nitrogen in terms of dry substance, %, min	21
Water, %, max	0,2
Free sulphuric acid, %, max	0,03
Granulometry, %:	
more than 0,5 mm, min	80
less than 6 mm	100
Friability, %	100
Residue insoluble in water, %, max	0,02

Produced at OSTCHEM production site: PJSC “AZOT” (Cherkasy)

Liquid nitrogen fertilizers (UAN)

Normative document: TU U 24.1-00203826.024-2002

Chemical composition

UAN is a mixture of urea and ammonium nitrate. Composition: aqueous solution of urea and ammonium nitrate.

Application

UAN is used in agriculture as mineral fertilizer for direct feeding of plants or mixing with liquid complex fertilizers.

Storage and transportation

UAN is stored in tanks of carbon or alloy steel with hatches tightly closed.

UAN is transported by railway or by car in accordance with cargo carriage regulations applicable to a particular transportation mode.

Special railway tanks (models 15-1443, 15-1613-01) and tank cars are used for UAN transportation.

Guaranteed storage life: 6 months from the date of manufacture.

Specifications

Description	Value		
	UAN-28	UAN-30	UAN-32
Density, g/cm³	1,265–1,285	1,285–1,306	1,306–1,326
Alkalinity, %	0,05–0,50	0,05–0,50	0,05–0,50
Ammonium nitrate, %	37,0–42,0	40,0–45,0	43,0–48,0
Urea, %	29,0–33,0	31,0–35,0	33,0–37,0
Inhibitors: orthophosphates and total phosphates in terms of P ₂ O ₅ , %	0,20–0,50	0,20–0,50	0,20–0,50
Total nitrogen, %	27,0–29,0	29,0–31,0	31,0–33,0

Produced at OSTCHEM production sites: PJSC “AZOT” (Cherkasy), PJSC “CONCERN STIROL”



 <p>PJSC “CONCERN STIROL”</p>	<p>10 Horlivskoi Divizii Street, Horlivka, Donetsk region, 84610, Ukraine Tel.: +380 6242 7-89-26 Fax: +380 6242 7-82-43 www.ostchem.com</p>
 <p>PJSC “AZOT”</p>	<p>72 Pershotravneva Street, Cherkasy, 18014, Ukraine Tel.: +380 472 39-63-03, 39-61-27 Fax: +380 472 54-01-46, 64-03-36 www.ostchem.com</p>
 <p>PJSC “RIVNEAZOT”</p>	<p>Rivne-17, 33017, Ukraine Tel.: +380 362 61-22-03 Fax: +380 362 61-80-10 www.ostchem.com</p>
 <p>PrJSC “SEVERODONETSK AZOT ASSOCIATION”</p>	<p>5 Pivovarova Street, Severodonetsk, Luhansk region, 93403, Ukraine Tel.: +380 645 71-32-75, 71-21-71, 71-29-92 Fax: +380 645 71-45-88, 71-24-99, 71-33-01 www.ostchem.com</p>
 <p>AS “NITROFERT”</p>	<p>1 Järveküla tee, Kohtla-Järve, 30197, Estonia Tel.: +372 337-83-10 Fax: +372 337-84-90 www.ostchem.com</p>

