

Industry teaser on inorganic  
chemistry

December 2021



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# Sector overview. Conclusions and recommendations.



The transition to the production of composite materials using technological components is possible only if the chemical industry develops in accordance with current global trends.

- According to the Kazakhstan general classifier of economic activity ("GCEA NK RK 03-2019"), inorganic chemistry production corresponds to code 20.13 "Production of various main inorganic chemical substances", which includes chemical element production (except for industrial gases and base metals), inorganic acid production, except for nitric acid; alkali, leachate and other inorganic substance production, except for ammonia; inorganic mixture production; iron pyrite baking; distilled water production, and code 20.15 "Fertiliser and nitrogen mixture production", which include fertiliser and nitrogen mixture production.
- According to MarketGrowth, the global inorganic chemical market will grow from 262 billion USD in 2020 to 316 billion USD by 2026, with CAGR at 3.1% between 2021 and 2026. The greatest slowdown in the global inorganic chemical market in 2020 was caused by the COVID-19 pandemic, which brought about global economic decline. In 2020, chemical industry production in Kazakhstan reached 1,134 mln USD, which accounts for 3.6% of the total processing industry, and 1.8% of the total industry sector.
- The inorganic chemical product range in Kazakhstan is represented by sulphuric acid, caustic soda, ammonia, ethanol, carbon dioxide; chrome sulphides, sulphites and sulphates, oxides and hydroxides, carbides, nitrogen and phosphate fertilisers.



## Sufficient raw materials base

- To develop local production, Kazakhstan needs to take advantage of its raw materials base; adopt global management experience in the inorganic chemical sphere. Kazakhstan's raw materials base has the capacity to develop new directions and generate new inorganic chemical products, and increase existing production in the country. Kazakhstan has the 6<sup>th</sup> largest natural resource reserves in the world. The country's subsoil is home to 99 of 110 periodic table elements. Of these, 70 have been explored, 60 - extracted and used. The Kazakhstan mineral resource base consists of roughly 5,000 fields, whose estimated value is 10 trillion USD.



## High import dependence and today's challenges

- The chemical industry, including inorganic chemistry, plays a significant role in the global economy, and has significant impact on key industry sectors, such as the construction and agricultural industries. Given current material levels, the trend for transitioning to composite materials using technical components would be impossible without the chemical industry. Chemical engineering is key for the production of many materials vital to development of the country, economic growth and ensuring national security.
- However, current chemical industry capacity does not cover domestic product demand. High dependence on inorganic chemical product imports has been seen in practically all groups, which has brought about the need to launch and build up contemporary industrial facilities using modern technology; generate export-focused and competitive products; saturate the domestic market with local products. Given Kazakhstan's geographical proximity to major markets such as China, Central Asia and Russia, domestic inorganic chemical producers have the opportunity to develop exports.



## State support

- Inorganic chemical production is recognised as a priority sector of the economy eligible for state support within the framework of the Entrepreneurial Code, cheap financing programmes, SEZ access and others.

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# Classification of inorganic chemistry products

## Classification of inorganic chemistry products according to the GCEA RK 2019



According to the GCEA RK, the inorganic chemical sector is part of the country's chemical industry. Inorganic chemical products are represented in two subclasses: **20.13** "Production of various main inorganic chemical substances" and **20.15** "Fertiliser and nitrogen mixture production"



### Chemical elements

This segment includes inorganic chemical element production (except for industrial gases and base metals)

### Organic acids

This segment includes organic acid production, except for nitric acid

### Alkalis, leachates and other inorganic substances except for ammonia

This segment includes alkali, leachate and other organic substance production except for ammonia

### Various organic mixtures

This segment includes organic mixture production

### Baking of iron pyrite

This segment includes iron pyrite baking

### Distilled water production

This segment includes distilled water production

### Production of nitrogen fertiliser

This segment includes nitrogen fertiliser production

### Production of phosphate fertilisers

This segment includes phosphate fertiliser production

### Production of potash fertilisers

This segment includes potash fertiliser production

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# Classification of inorganic chemistry products

## Classification of inorganic chemistry products according to the FEA CN



According to the FEA CN, inorganic chemical production incorporates the Kazakhstan chemical industry. Inorganic chemicals in Kazakhstan are made up of chemical acid, inorganic acid, non-metal compounds, alkalis and their salts, etc.



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### Chemical elements

This segment includes inorganic chemical elements such as fluorine, chlorine, hydrocarbons, hydrogen, alkali elements and others

### Inorganic acids and non-metal compounds with inorganic oxygen

This segment includes inorganic acid, and non-metal compounds with inorganic oxygen

### Non-metal halogen or sulphur compounds

This segment includes non-metal compounds with halogens or sulphur

### Inorganic bases, metal oxides, hydroxides and peroxides

This segment includes inorganic bases, metal oxides, hydroxides and peroxides

### Inorganic acid and metal salts and peroxides

This segment includes inorganic acid and metal salts and peroxides

### Other inorganic products

This segment includes various inorganic products not included in the main sections



# Inorganic chemical production



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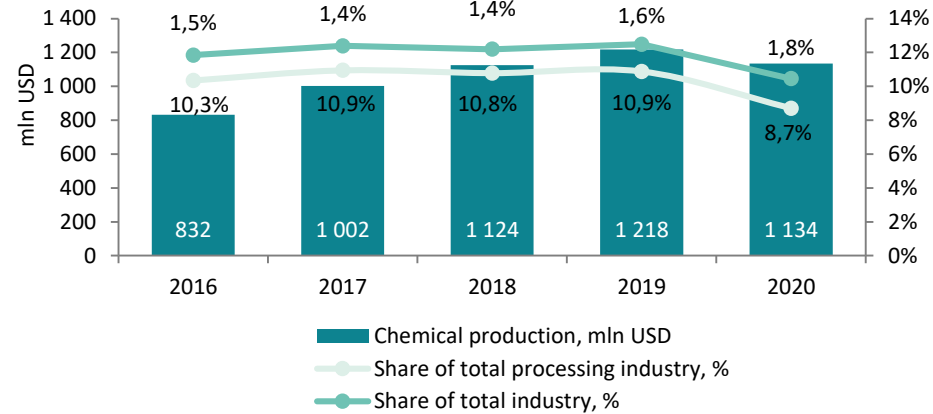
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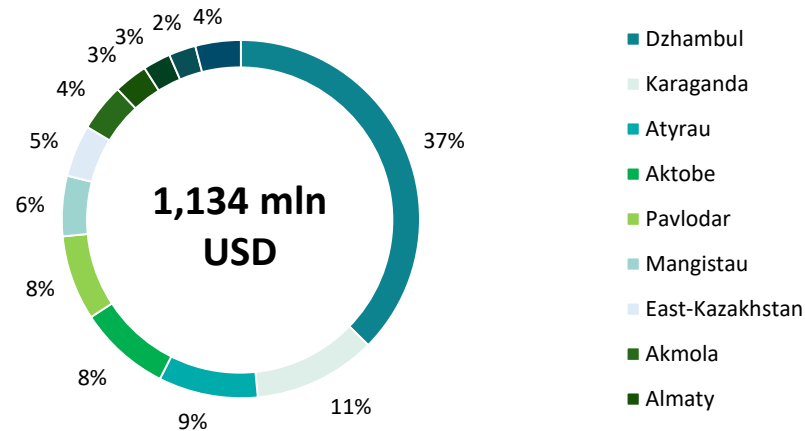
# Chemical production in Kazakhstan

- The chemical industry is one of the most high-technology sectors in Kazakhstan, and, thanks to targeted state support, accounts for a greater share of the processing industry year-on-year.
- Chemical industry production was worth 1,134 mln USD in 2020, while its share of the processing industry was 3.6%, and 1.8% of total industry.
- On the whole, chemical production in Kazakhstan grew 65% in the last 5 years, with product range expanding. Polypropylene, shampoo and cosmetics production was also launched in Kazakhstan in addition to sodium tripolyphosphate, ethanol, phosphate fertiliser, yellow phosphorous, nitrogen fertiliser, detergent, hydrochloric acid, caustic soda, cement additive, paint material, chrome anhydride, primary form polyurethane, sulphuric acid, primary form polystyrene and ammonia production.
- The national chemical industry is represented by 795 enterprises, of which 12 or 2% are recognised as large, and the remaining 783 or 98% as small and medium-sized businesses. Nearly 50% of production is performed in two regions – Dzhambul Oblast (37%) and Karaganda Oblast (11%).
- The driver of sector growth in Kazakhstan is agricultural chemistry, which has grown mostly thanks to annual crop area increases. The household chemical is very promising as domestic household chemicals and cosmetics are popular in supermarkets. Kazakhstan produces solid detergent soap, liquid soap, organic surface cleaners, industrial detergents, washing powders, shampoo, detergents, dry-cleaning products, disinfectants and personal hygiene products.

Changes in chemical production in Kazakhstan



Structure of chemical industry production in Kazakhstan by oblast in 2020



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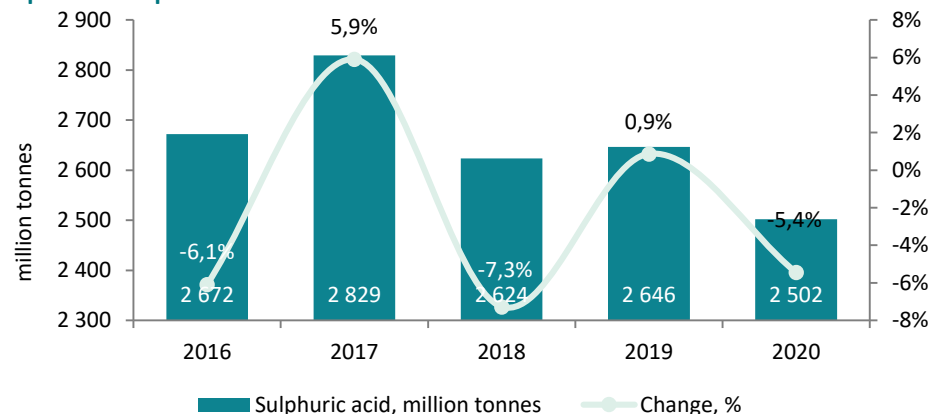
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# Inorganic chemical production in Kazakhstan: sulphuric acid and caustic soda

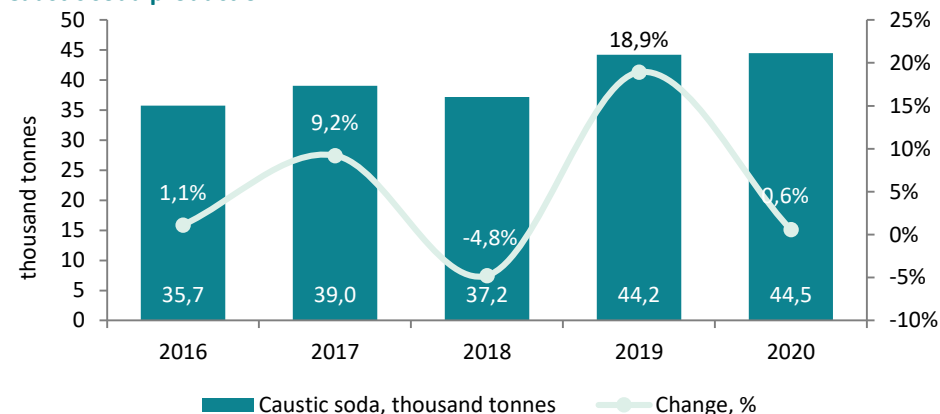


## Sulphuric acid production



- Sulphuric acid is a strong diatomic acid that meets the highest sulphur oxidation requirements. Under normal conditions, concentrated sulphuric acid is a heavy, colourless and odourless oily liquid. It is made up of sulphur, metal sulphides, hydrogen sulphide, residual thermal power station gases, iron, calcium and other sulphates.
- Sulphuric acid is produced at non-ferrous metallurgy enterprises, factories producing phosphate fertilisers and directly at sulphuric acid production plants. In industry, sulphuric acid is produced using the contact method by oxidising sulphur dioxide, which is generally produced as a result of sulphur or metal sulphide combustion processes.
- Companies produce technical, battery and reactive sulphuric acid, which differs in terms of purpose and basic component and admixture content.
- In 2016-2020, sulphuric acid production in Kazakhstan averaged 2.7 million tonnes. Sulphuric acid production CAGR in the last 5 years was -1.6%.

## Caustic soda production



- Caustic soda (sodium hydrate), which in chemical composition terms is known as sodium hydroxide, is made up of 2.13g/cm<sup>3</sup> white crystals. The main raw materials in the production of caustic soda are salts (most often sodium chloride). The caustic soda production process involves electrolysis of sodium chloride solution.
- A range of electrochemical methods are used to create caustic soda, with the simplest being the orifice method, energy-efficient membrane method and mercury cathode electrolysis.
- Between 2016 and 2020, caustic soda production in Kazakhstan increased 24% to 44.5 thousand tonnes.
- JSC Caustic in Pavlodar is currently the only major caustic soda producer using the membrane method in Kazakhstan.

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# Inorganic chemical production in Kazakhstan: hydrochloric acid and carbon dioxide

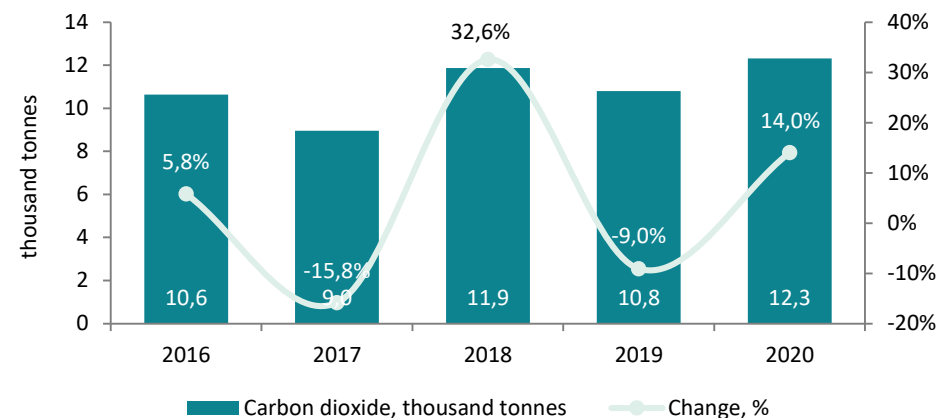


## Hydrochloric acid production

	2013	2014	2015	2016	2017	2018	2019	2020	January-September 2021
Hydrochloric acid	15,953	39,152	38,507	43,803	54,963	45,000	n/a	n/a	22,656

- Hydrochloric acid is produced using the sulphate method, where concentrated sulphuric acid reacts with sodium chloride, with the resulting hydrogen chloride dissolved in water.
- Synthetic hydrochloric acid is produced from hydrogen chloride, which is a product of hydrogen combustion in chlorine.
- Waste hydrochloric acid is produced from hydrogen chloride, which is a by-product involving chlorine-containing raw materials.
- Hydrochloric acid produced in Kazakhstan is used in the production cycle, although official statistics are not kept. The table above shows the minimum amounts of hydrochloric acid produced in Kazakhstan.
- According to the Kazakhstan Statistics Committee, Kazakhstan companies shipped 22.7 thousand tonnes of hydrochloric acid in the first three quarters of 2021. The largest producer is JSC Caustic, whose annual capacity is 45 thousand tonnes.
- Hydrochloric acid is widely used in metallurgy to extract ore, remove rust, cinder, dirt and oxide, and in soldering and tin-plating.

## Carbon dioxide production



- Carbon dioxide is released at low liquid temperatures, high liquid and gas pressure.
- In industry, carbon dioxide gas is generated by furnace gases, natural carbonate decomposition (limestone and dolomite). Gas mixtures are leached with a potassium carbonate solution, which absorbs carbon dioxide gas, transitioning into hydrocarbonate. Hydrocarbonate dissolves on heating, freeing up carbon dioxide.
- In 2016-2020, annual carbon dioxide production averaged 10.9 thousand tonnes.

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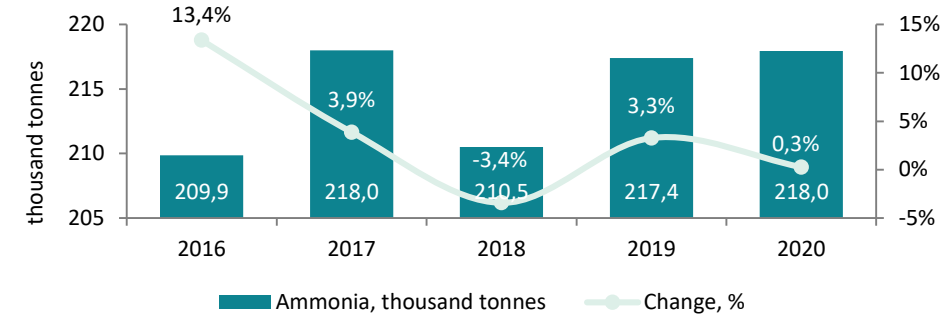
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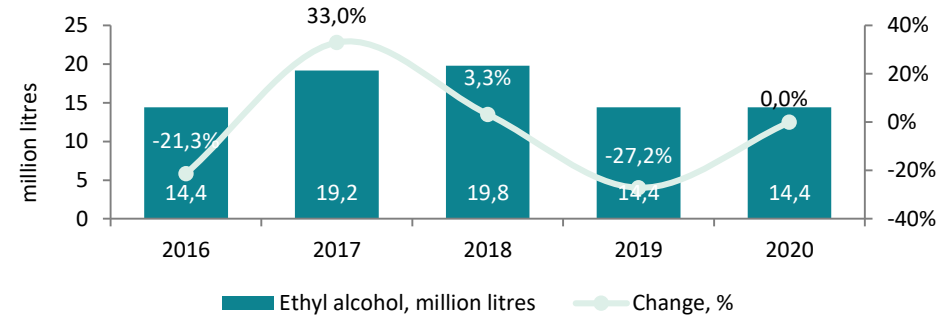
# Inorganic chemical production in Kazakhstan: ammonia and ethanol



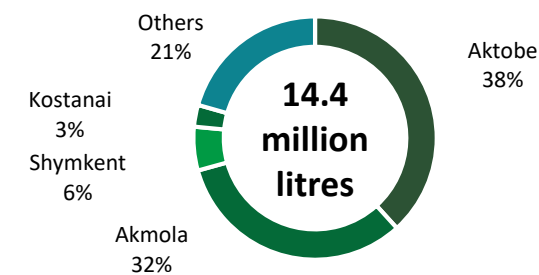
Ammonia production



Ethanol production



Structure of ethanol production by region in Kazakhstan in 2020



- Ammonia in normal conditions is a colourless gas that is nearly half as light as air, with a sharp and characteristic odour. Solid ammonia is made up of cubic-grid, colourless crystals. It is produced by fusing hydrozoic alloys at temperatures of 380-450°C using an iron catalytic agent.
- Raw materials used to produce ammonia may include coke, coal, coke gas or natural gas. However, ammonia is mostly produced from natural gas.
- In Kazakhstan, the sole ammonia producer is KazAzot LLP, which, in 2020, produced 218 thousand tonnes of ammonia, with CAGR of 1%.
- Ethanol is a colourless flammable liquid. Technical ethanol is mostly produced from oil and cellulose through chemical hydrolysis, while edible ethanol is generated from products containing large quantities of starch.
- In 2020, ethanol production in Kazakhstan reached 14.4 million litres, predominantly in Aktobe (38%) and Akmola Oblasts (32%).

- Ethanol is a raw material used to produce a number of chemical substances such as aldehyde, ethyl oxide, lead tetraethyl, acetic acid, chloroform, acetic ether, ethylene and others. It is a component of antifreeze and windscreen washer, and also used in domestic cleaning products and detergents, in particular to clean glass and bathroom fixtures. It is also widely used in medicine and perfumery. Ethanol is commonly used in alcohol production.

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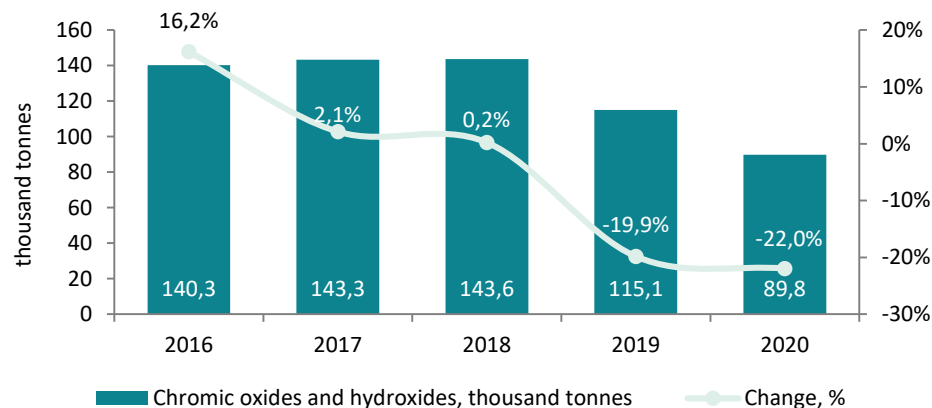
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# Inorganic chemical production in Kazakhstan: chromic oxides and hydroxides

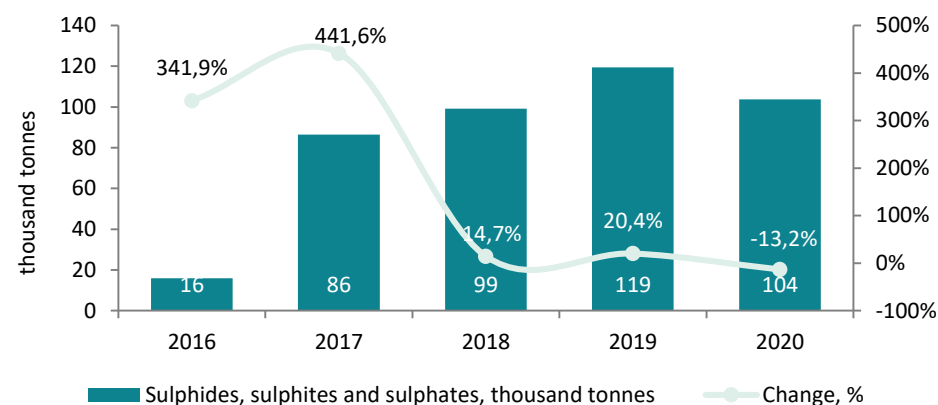


Chromic oxide and hydroxide production

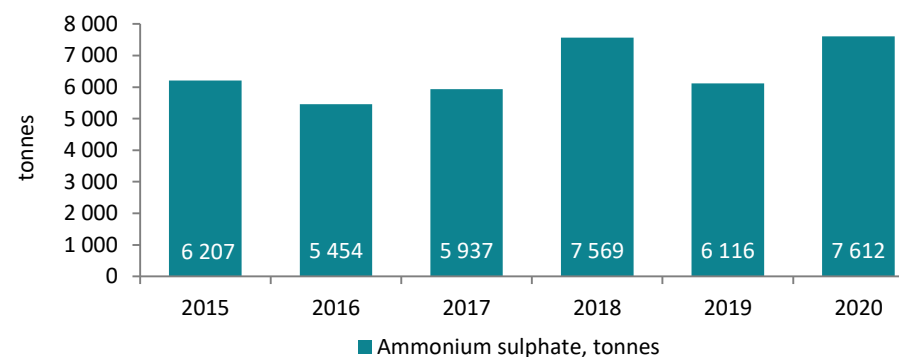


- In Kazakhstan, JSC Aktobe Chrome Compound Plant is the only enterprise producing sodium dichromate, chromic oxide, chromic anhydride and chromic sulphate (chrome tanning agent). The plant's proximity to a chrome ore production location is an important competitive advantage. It is the second largest producer and exporter after BritishChrome. Chromic oxide is used in polishing as an abrasive component, and also used in watch and instrument making and mechanical engineering sectors.
- In 2020, chromic oxide and hydroxide production fell 22% to 89.9 thousand tonnes. In this respect, CAGR was at -9% for 2016-2020.
- In 2020, sulphide, sulphite and sulphate production fell 13.2% to 104 thousand tonnes.

Sulphide, sulphite and sulphate production



Ammonium sulphate production



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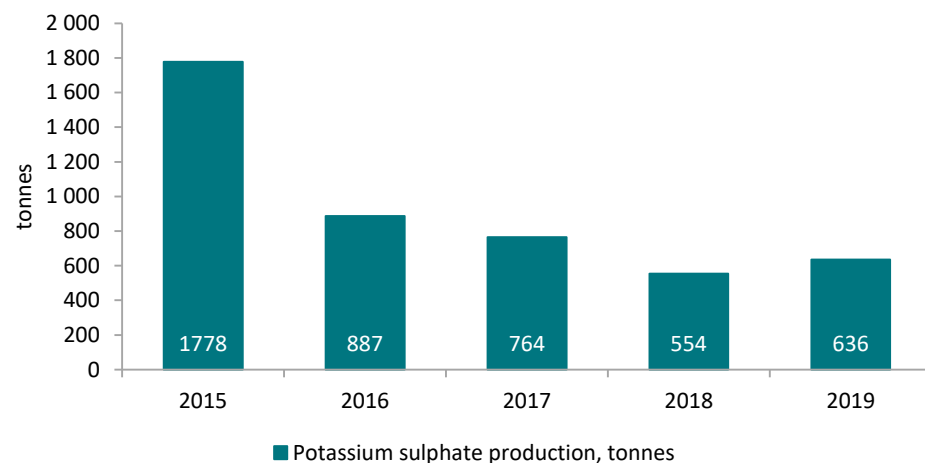
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# Inorganic chemical production in Kazakhstan: potassium sulphate fertiliser and carbides

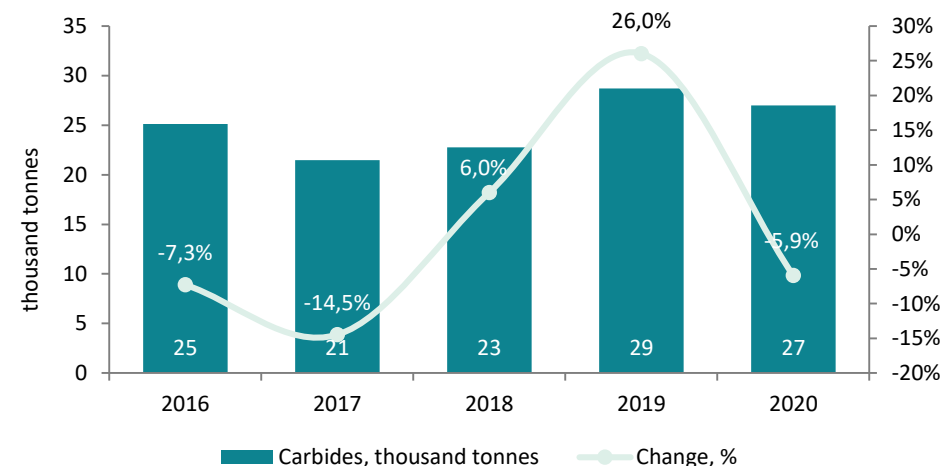


## Potassium sulphate fertiliser production



- As Kazakhstan does not currently use domestic raw materials to produce potash fertilisers, there is great potential for import substitution, i.e. the market niche is attractive for investors.
- However, given the demand for potash fertilisers, small businesses have launched modest production lines to produce potash fertiliser imported from Russia and Belarus into sylvinit, which is why Kazakhstan produced 636 tonnes of potassium sulphate in 2019.

## Carbide production



- In 2016-2020, Kazakhstan produced an average of 25 thousand tonnes of carbides per year. CAGR was 1.8% over the last 5 years.
- Karaganda Oblast's JSC TEMK is the country's leading carbide producer.
- Calcium carbide is a of calcium and carbon compound ( $\text{CaC}_2$ ) used to produce gas fuel such as acetylene. It is produced by alloying coke and quicklime in electric furnaces.

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# Inorganic chemical production in Kazakhstan: nitrogen and phosphate fertilisers

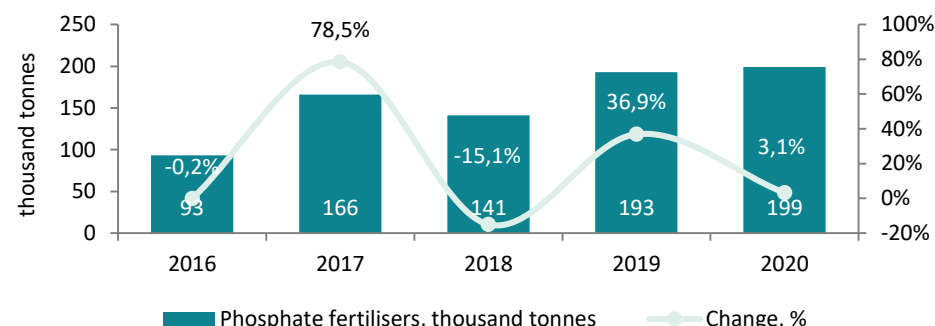


## Nitrogen fertiliser production

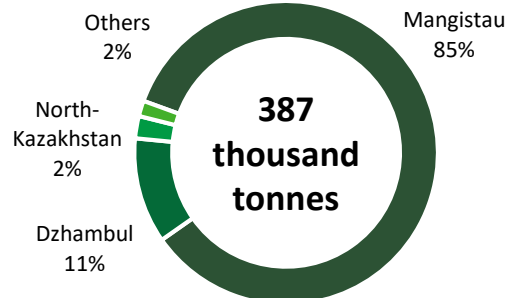


- Mineral fertiliser production increased 2.6% in 2020 to 586 thousand tonnes CAGR was 7.4% for 2016-2020.
- As only 586 thousand tonnes of agricultural fertiliser are actually used in Kazakhstan when the requirement is for 2.5 million tonnes, crop yield is only 12 hundredweight per ha, while the level in Russia is 25-26, and 36 in Belarus.
- Nitrogen fertiliser production in 2020 accounted for 66% of total mineral fertiliser production in Kazakhstan. Practically all fertiliser (378 thousand tonnes) is produced in Mangistau Oblast by KazAzot using recycled gas from local oil fields.
- In 2020, phosphate fertiliser production accounted for 34% of total mineral fertiliser production in Kazakhstan. Over 181 thousand tonnes were produced in Dzhambul Oblast at the KazPhosphat plant due to significant phosphate reserves in Dzhambul Oblast.

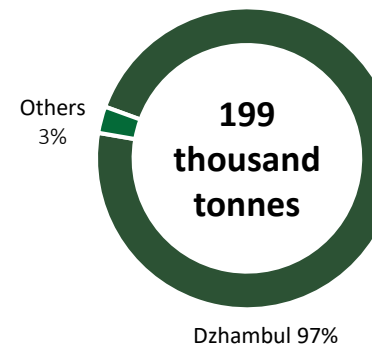
## Phosphate fertiliser production



## Structure of nitrogen fertiliser production by region in Kazakhstan in 2020



## Structure of phosphate fertiliser production by region in Kazakhstan in 2020



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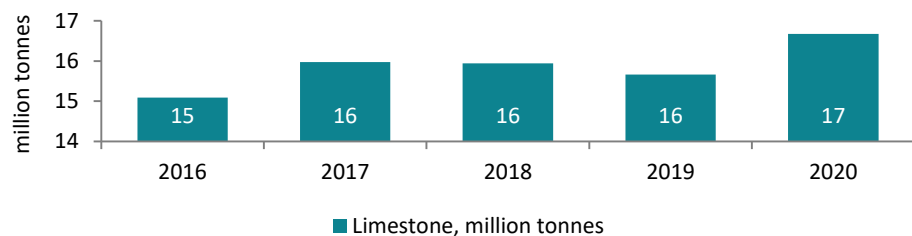
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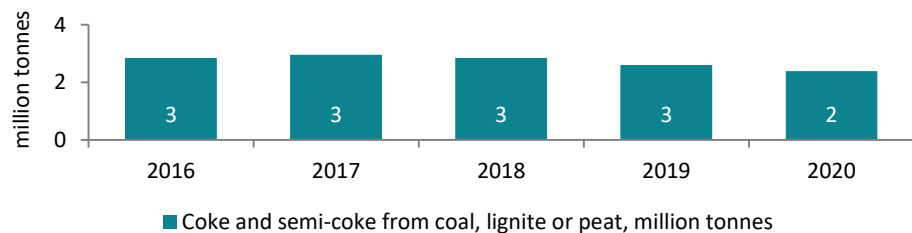
# Availability of raw materials. Limestone, coke and salts



## Changes in limestone production in 2016-2020

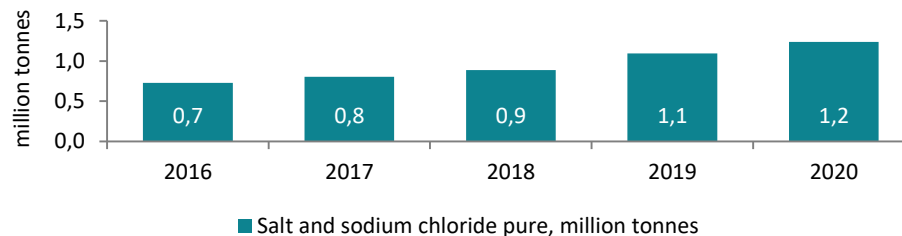


## Changes in coke and low-temperature coke, lignite or turf production in 2016-2020

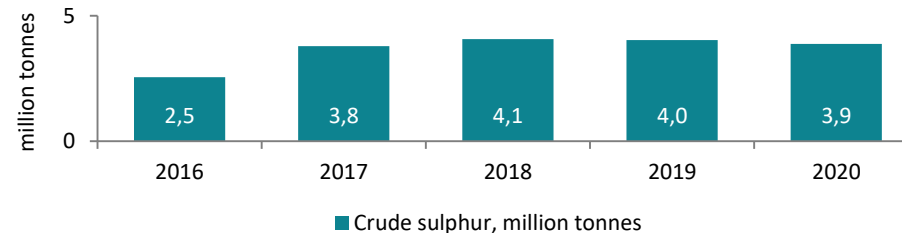


- Kazakhstan has the 6<sup>th</sup> largest natural reserves in the world, and is home to 99 of the 110 periodic table elements, of which 70 are being extracted and 60 are being used.
- The Kazakhstan mineral resources base incorporates significant reserves from approximately 5,000 fields. Available raw material resources help increase domestic inorganic chemical production capacity.
- According to the Geology Committee, 122 commercial limestone deposits used in lime production have been explored in Kazakhstan.

## Changes in salt and sodium chloride production in 2016-2020



## Changes in unrefined sulphur production in 2016-2020



- JSC Araltuz on lake Dzhaiksy-Klych is responsible for 66% of salt production in Kazakhstan. Salt is also produced at the Pavlodarsol, Inder Tuz and Asyl Tuz plants.
- Coke and low-temperature coke are the products of solid fuel (black and brown coal, anthracite, shale and turf) processing. Coal reserves in Kazakhstan are currently valued at 33 billion tonnes, which is roughly 4% of global reserves.
- According to the Ministry of Energy, sulphur content in domestic oil varies between 0.35% and 1.69%. The cleaning process to bring it to a commercial condition creates a new product, elementary sulphur.

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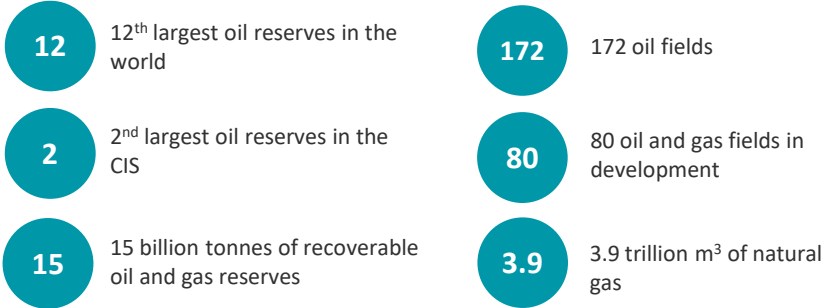
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# Availability of raw materials. Crude oil and natural gas (1 of 2)



## Kazakhstan oil and gas reserves in figures



## Map of the major fields in Kazakhstan

Over 90% of Kazakhstan oil and gas reserves are concentrated in **15 major fields**



The Kazakhstan oil production and gas industry plays a key role in the national economy, accounting for 18.6% of GDP in 2020.

Oil and gas fields are located in six of Kazakhstan’s 14 oblasts – Aktobe, Atyrau, West-Kazakhstan, Karaganda, Kyzylorda and Mangistau.

A feature of explored fields in Kazakhstan is that practically all of them produce gas in association with oil and condensate.

*\* According to State Reserves Commission calculations*

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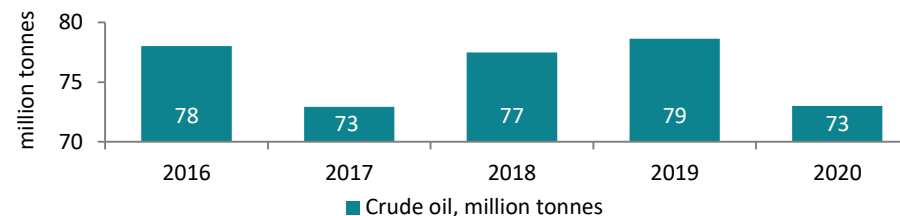


# Availability of raw materials. Crude oil and natural gas (2 of 2)

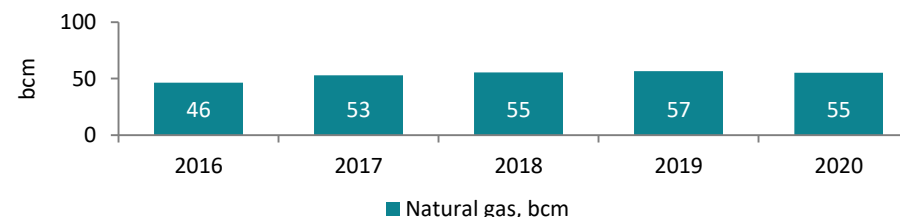


- In 2020, crude oil production in Kazakhstan amounted to 73 million tonnes, with Atyrau Oblast accounting for 53%, Mangistau Oblast – 19% and West-Kazakhstan Oblast – 18%.
- The largest oil and gas fields in Atyrau Oblast are Tengiz (Tengizchevroil LLP, in which KazMunaiGas owns a 20% interest) and Kashagan (operator - North Caspian Operating Company, in which KazMunaiGas has a 16.877% interest). Kazakhstan's largest oil and gas condensate field, Karachaganak, is in West-Kazakhstan Oblast and is being developed by Karachaganak Petroleum Operating B. V. KazMunaiGas has a 10% interest in the project.
- Natural gas production in Kazakhstan decreased 2% in 2020 to 55 billion m<sup>3</sup>. In regional terms, Atyrau Oblast (40%), West-Kazakhstan Oblast (24%) and Aktobe Oblast (17%) accounted for the greatest share of natural gas production in the first two months of 2019.
- Aktobe Oblast is also home to the country's largest gas condensate field — Zhanazhol (operated by JSC CNPC-Aktobemunaigas). JSC KazTransGas was announced as the gas and gas supply national operator in accordance with Government Resolution No. 914 from 5 July 2012.

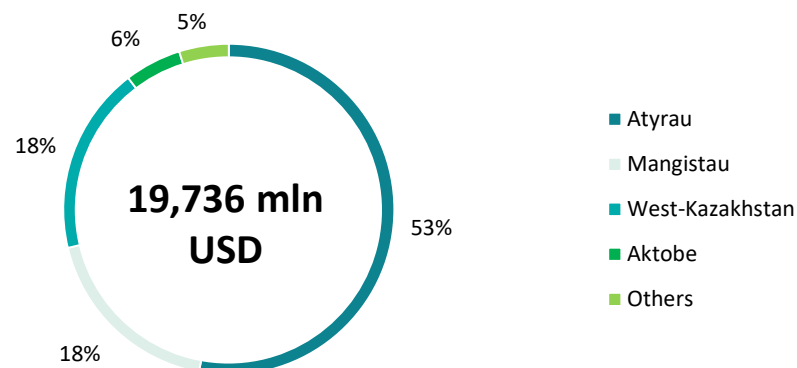
Changes in crude oil production in 2016-2020



Changes in natural gas production in 2016-2020



Structure of crude oil and natural gas production in 2020



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# Main inorganic chemical producers in Kazakhstan



## Major inorganic chemical producers in Kazakhstan

Company	Location	Capacity	Product
JSC Caustic	Pavlodar	108 thousand tonnes/year	Caustic soda (30 thousand tonnes), sodium hypochlorite (6.6 thousand tonnes), chlorine (26.4 thousand tonnes) and hydrochloric acid (45 thousand tonnes)
KazPhosphat LLP	Taraz	181 thousand tonnes/year	Phosphate-nitrogen fertiliser, simple superphosphate 19%, ammonium-phosphate-sulphate 18%, nitroammophoska 22%, feed tricalcium phosphate 27%, feed calcium sodium phosphate 41% and technical sulphuric acid
KazAzot LLP	Aktau	400 thousand tonnes/year	Ammonia, ammonium nitrate and nitric fertilisers
JSC TEMK	Temirtau, Karaganda Oblast	n/a	Calcium carbide and ferrous alloys
Talgar-spirit LLP	Talgar, Almaty Oblast	26.7 thousand litres/day	Ethanol, ethers and carbon dioxide
Kentavr LLP	Kandyagash, Aktobe Oblast	19 million litres/year	Ethanol and active animal feed additives
Talas Investment Company LLP	Karatau, Dzhambul Oblast	20 thousand tonnes/year	Sodium cyanide (5 thousand tonnes) and ammonium sulphate (5 thousand tonnes)
JSC Kazzinc	Ust-Kamenogorsk, East-Kazakhstan Oblast	n/a	Sulphuric acid, stibium, bismuth, zinc sulphate, copper, indium, selenium, silver, lead, mercury, thallium, cadmium, gold and zinc
JSC Kazakhmys	Karaganda	n/a	Sulphuric acid, cathode copper, copper wire rod, zinc, silver and gold
JSC Aktobe Chrome Compound Plant	Aktobe	n/a	Technical chrome anhydride, technical metallurgical chrome oxide, technical sodium dichromate, chrome sulphate (basic), technical potassium dichromate, technical pigment chrome oxide
SWISSGROW LLP	Nur-Sultan	20 thousand tonnes/year	Mineral and organic fertiliser
KosAgroCommerce LLP	Almaty	n/a	Mineral fertiliser and pesticides
SKZ-U LLP	Kyzylorda	500 thousand tonnes/year	Sulphuric acid

Source: open sources

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Industry teaser on inorganic chemistry

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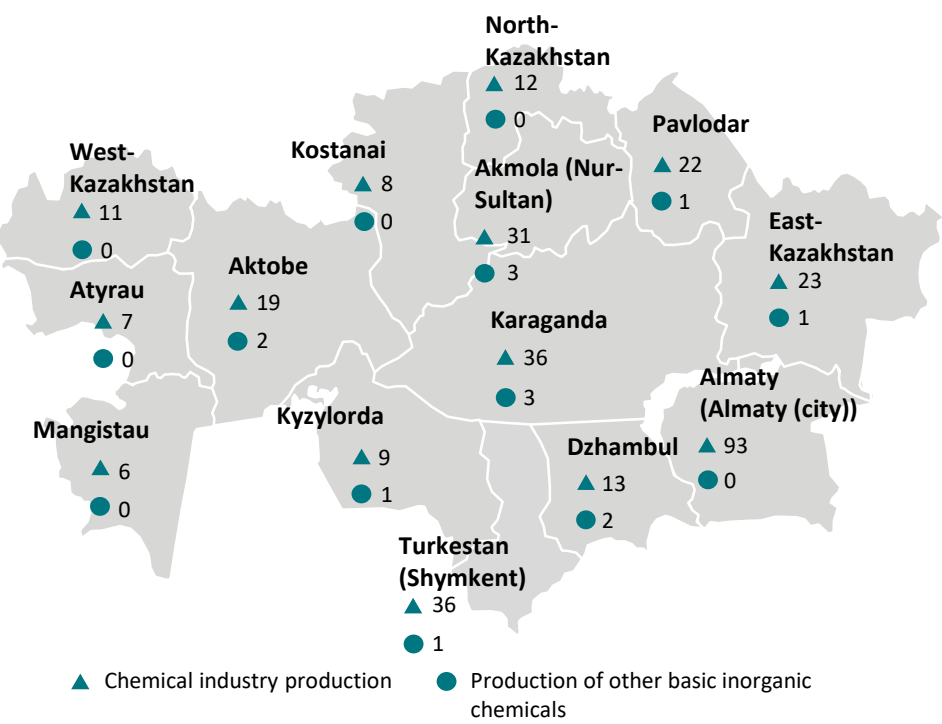




# Enterprise types



Location and number of chemical industry and inorganic chemical enterprises in 2020



Kazakhstan is home to 326 chemical industry enterprises, of which 14 are involved in producing miscellaneous basic inorganic chemicals. The majority of chemical industry enterprises are located in Almaty Oblast and the city of Almaty – 93, as well as in Shymkent and Turkestan Oblast – 36. A significant number of enterprises producing inorganic chemicals are located in Akmola Oblast and Nur-Sultan, as well as in Karaganda Oblast (3 enterprises per region).

Source: Kazakhstan Statistics Committee  
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Processing industry enterprises, September 2021

	Total	including			
		public	business partnerships	joint stock companies	other organisational and legal forms
Processing industry	17,568	4	17,145	138	281
Small	16,860	1	16,540	42	277
Medium-sized	466	1	424	38	3
Large	242	2	181	58	1

Processing industry individual entrepreneurs, September 2021

	Total	including	
		individual entrepreneur	joint venture
Kazakhstan	1,239,133	1,167,040	72,093
Processing industry	41,084	41,077	7

Legal entity in the chemical product industry in September 2021

	Total	public	private	including	
				private (joint ventures with foreign participation)	foreign
Chemical industry production	840	-	770	89	70
Small	810	-	743	79	67
Medium-sized	18	-	17	8	1
Large	12	-	10	2	2

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# Human capital (1/2)



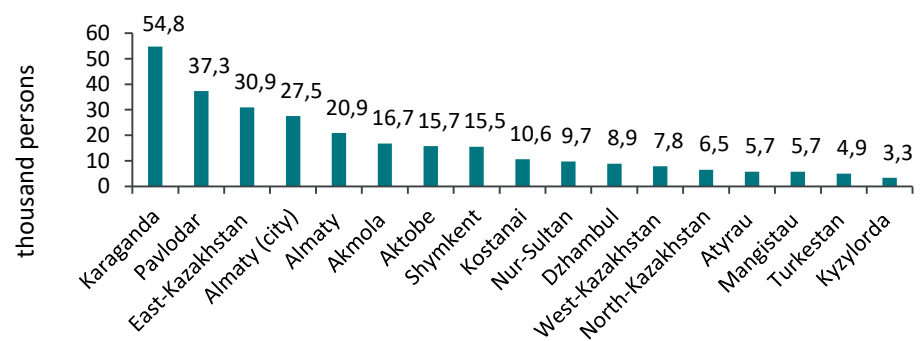
## Work force in Kazakhstan



9.2 as at 2021 QII  
million persons

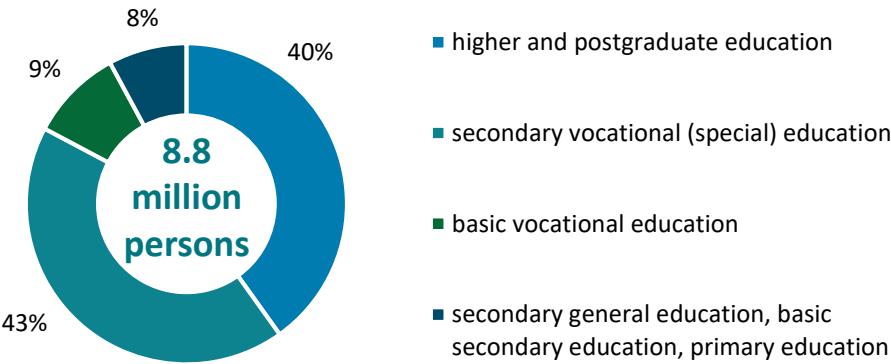
As at 2021 QII, the work force in Kazakhstan was 9.26 million, of whom 95% (8.8 million persons) were employed, while 5% (0.5 million) were unemployed.

## Processing industry headcount by oblast in 2021 QII, thousand persons



Broken down into regions, the greatest share of processing industry employees are in Karaganda Oblast – 19%, Pavlodar Oblast – 13% and East-Kazakhstan Oblast – 11% of total employees in the region.

## Distribution of the working population by education level, 2021 QII



The working population (8.8 million persons) includes 3.5 million persons with higher and post-graduate education; 3.7 million persons with secondary professional (special) education; 822 thousand persons with elementary professional education; while the remaining 695 thousand have a secondary general education, core secondary or elementary education.

## Salaried employee headcount in the processing industry, thousand persons

Index	2020 QII	2021 QII
Salaries employee headcount in the processing industry	278.7	282.3

In 2021 QII, salaries employee headcount in the processing industry was 282.3 thousand, which is 1.3% higher than for the same period in 2020.

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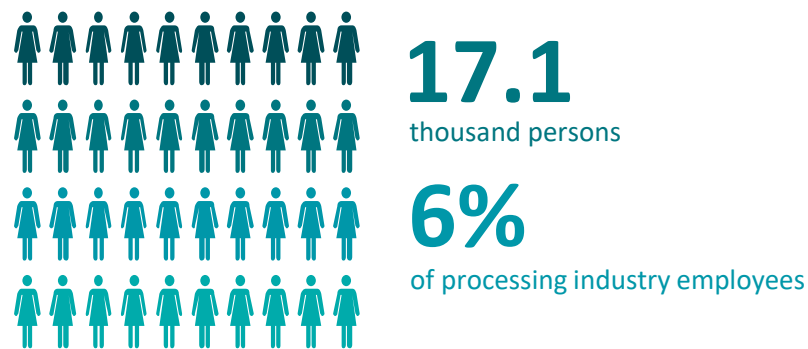
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# Human capital (2/2)

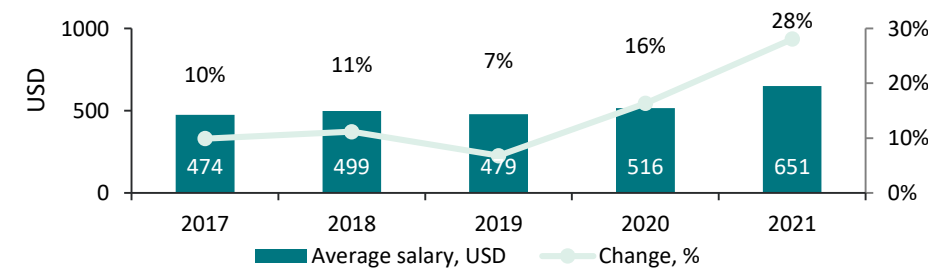


## Headcount in the chemical industry 2021 QII



Chemical industry headcount in 2021 QII was 17.1 thousand, which is 6% of total processing industry headcount.

## Average nominal employee salaries in the chemical industry (as at QII for each year in 2017-2021)

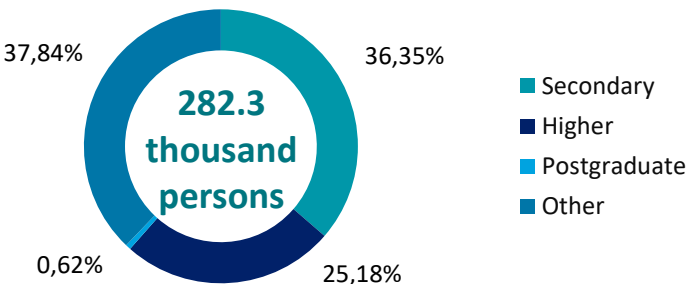


As at 2021 QII, average employee salaries in the chemical industry were 524 USD, which is 28% higher year-on-year. Nominal salary CAGR for 2017-2021 (as at QII for each year) was 8%.

Source: Kazakhstan Statistics Committee, EIU

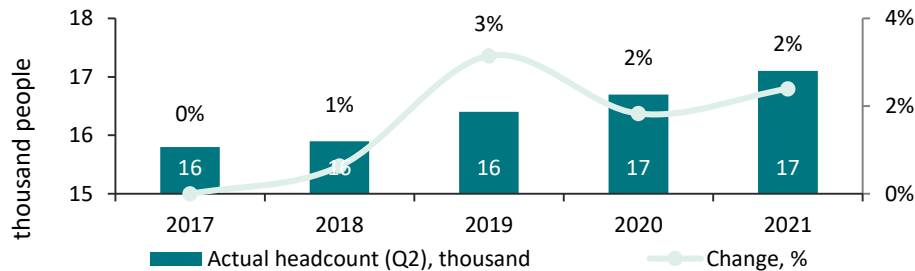
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## Allocation of the working population in the processing industry by education level as at 2021 QII



The working population in the processing industry (282.3 thousand persons) includes 103 thousand persons with secondary education; 71 thousand persons with higher education; 2 thousand persons with post-graduate education.

## Headcount in the chemical industry (as at QII for each year in 2017-2021)



At the end of 2021 QII, headcount in the chemical industry was 17.1 thousand persons, or 2% less than in the same period for 2019. CAGR was 2% for 2017-2021 (as at QII for each year).

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# Potential consumption growth in Kazakhstan



## Kazakhstan economic growth

Index	2020	2021 F	2022 F	2023 F	2024 F	2025 F
GDP	-2.6%	3.7%	4.2%	3.7%	3.8%	4.0%
Personal consumption	-3.8%	4.2%	4.8%	4.4%	4.6%	3.7%
State consumption	0.0%	2.0%	1.5%	2.0%	2.2%	2.2%
Gross investment in capital stock	-0.3%	3.0%	2.0%	3.5%	4.0%	3.8%
Goods and service exports	-12.1%	12.2%	7.1%	5.7%	4.7%	4.1%
Goods and service imports	-10.7%	11.4%	5.0%	6.9%	6.1%	3.5%
Domestic demand	-2.8%	3.1%	3.4%	4.0%	4.1%	3.5%
Heavy industry	3.1%	4.7%	5.8%	4.1%	4.3%	5.1%

According to EIU forecasts, personal consumption in Kazakhstan will increase 4.2% after a 3.8% decline in 2020. Domestic demand will recover by 3.1% to a level exceeding pre-pandemic levels. Thanks to government efforts to stimulate the economy, gross investment in fixed assets will grow 3% after a 0.3% decline in the previous year.

Potential growth in industrial product consumption is comparable to domestic consumption growth. Furthermore, EIU has also forecast average heavy industry growth of 4.5% between 2021 and 2025, which is higher than average due to active state investment policy and state investment stimulation measures in the sector.

Continuing state support measures in the chemical industry will help ensure growth in subsequent years. In 2016-2020, CAGR for inorganic chemical production was 13%. The driver behind inorganic chemical growth in Kazakhstan is the dynamically growth agricultural industry thanks to annual increases in crop area (in 2020, crop area amounted to 22.6 million ha).

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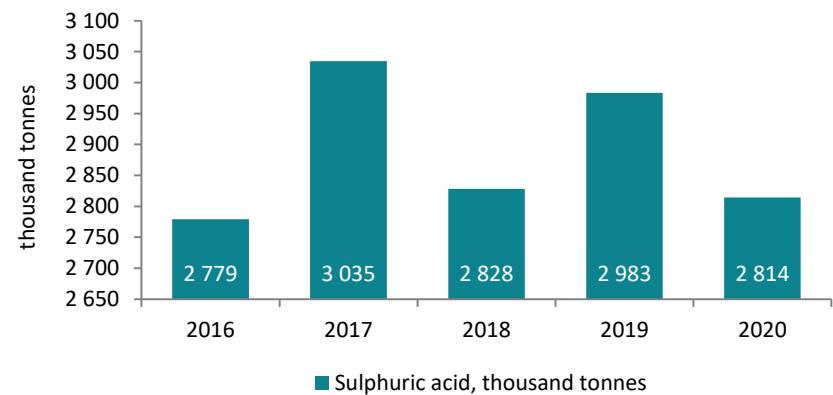




# Inorganic chemical product consumption in Kazakhstan

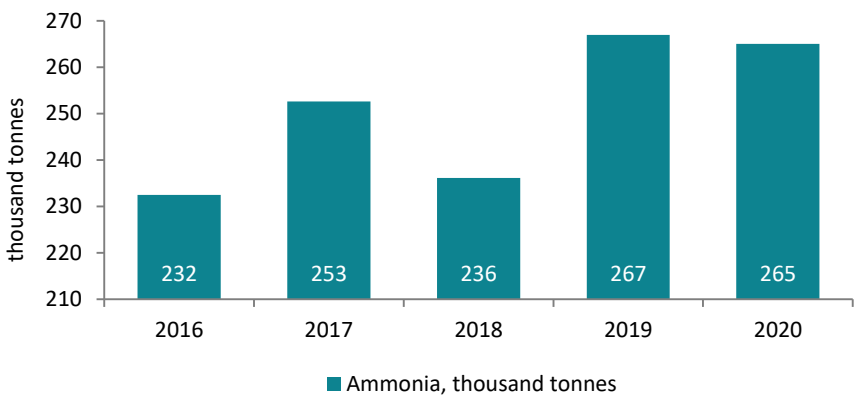


Changes in sulphuric acid consumption



- Sulphuric acid is used in mineral fertiliser production, as an electrolyte in lead batteries, in uranium production, in mineral acid and salt, chemical fibre, dye, smoke-forming and explosive substance production; in metallurgy; and in the oil, paint and dye, textile, leather and other industries. It is used in industrial organic fusion in dehydration reactions to create ethers, hydration (ethanol from ethylene), sulphonation (synthetic detergents and dyes), alkylation (create isooctane, caprolactam, polyethyleneglycol) and others.
- The uranium sector is the main sulphuric acid consumer in Kazakhstan. Uranium is produced using the underground leaching method.
- In 2020, domestic production consumption for the country reached 2,814 thousand tonnes.

Changes in ammonia consumption



- Ammonia is mostly used in mineral fertiliser production – predominantly nitrogen fertilisers (ammonia carbamide, nitrate and sulphate) and phosphates (ammophos and diamphos). Ammonia water is also used as fertiliser. Fields are often watered from liquid ammonia tanks. Likewise, ammonia is used to produce nitric acid, caprolactam, soda (using the ammonia method), and, less often, to produce nitrogenous salts and hydrocyanic acid. Furthermore, ammonia is a good solvent for the majority of nitrogen compounds.
- One of the main nitrogen consumers in Kazakhstan is Kazphosphat LLP. In 2020, domestic consumption amounted to 265 thousand tonnes.

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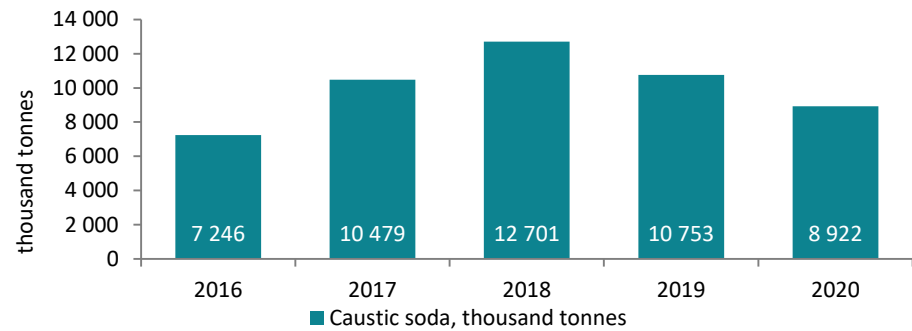
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# Inorganic chemical product consumption in Kazakhstan

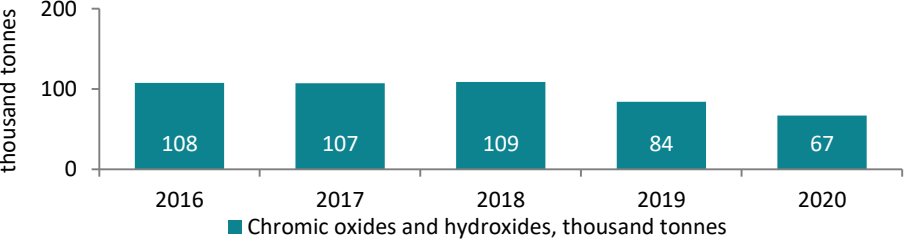


Changes in caustic soda consumption



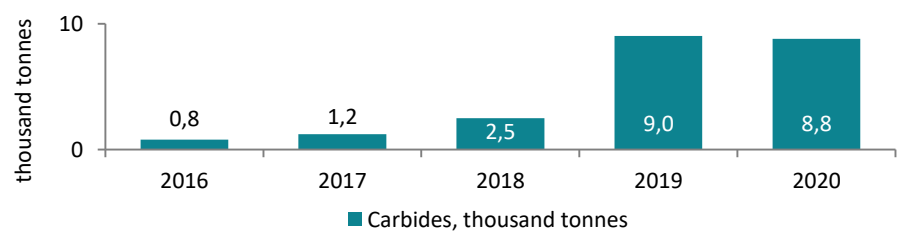
- Caustic soda is an important raw material for many sectors of the national economy. In the chemical industry it is used to produce sodium salts, phosphates, organic compounds and other products. It is also used to produce cellulose from wood pulp in conjunction with sulphate pumping; to produce artificial fibres, soap, detergents, dyes, aluminium oxide from bauxite and phenols from mineral oils. Sodium hydrate is part of the electrolytes used in carbonification and deoiling and in many other electrolysis processes (in tin and zinc technology).
- In 2020, domestic consumption in Kazakhstan amounted to 8,922 thousand tonnes. Chlorine is a by-product of caustic soda production. The main chlorine consumer in Kazakhstan is the Ust-Kamenogorsk Titanium Plant, which accounts for over 80% of national chlorine consumption.

Changes in carbon monoxide consumption



- Carbon monoxide is used to create a protective metal welding environment; in the production of carbonated drinks and dry ice; to cool, freeze and store food products in direct and indirect contact with them; to dry foundry moulds; and in extinguishing fires. Top and first class liquid carbon dioxide is used predominantly in welding.
- In 2020, domestic carbon dioxide production in Kazakhstan amounted to 67 thousand tonnes.

Changes in the consumption of defined or undefined composition carbide



- Carbides are used in the production of cast iron and steel, ceramics, miscellaneous alloys such as abrasive and polishing materials, as reducing agents, deoxidising agents, catalytic agents and others.

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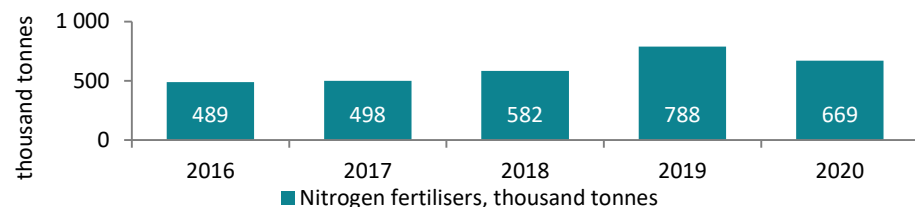
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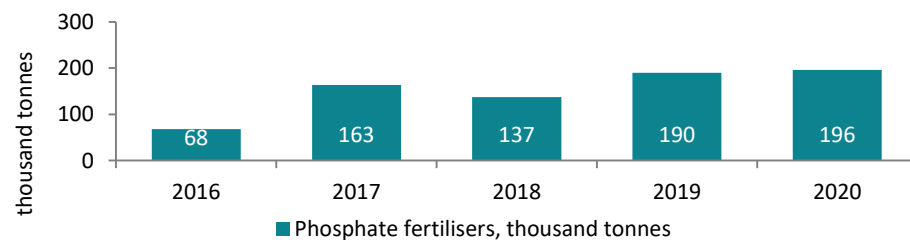
# Inorganic chemical product consumption in Kazakhstan



## Changes in nitrogen fertiliser consumption

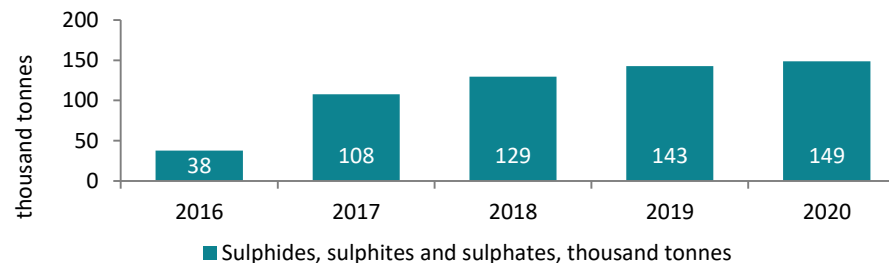


## Changes in phosphate fertiliser consumption



- In 2020, domestic nitrogen fertiliser consumption in Kazakhstan amounted to 669 thousand tonnes, and phosphate fertiliser - 196 thousand tonnes.
- According to the FAO, fertiliser consumption in Kazakhstan is low. In 2019, 1.8 kg of nitrogen fertiliser and slightly less than 1 kg of phosphate fertiliser were used on 1 ha of crop area, while in neighbouring Uzbekistan the figures were 162.6 kg and 50.9 kg, respectively. In Russia, the figure for nitrogen fertiliser was 14 kg and 4.9 kg for phosphate fertiliser.
- The government subsidises the cost of fertiliser as support for the agricultural industry and to stimulate fertiliser demand.

## Changes in sulphide, sulphite and sulphate consumption



- Sulphides, sulphites and sulphates are used in industrial chemicals as a raw material to separate metals, and to produce medicines, dyes and fertiliser. Natural sulphides are used as a raw material to produce the corresponding metals, as well as sulphuric acid. Sulphides are used as semi-conductors in organic chemical products and in medicine to produce dyes (lithopones), in agriculture and others.
- The most popular sulphites are hydrosulphites, which are used in the textile industry as dyes and printing, in the paper industry to produce cellulose from wood pulp, and in photography and organic synthesis. Calcium sulphite and hydrosulphite are used as disinfectants in the wine industry and sugar production. Hydrosulphites are used to absorb hydrogen sulphide from heavy industry effluent gases.
- As they are cheap, sulphates are used in shampoo to generate foam. Sulphate fertiliser (potassium sulphate, ammonium sulphate and others) is widely used in the agriculture sector.
- In 2020, domestic consumption in Kazakhstan amounted to 149 thousand tonnes.

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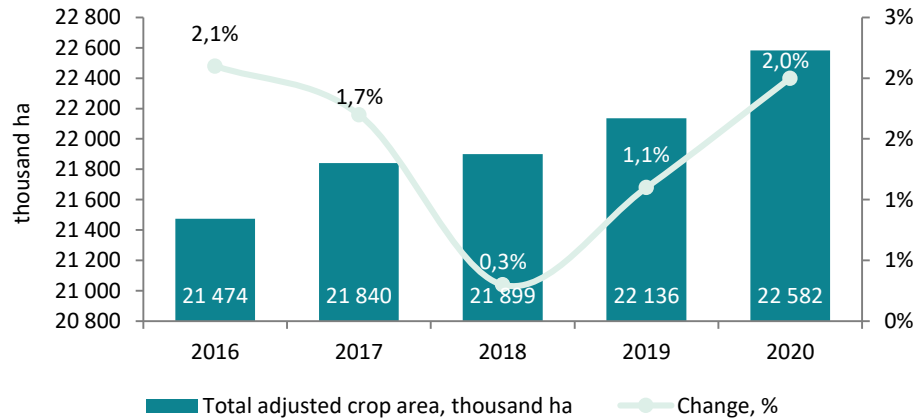
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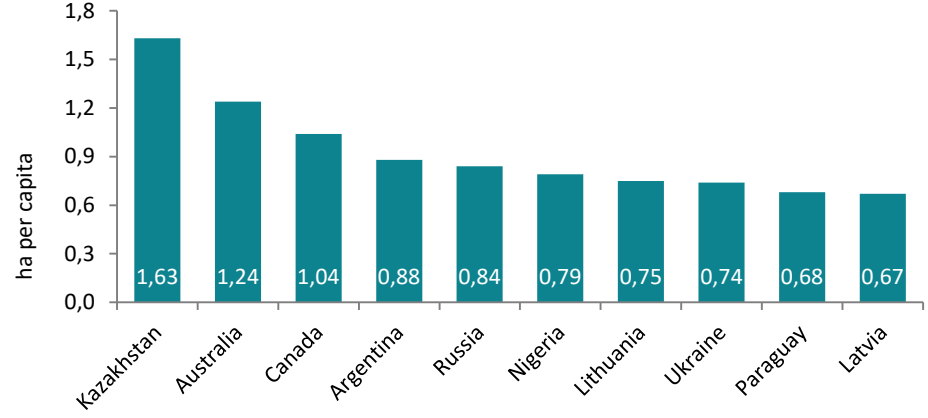
# Crop area in Kazakhstan



Changes in agricultural crop area in Kazakhstan

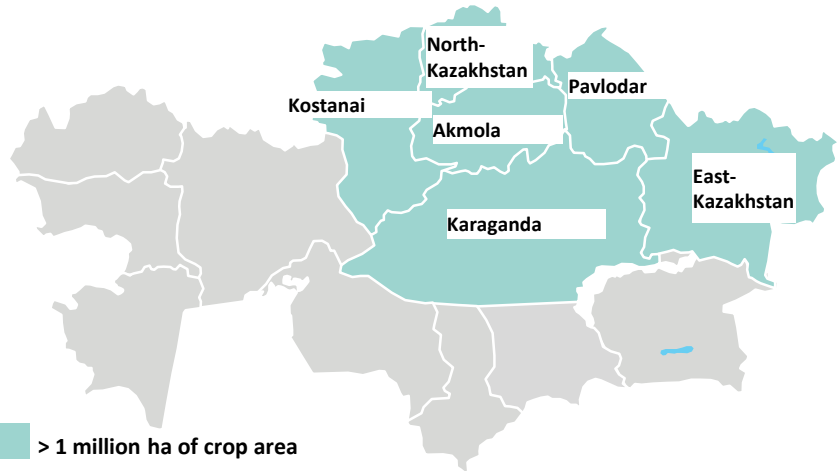


Changes in crop area per resident in various countries, 2018\*



- Kazakhstan is known for its extensive cropland, and its natural pastures capable of producing surplus competitive agricultural produce.
- Cropland per capita in Kazakhstan is higher than in other countries. According to the World Bank, in 2018, cropland in Kazakhstan was 1.63 ha per capita, which is 31% higher than in Australia (1.24 ha).
- Crop area in Kazakhstan increased 2% in 2020 to 22.6 million ha. Crop area CAGR in Kazakhstan for 2016-2020 was 1.3%.
- The largest crop areas are focused in Kostanai Oblast – 5.2 million ha (23%), Akmola Oblast – 5.2 million ha (23%), North-Kazakhstan Oblast – 4.3 million ha (19%) and Pavlodar Oblast – 1.5 million ha (6%).

\* data for 2019-2021 is not available



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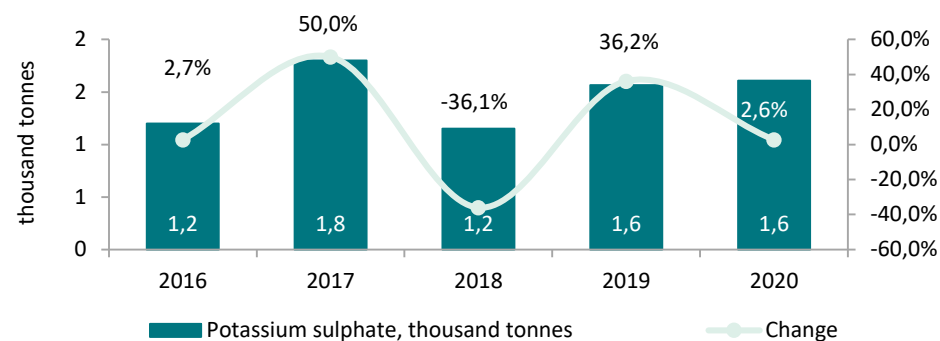


In 2020, Kazakhstan imported over 1 million tonnes of inorganic chemicals, the majority of which were sulphuric acid (341 thousand tonnes), carbonites and peroxycarbonates (316 thousand tonnes). Russia is the main inorganic chemical supplier to Kazakhstan (730 thousand tonnes).

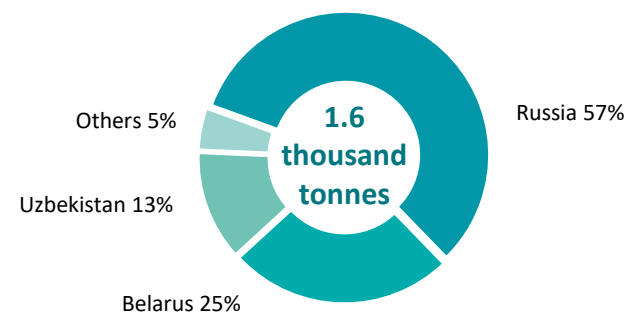
The main competitive advantages of Russian products supplied to Kazakhstan are:

- their relative low cost and the country's geographic proximity.
- the Russian chemical industry segment is developing dramatically. Russia has upgraded much of its production, installing new modern equipment, introducing innovative projects and technology in production management, allowing enterprises to produce a high-quality and competitive product.

Changes in potassium sulphate imports



Structure of potassium sulphate imports in 2020



- Potassium sulphate imports in 2020 fell 3% year-on-year to 1.6 thousand tonnes. CAGR in 2016-2020 was 5.5%. The greatest share of potassium sulphate imports into Kazakhstan in 2020 came from Russia (919 tonnes) and Belarus (409 tonnes).

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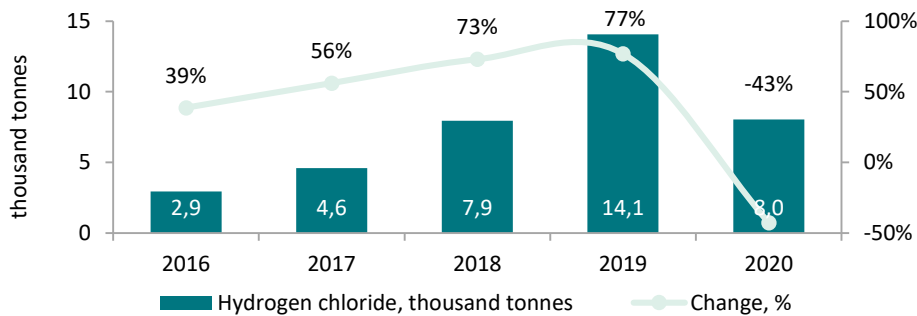
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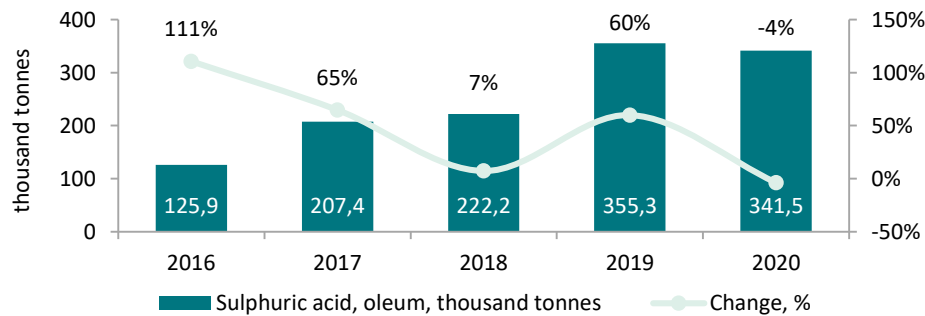
# Hydrogen chloride and sulphuric acid imports



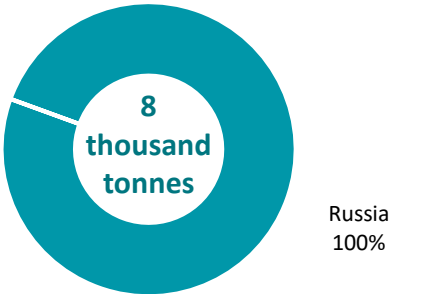
Changes in hydrogen chloride imports



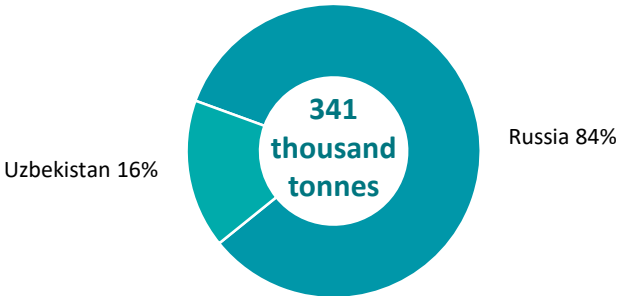
Changes in sulphuric acid imports



Structure of hydrogen chloride imports in 2020



Structure of sulphuric acid imports in 2020



- In 2020, hydrogen chloride imports fell 43% year-on-year. CAGR in the last 5 years was 29%. In 2020, Russia accounted for all hydrogen chloride imports (8 thousand tonnes). Hydrogen chloride is used in the chemical and food industries; medicine, ferrous and non-ferrous metallurgy; in organic dye, chloride salt, active carbon, basic calcium superphosphate, synthetic rubber and other production.
- Sulphuric acid imports in the last five years grew significantly from 125.9 thousand tonnes in 2016 to 341.5 thousand tonnes in 2020. Russia was responsible for a significant portion of imports in 2020 (285.7 thousand tonnes or 84%).

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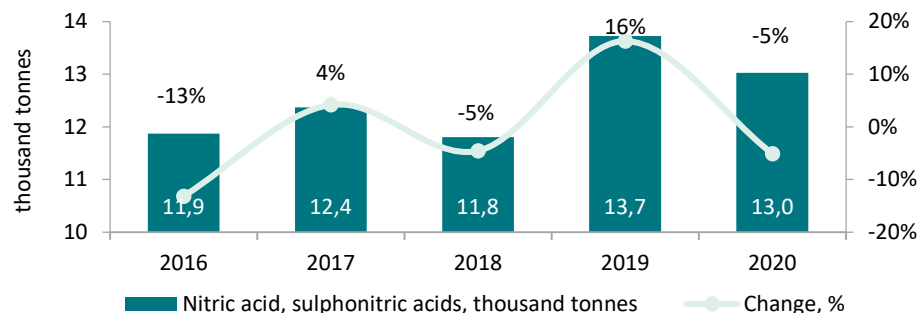
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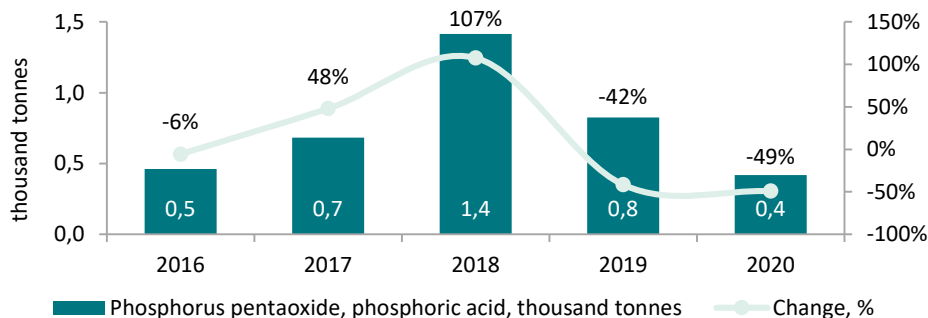
# Nitric acid, phosphorous pentoxide and phosphoric acid imports



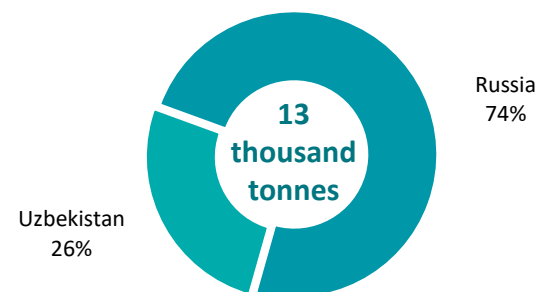
## Changes in nitric acid imports



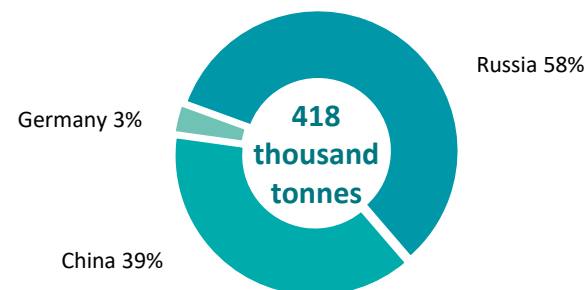
## Changes in phosphorous pentoxide and phosphoric acid imports



## Structure of nitric acid imports in 2020



## Structure of phosphorous pentoxide and phosphoric acid imports in 2020



- In 2020, nitric acid imports into Kazakhstan amounted to 13 thousand tonnes. The main nitric acid suppliers to Kazakhstan in 2020 were Russia with 9.6 thousand tonnes, Iran – 3.4 thousand tonnes. Nitric acid is used in nitrate, organic dye and explosive substance production; to pickle metals; in copper plating, as well as gold and silver refining.
- In 2016-2020, CAGR for phosphorous pentoxide and phosphoric acid imports was -2%. Imports into Kazakhstan amounted to 0.4 thousand tonnes in 2020. The main phosphorous pentoxide and phosphoric acid exporters to Kazakhstan were Russia (58%) and China (39%).

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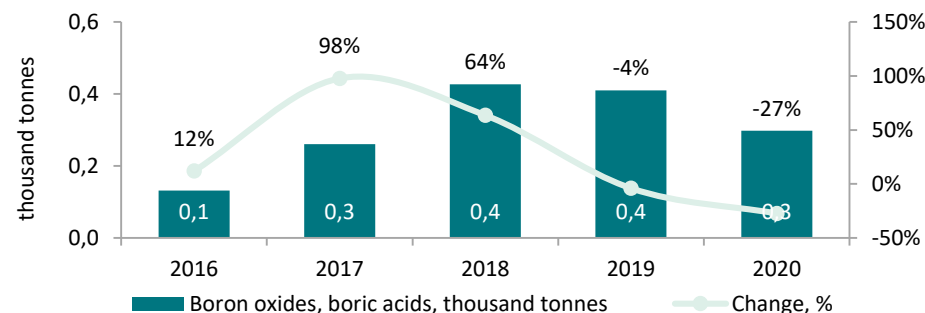
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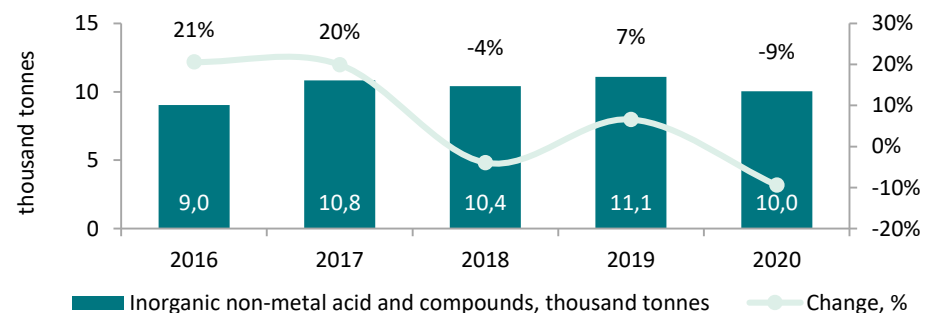
# Boric oxide, boric acid and inorganic non-metal acid and compound imports



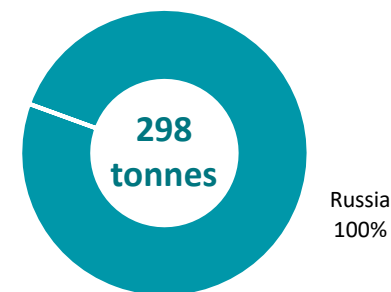
Changes in boric oxide and boric acid imports



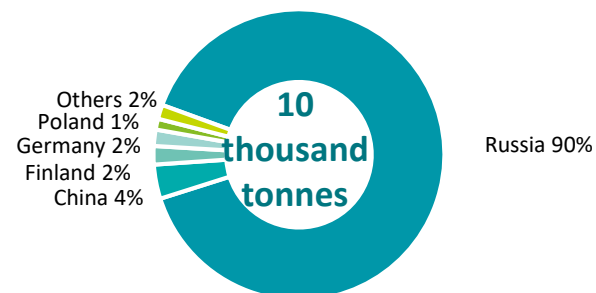
Changes in inorganic non-metal acid and compound imports



Structure of boric oxide and boric acid imports in 2020



Structure of inorganic non-metal acid and compound imports in 2020



- In 2020, boric oxide and boric acid imports fell 27% compared to 2019. CAGR for the last 5 years was 23%. In 2020, Russia was responsible for boric oxide and boric acid imports (298 tonnes). Boric oxide and boric acid are used to produce artificial precious or semi-precious stones; as an antiseptic; to produce borosilicate glass, vitrified compounds, Guignet's green and artificial borates; and to treat candle wick and fire-resistant fabric.
- Inorganic non-metal acid and compound imports have been stable in the last five years, with CAGR at 3%. Russia was responsible for a significant share of imports in 2020 (8.9 tonnes or 89%).

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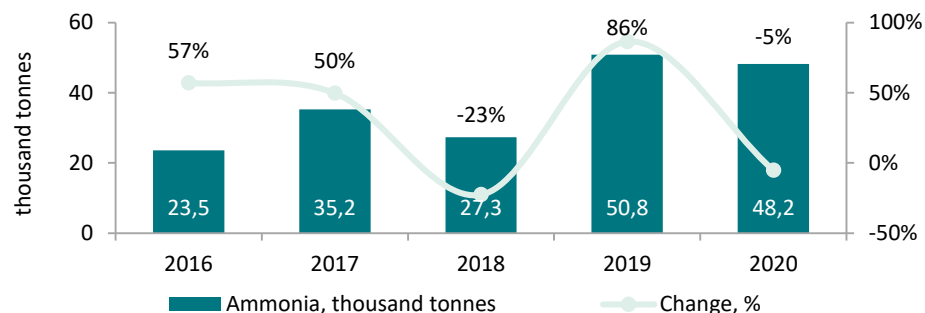
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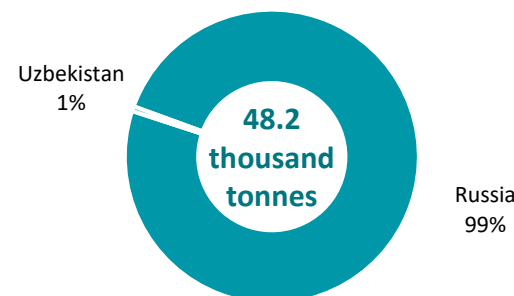
# Ammonia and sodium hydroxide, potassium hydroxide, sodium peroxide and potassium imports



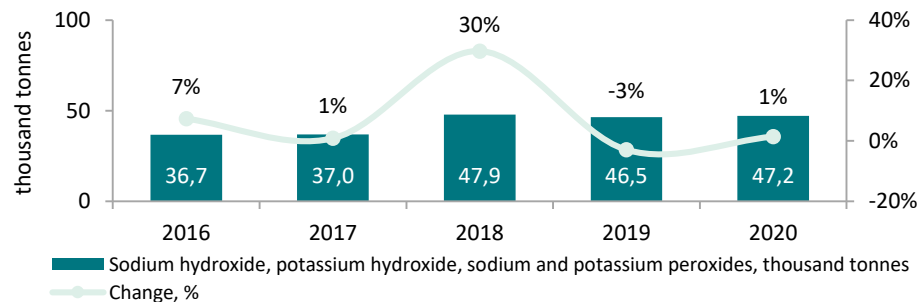
Changes in ammonia imports



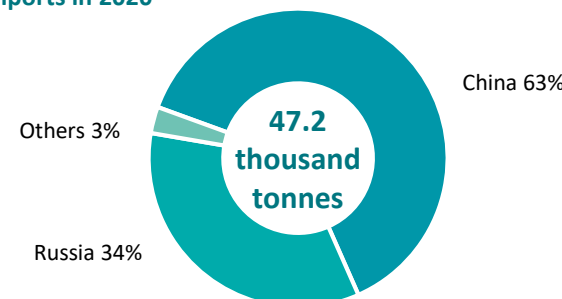
Structure of ammonia imports in 2020



Changes in sodium hydroxide, potassium hydroxide, sodium peroxide and potassium imports



Structure of sodium hydroxide, potassium hydroxide, sodium peroxide and potassium imports in 2020



- In 2020, ammonia imports into Kazakhstan amounted to 48.2 thousand tonnes with CAGR in the last five years of 20%. In 2020, Russia accounted for 47.9 thousand tonnes or 99% of ammonia imports.
- In 2020, sodium and potassium hydroxide and peroxide imports into Kazakhstan amounted to 47.2 thousand tonnes. The main sodium and potassium hydroxide and peroxide suppliers into Kazakhstan in 2020 were China and Russia with 29.6 thousand tonnes and 16.2 thousand tonnes, respectively. CAGR for sodium and potassium hydroxide and peroxide imports in the last five years was 7%.

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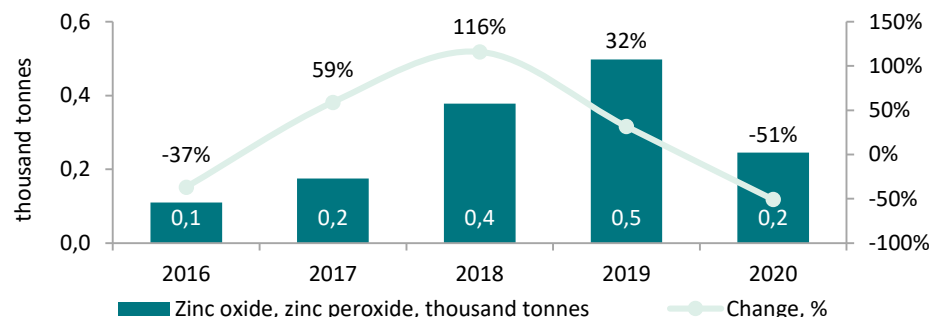
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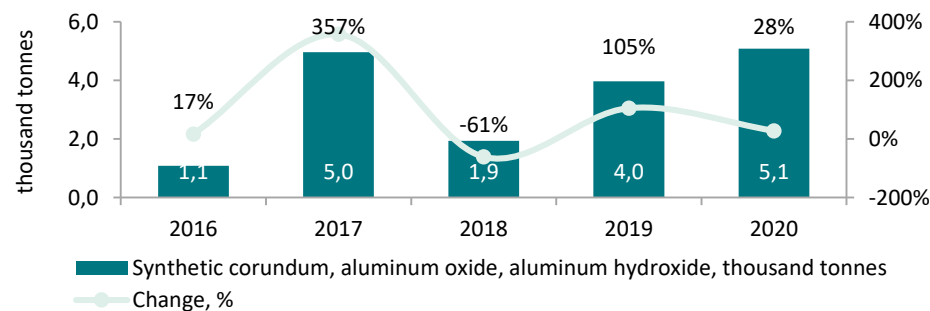
# Zinc oxide, zinc peroxide and synthetic corundum, aluminium oxide and aluminium hydroxide imports



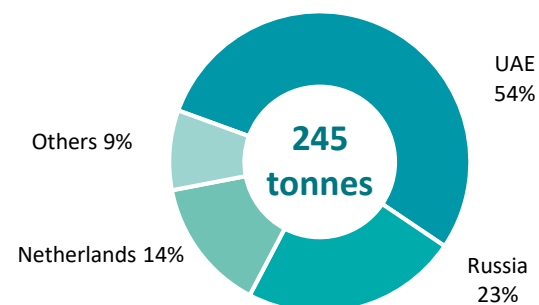
Changes in zinc oxide and zinc peroxide imports



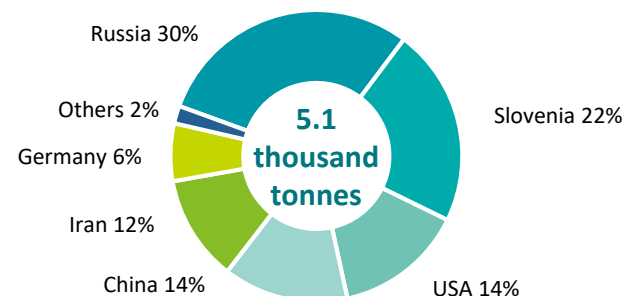
Changes in synthetic corundum, aluminium oxide and aluminium hydroxide imports



Structure of zinc oxide and zinc peroxide imports in 2020



Structure of synthetic corundum, aluminium oxide and aluminium hydroxide imports in 2020



- In 2020, zinc oxide and zinc peroxide imports into Kazakhstan decreased 51% to 245 tonnes. CAGR in the last 5 years was 22%. In 2020, over 50% of zinc oxide and zinc peroxide imports came from the UAE (132 tonnes).
- Synthetic corundum, aluminium oxide and hydroxide imports in the last five years increased significantly from 1.1 thousand tonnes in 2016 to 5.1 thousand tonnes in 2020. Roughly 33% of imports in 2020 came from Russia (30%). The product is used to produce fire-retardant agglutinates, laboratory utensils, and in the electrical engineering industry.

Source: trademap.org

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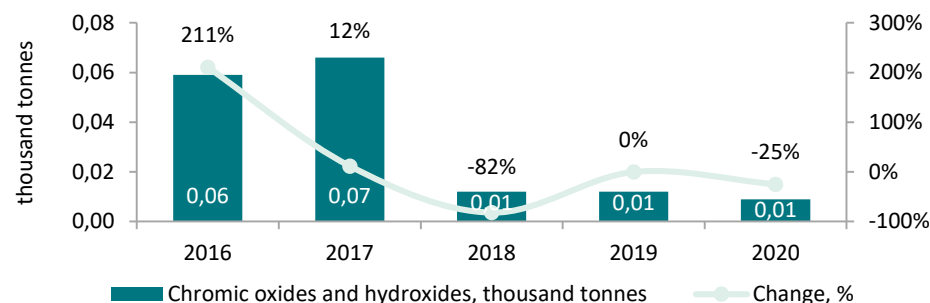




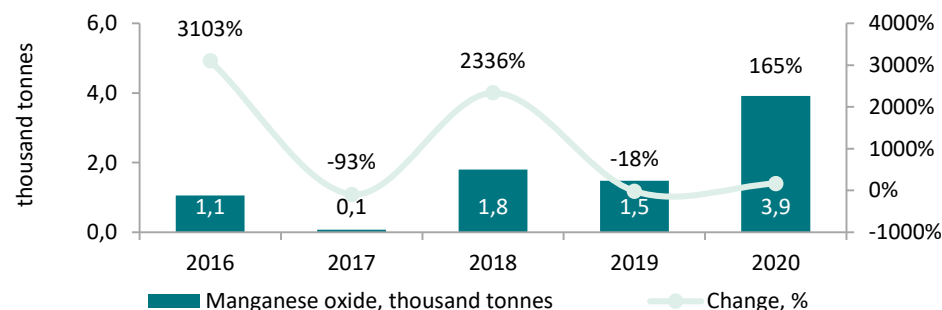
# Chromic oxide and hydroxide, and manganese oxide imports



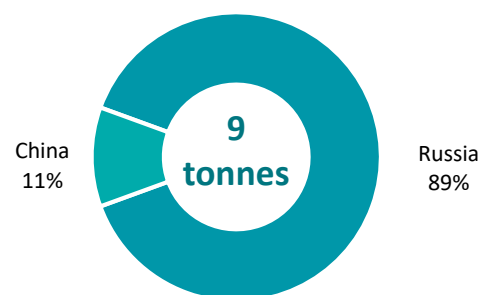
## Changes in chromic oxide and hydroxide imports



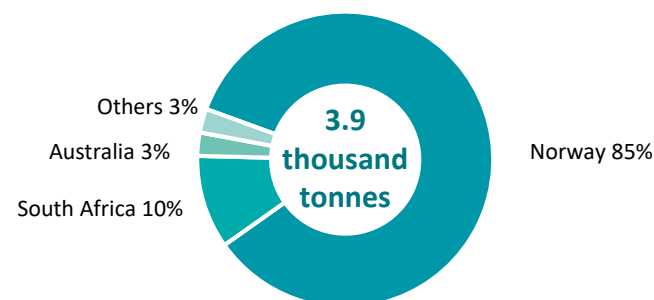
## Changes in manganese oxide imports



## Structure of chromic oxide and hydroxide imports in 2020



## Structure of manganese oxide imports in 2020



- In 2020, chromic oxide and hydroxide imports into Kazakhstan amounted to 9 tonnes, of which Russia was responsible for 8 tonnes. They are used in porcelain, glass and rubber production; to manufacture abrasives and fire-retardant brick for metallurgy furnaces, and to produce anti-corrosion substances and in chrome metallurgy.
- In 2016-2020, CAGR for manganese oxide imports was 39%, while imports reached 3.9 thousand tonnes in 2020. In 2020, the main manganese oxide supplier to Kazakhstan was Norway (85%). Manganese oxide is used in pyrotechnics and organic fusion; in gas mask, in battery, ceramic and dehumidifier production; and also in the production of printing toner, pigments, polish and artificial semi-precious stones; and in the glass and textile industries.

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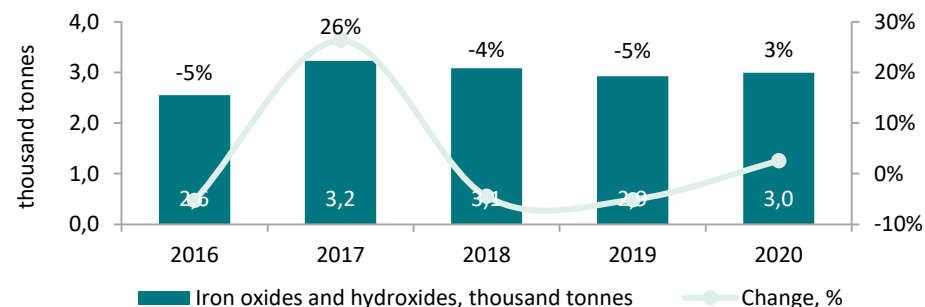
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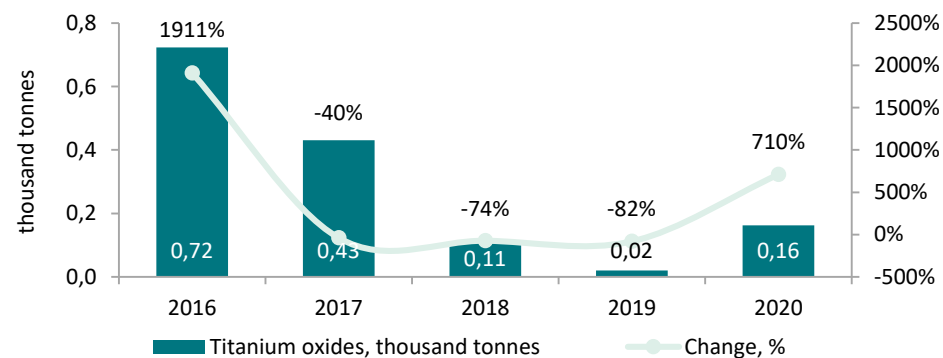
# Iron oxide and hydroxide and titanium oxide imports



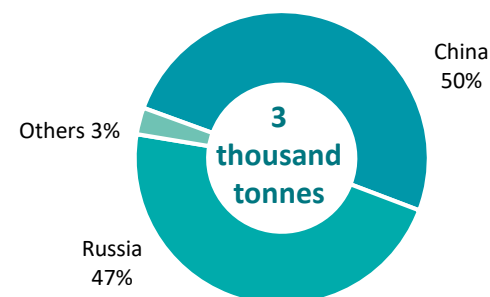
## Changes in iron oxide and hydroxide imports



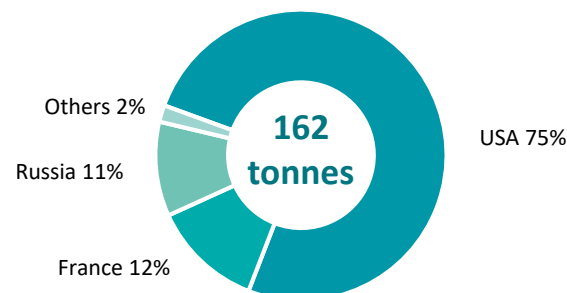
## Changes in titanium oxide imports



## Structure of iron oxide and hydroxide imports in 2020



## Structure of titanium oxide imports in 2020



- Iron oxide and hydroxide imports into Kazakhstan in the last 5 years have been stable. In 2020, the main suppliers to Kazakhstan were China (1.5 thousand tonnes) and Russia (1.4 thousand tonnes). Iron oxide and hydroxide are used in dye, metal, glass and glass compound polish production; to clean coal gas, and produce thermite.
- Titanium oxide imports into Kazakhstan, which are used as a pigment, decreased significantly in 2016-2020 from 724 tonnes to 162 tonnes, while CAGR was -31%. In 2020, the USA accounted for a significant share of titanium oxide imports (75%).

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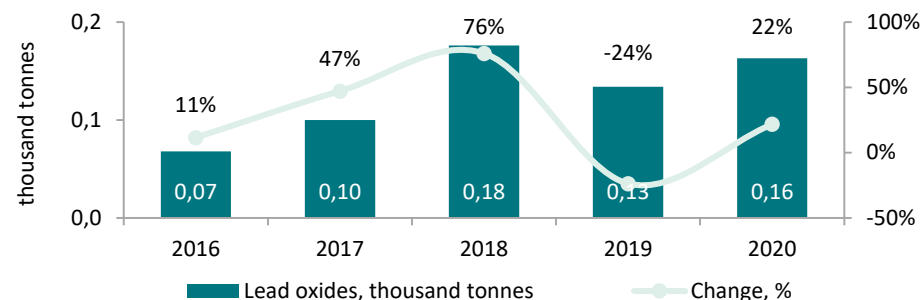
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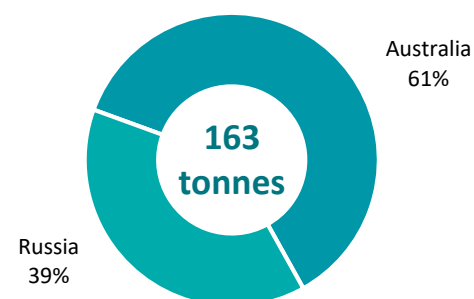
# Lead oxide and hydrazine, hydroxylamine and inorganic salt imports



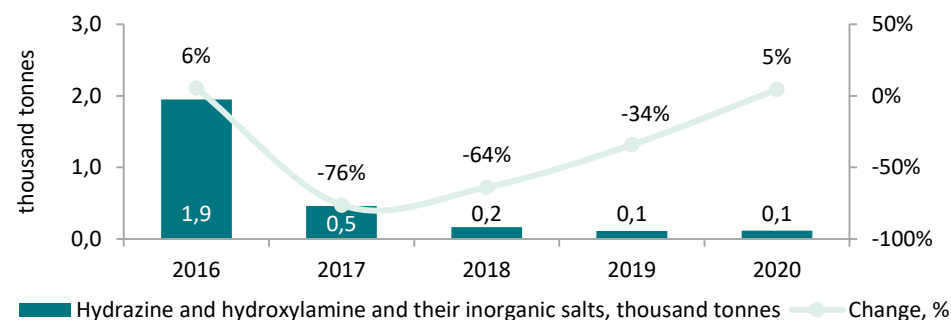
## Changes in lead oxide imports



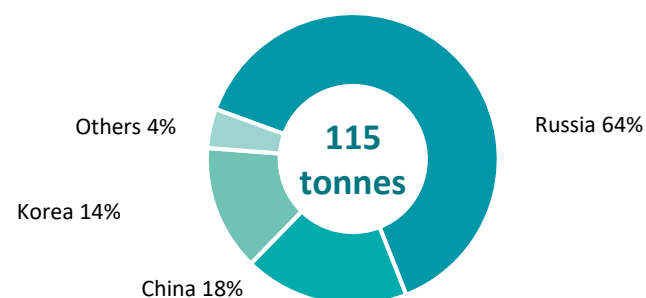
## Structure of lead oxide imports in 2020



## Changes in hydrazine, hydroxylamine and inorganic salt imports



## Structure of hydrazine, hydroxylamine and its inorganic salt imports in 2020



- In 2020, lead oxide imports into Kazakhstan amounted to 163 tonnes, 39% of which came from Russia and 61% from Australia for the glass container sector, and also to produce enamel, matches, dye, dehumidifiers and others.
- In the last 5 years, imports of hydrazine, hydroxylamine and its inorganic salts into Kazakhstan fell significantly from 1.9 thousand tonnes to 115 tonnes, while CAGR was - 51%. In 2020, Russia accounted for a significant portion of imports (64% or 73 tonnes). Hydrazine and hydroxylamine are used to produce explosive substances; in chemical fusion, metallurgy and photography; to produce salts and enamel; and in the glass industry.

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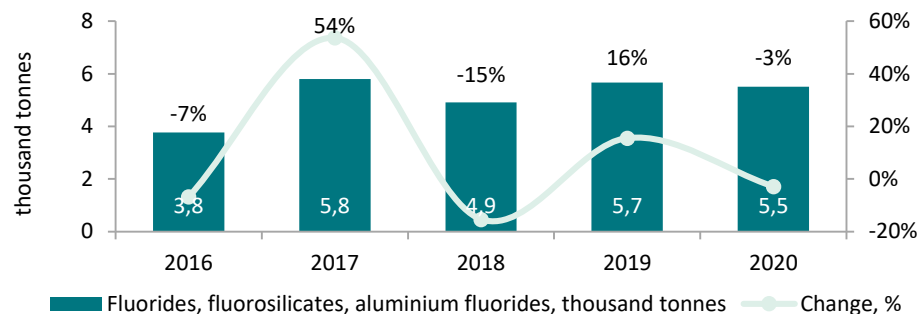
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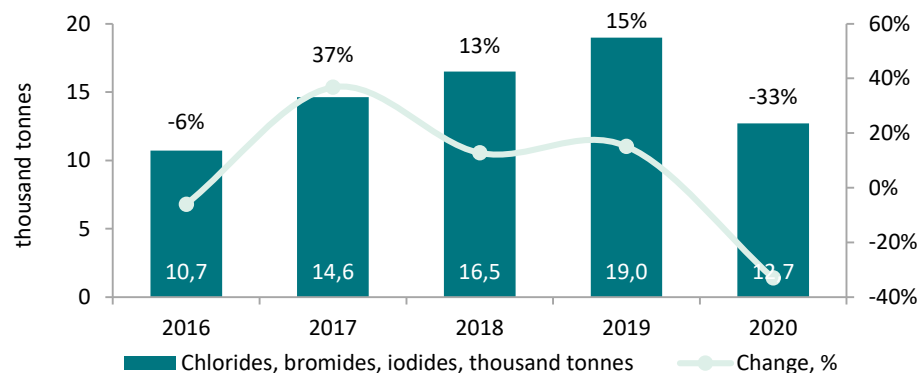
# Fluoride, fluorosilicate, aluminium fluoride and chloride, bromide and iodide imports



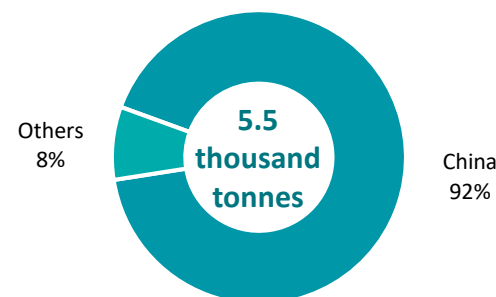
Changes in fluoride, fluorosilicate and aluminium fluoride imports



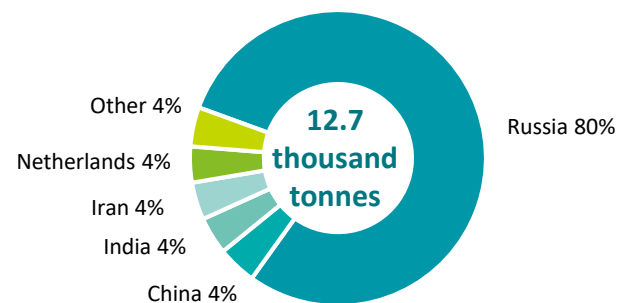
Changes in chloride, bromide and iodide imports



Structure of fluoride, fluorosilicate and aluminium fluoride imports in 2020



Structure of chloride, bromide and iodide imports in 2020



- CAGR for fluoride, fluorosilicate and aluminium fluoride imports was 10% in 2016-2020. In 2020, Kazakhstan imported 5.5 thousand tonnes of fluoride, fluorosilicate and aluminium fluoride, predominantly from China to treat wood, manufacture enamel, in the metallurgy industry, as an antiseptic, in the production of ceramics, as dye or printing toner.
- Chloride, bromide and iodide imports into Kazakhstan come predominantly from Russia (80%), while average imports from Russia since 2016 have fluctuated around the 10 thousand tonne level.

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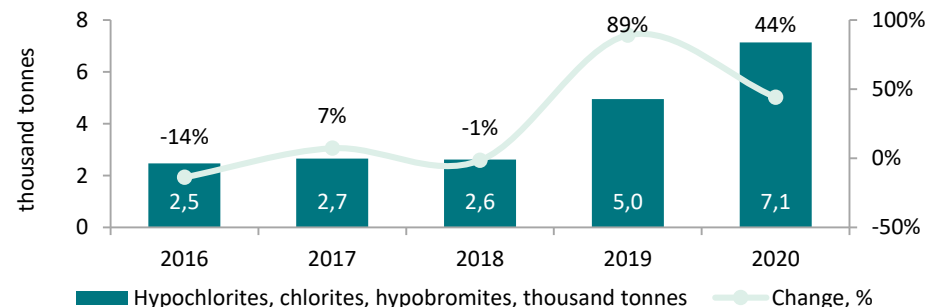
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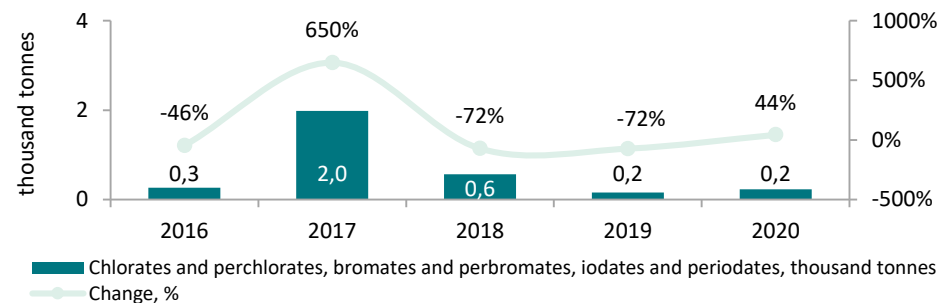
# Hypochlorite, chlorite, hypobromite, chlorate and perchlorate, bromate and perbromate, iodate and periodate imports



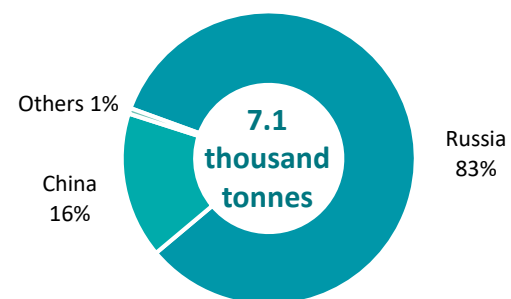
Changes in hypochlorite, chlorite and hypobromite imports



Changes in chlorate and perchlorate, bromate and perbromate, iodate and periodate imports



Structure of hypochlorite, chlorite and hypobromite imports in 2020



Structure of chlorate and perchlorate, bromate and perbromate, iodate and periodate imports in 2020



- In 2020, hypochlorite, chlorite and hypobromite imports into Kazakhstan amounted to 7.1 thousand tonnes, while CAGR in the last 5 years was 30%. In 2020, the majority of hypochlorite, chlorite and hypobromite imports came from Russia (5.9 thousand tonnes or 83%). Hypochlorites, chlorites and hypobromites are used as dyes or bleaches, in photography, and as an antiseptic in medicine.
- Chlorate and perchlorate, bromate and perbromate, iodate and periodate imports into Kazakhstan were instable In the last 5 years, with CAGR of -4%. The main supplier is China (80%). They are used as an oxidant, in organic fusion, to print textile materials, in medicine, and to produce explosives.

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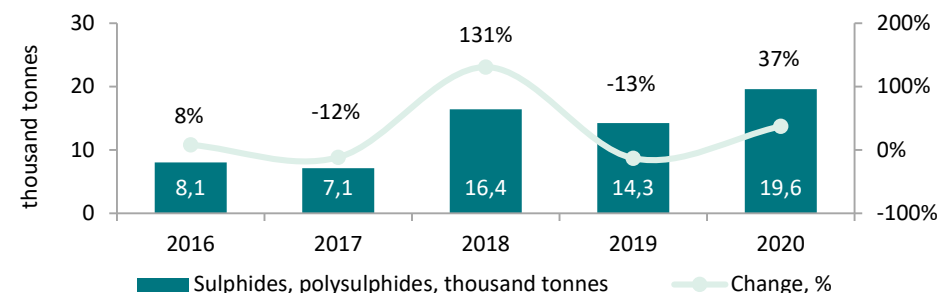
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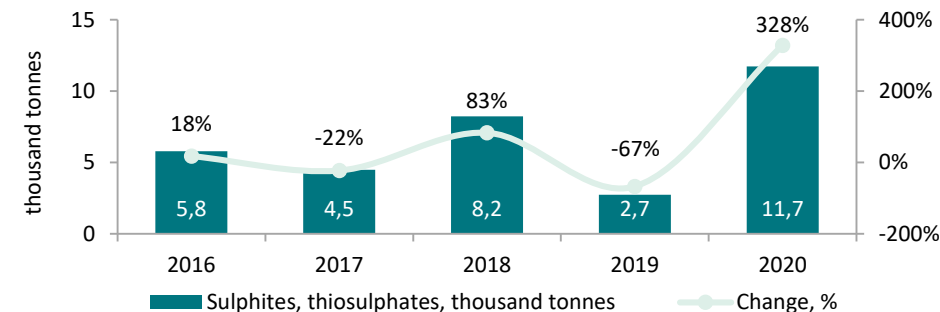
# Sulphide, semi-sulphide and sulphite, thiosulphate imports



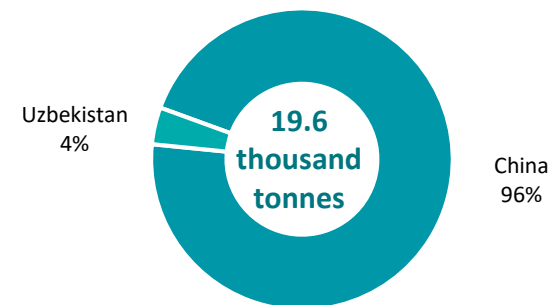
## Changes in sulphide and semi-sulphide imports



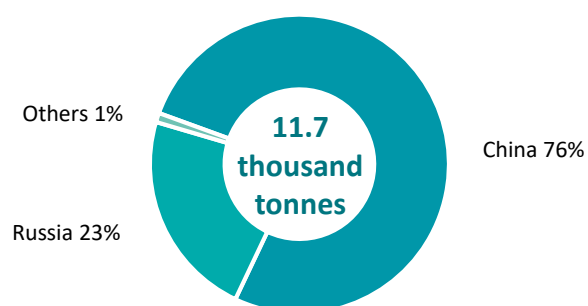
## Changes in sulphite and thiosulphate imports



## Structure of sulphide and semi-sulphide imports in 2020



## Structure of sulphite and thiosulphate imports in 2020



- In 2020, sulphide and semi-sulphide imports increased 37% compared to 2019. CAGR in the last 5 years was 25%. In 2020, nearly all sulphide and semi-sulphide imports came from China (18.8 thousand tonnes). Sulphides and semi-sulphides are used to produce organic compounds, to remove fur in tanning, in dyeing, as a copper absorbent to clean nickel, in medicine, and to bronze plait timber and plaster.
- Sulphite and thiosulphite imports also grew from 2.7 thousand tonnes in 2019 to 11.7 thousand tonnes in 2020. The main sulphide and semi-sulphide importers in 2020 were China (76% or 9 thousand tonnes) and Russia (23% or 2.6 thousand tonnes). They are used in organic fusion; to produce indigo, bleach wool or silk and treat latex; in tanning, wine-making, photography, beer brewing and medicine; to treat resin and as an antiseptic.

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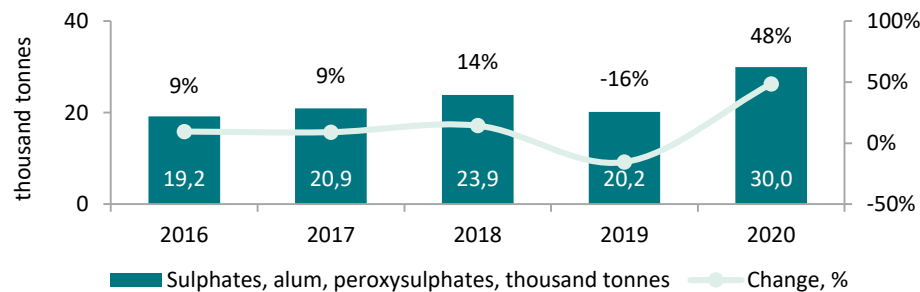




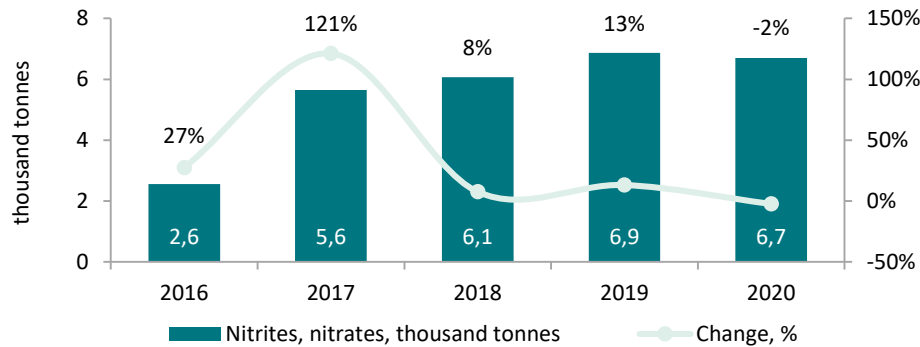
# Sulphate, alum, peroxysulphate, nitrite and nitrate imports



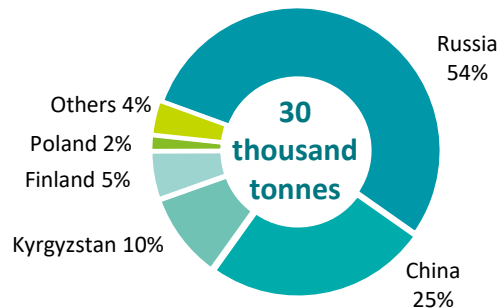
Changes in sulphate, alum and peroxysulphate imports



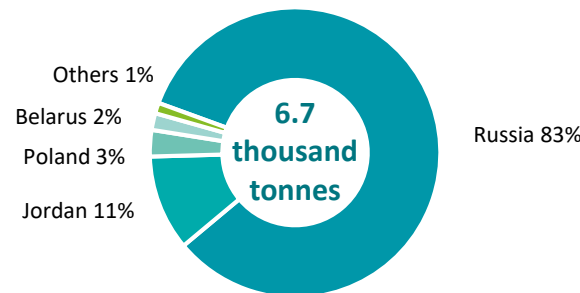
Changes in nitrite and nitrate imports



Structure of sulphate, alum and peroxysulphate imports in 2020



Structure of nitrite and nitrate imports in 2020



- The last 5 years have seen an increase in sulphate, alum and peroxysulphate imports into Kazakhstan to 30 thousand tonnes in 2020. The main suppliers were Russia – 16.2 thousand tonnes, China–7.5 thousand tonnes and Kyrgyzstan – 2.9 thousand tonnes.
- In 2016-2020, nitrite and nitrate import CAGR was 27%. In 2020, imports into Kazakhstan of 6.7 thousand tonnes came predominantly from Russia (5.6 thousand tonnes or 83%) and Jordan (0.7 thousand tonnes or 11%). Nitrites and nitrates are used as oxidants in vat dyeing and organic fusion; to process meat; in photography and also as rat poison.

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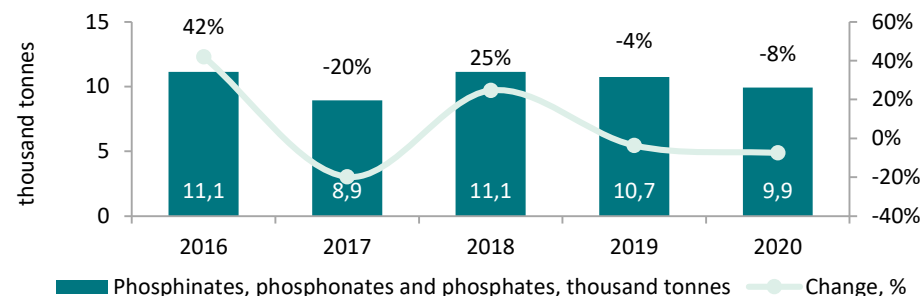
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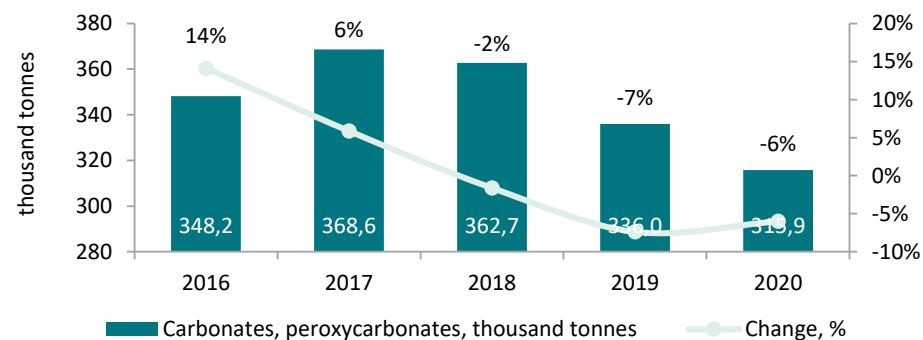
# Phosphinate, phosphonate and phosphate, and carbonate, peroxycarbonate imports



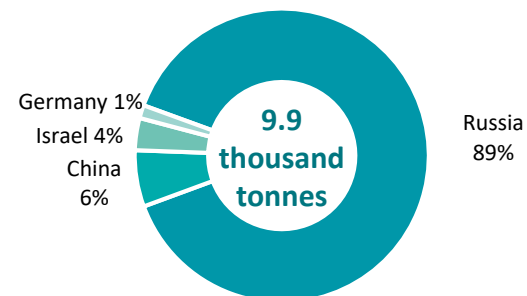
## Changes in phosphinate, phosphonate and phosphate imports



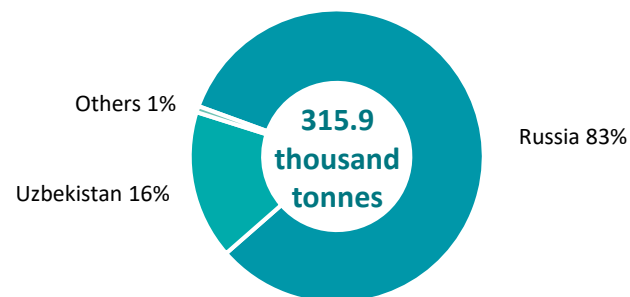
## Changes in carbonate and peroxycarbonate imports



## Structure of phosphinate, phosphonate and phosphate imports in 2020



## Structure of carbonate and peroxycarbonate imports in 2020



- In 2020, phosphinate, phosphonate and phosphate imports in Kazakhstan amounted to 9.9 thousand tonnes with CAGR for the last 5 years of -3%. In 2020, 89% or 8.8 thousand tonnes of imports came from Russia.
- Carbonate and peroxycarbonate imports into Kazakhstan amounted to 315.9 thousand tonnes in 2020. The main carbonate and peroxycarbonate suppliers to Kazakhstan were Uzbekistan with 51.5 thousand tonnes and Russia with 262 thousand tonnes. CAGR for imports in the last 5 years was -2%. Carbonates and peroxycarbonates are used in medicine to manufacture tablets; produce carbonated drinks, baking powder, produce porcelain, oil paints, fluxing agents and special pastes; in pyrotechnics and to produce transfusible glass and luminescent paints.

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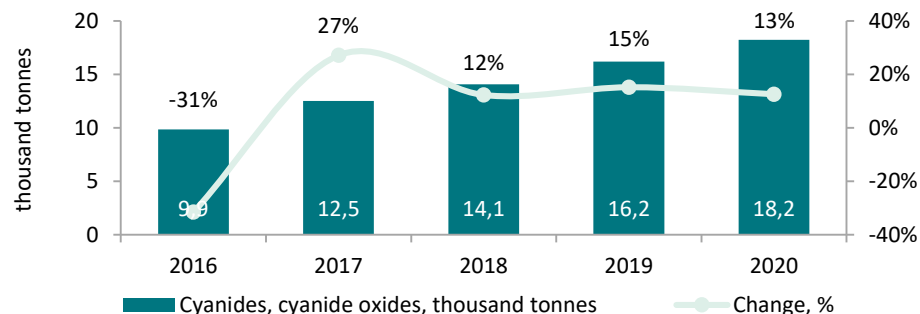
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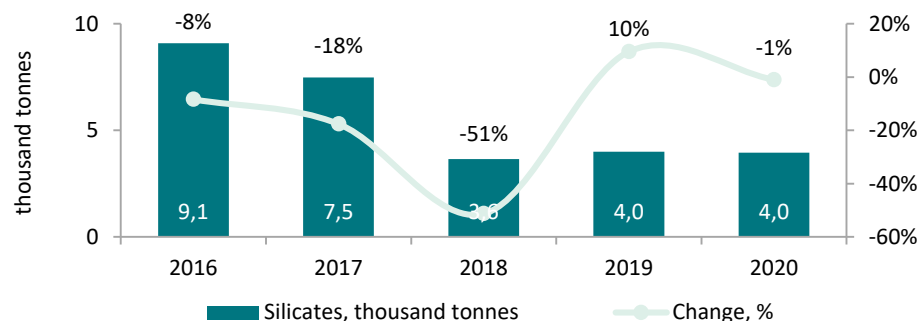
# Cyanide, cyanide oxide and silicate imports



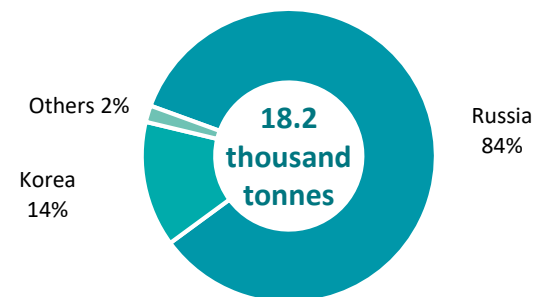
## Changes in cyanide and cyanide oxide imports



## Changes in silicate imports



## Structure of cyanide and cyanide oxide imports in 2020



## Structure of silicate imports in 2020



- In 2020, cyanide and cyanide oxide imports into Kazakhstan increased 13% to 18.2 thousand tonnes. CAGR in the last 5 years was 17%. In 2020, Russia was responsible for a significant share of imports (15.4 thousand tonnes) and Korea (2.5 thousand tonnes). Cyanide and cyanide oxide are used in the gold or silver metallurgy process, in gold or silver electrodeposition, photography or, lithography; as a tool to destroy parasites or as an insecticide.
- Silicate imports in the last five years have been unstable, falling dramatically from 9.1 thousand tonnes in 2016 to 4 thousand tonnes in 2020. Russia was responsible for the majority of imports in 2020 (99%). Silicates are used to produce cardboard or agglomerated carbon or fire-resistant materials; to produce detergents, tan metals, and in scale prevention structures.

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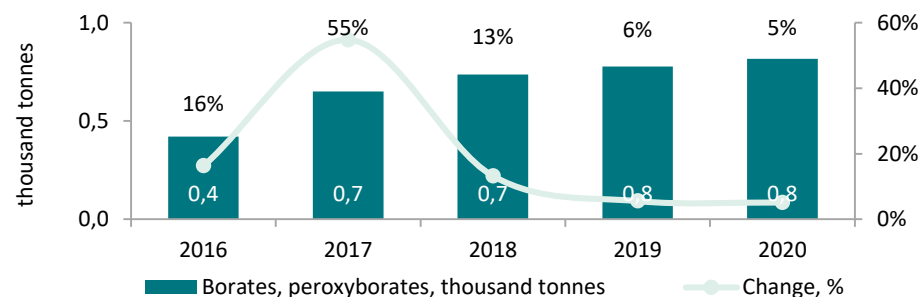
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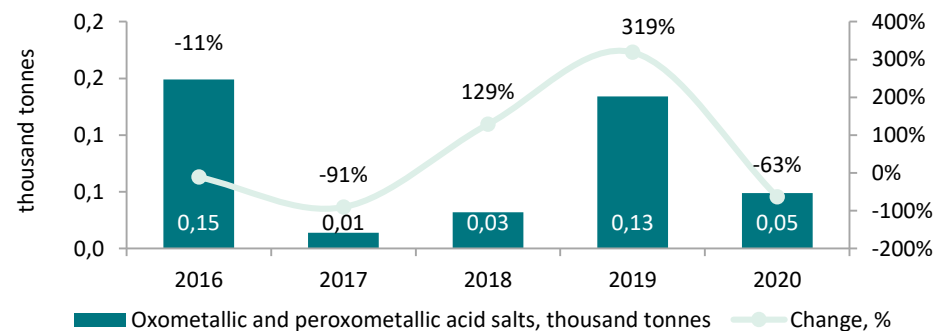
# Borate, peroxyborate and oxometallic and peroxometallic acid salt imports



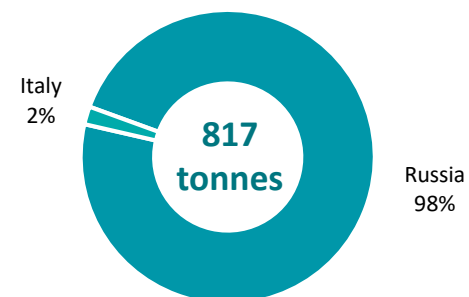
## Changes in borate and peroxyborate imports



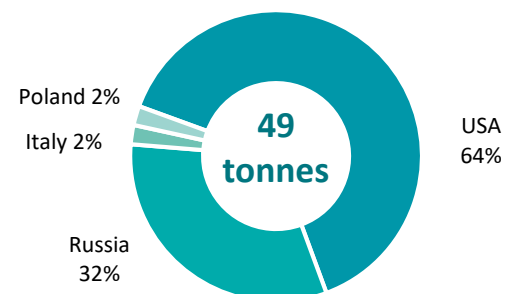
## Changes in oxometallic and peroxometallic acid salt imports



## Structure of borate and peroxyborate imports in 2020



## Structure of oxometallic and peroxometallic acid salt imports in 2020



- Borate and peroxyborate imports into Kazakhstan have been growing steadily in the last 5 years, reaching 817 tonnes in 2020. The main supplier in 2020 was Russia with 798 tonnes. Borate and peroxyborate are used as antiseptic, to produce fire-retardant textile materials or as a flux in ceramics; as a suppresser in medicine or in toothpaste.
- In 2016-2020, CAGR for the import of oxometallic and peroxometallic acid salts was -24%, which in 2020 equated to 49 tonnes. The main exporters to Kazakhstan were the USA (64%) and Russia (32%).

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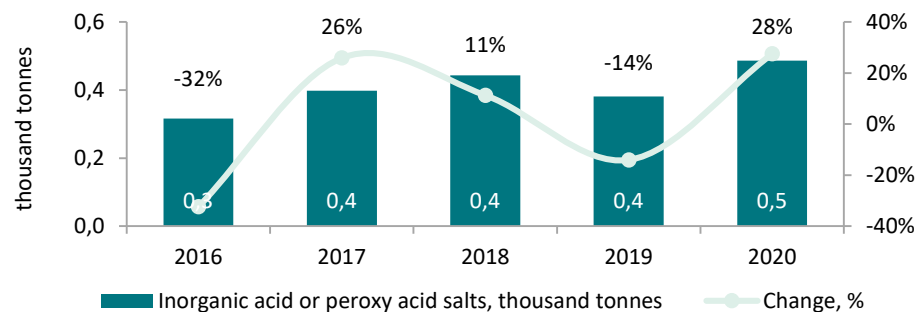
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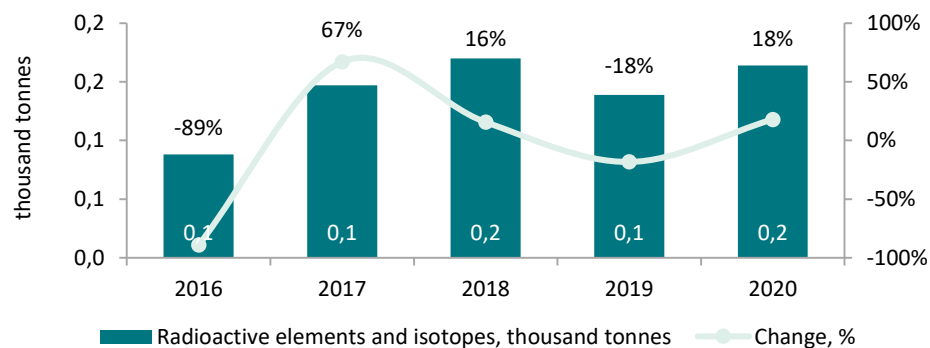
# Inorganic acid salts or peroxy acid and radioactive element and isotope imports



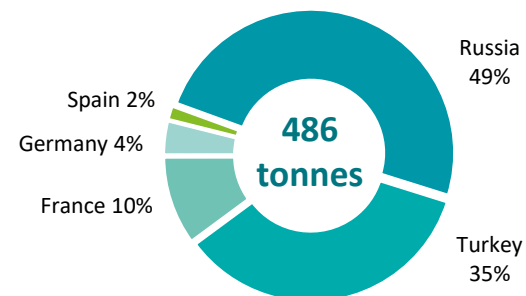
Changes in inorganic acid or peroxy acid salt imports



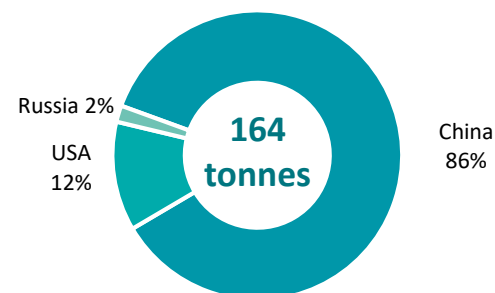
Changes in radioactive element and isotope imports



Structure of inorganic acid or peroxy acid salt imports in 2020



Structure of radioactive element and isotope imports in 2020



- Inorganic acid or peroxy acid salt imports to Kazakhstan in 2020 amounted to 486 tonnes. In 2020, the main inorganic acid or peroxy acid salt suppliers into Kazakhstan were Russia (49%), Turkey (35%) and France (10%).
- Radioactive element and isotope imports into Kazakhstan doubled from 2016 levels to 164 tonnes in 2020. In 2020, China (141 tonnes) supplied 86% of all imported radioactive elements and isotopes.

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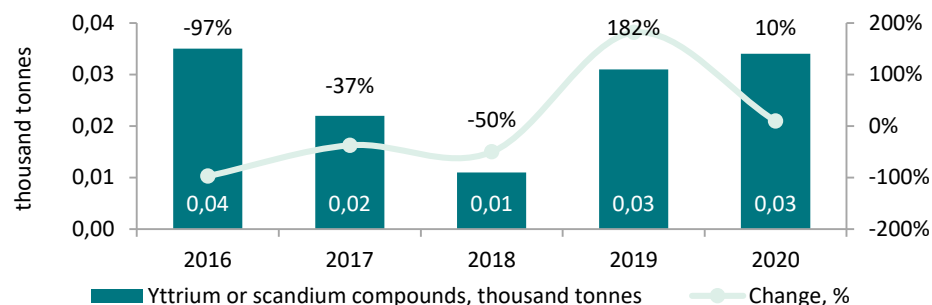
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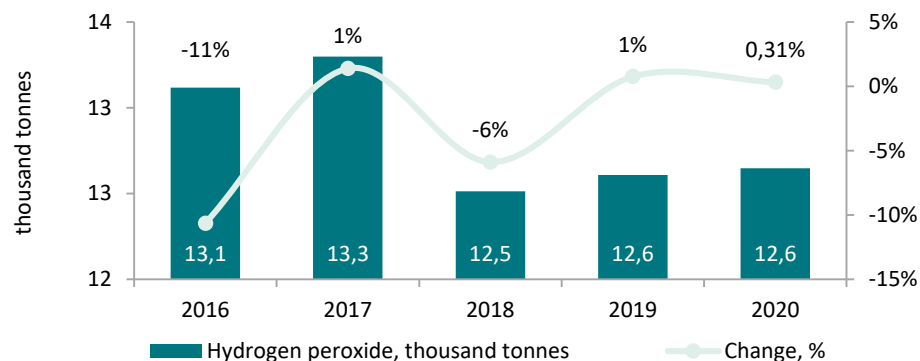
# Yttrium or scandium compound and hydrogen peroxide imports



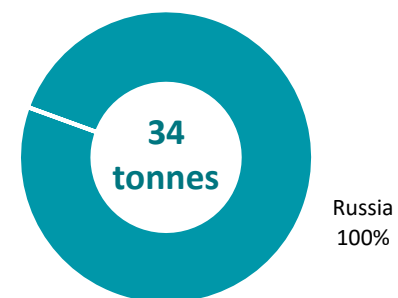
## Changes in yttrium or scandium compound imports



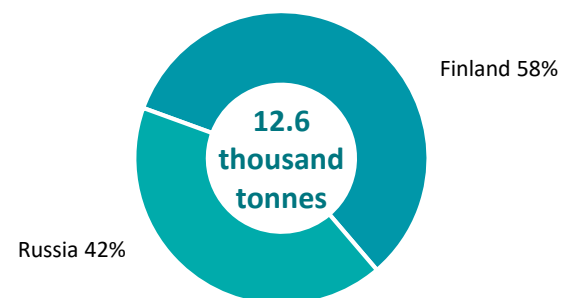
## Changes in hydrogen peroxide imports



## Structure of yttrium or scandium compound imports in 2020



## Structure of hydrogen peroxide imports in 2020



- In 2020, yttrium or scandium compound imports into Kazakhstan amounted to 34 tonnes, all of which came from Russia.
- In 2016-2020, hydrogen peroxide imports fell by 500 tonnes. In 2020, Russian was responsible for 42% of imports and Finland -58%. In heavy industry, hydrogen peroxide is used as a catalytic agent, hydrogenant agent, epoxidation agent in olefin epoxidation.

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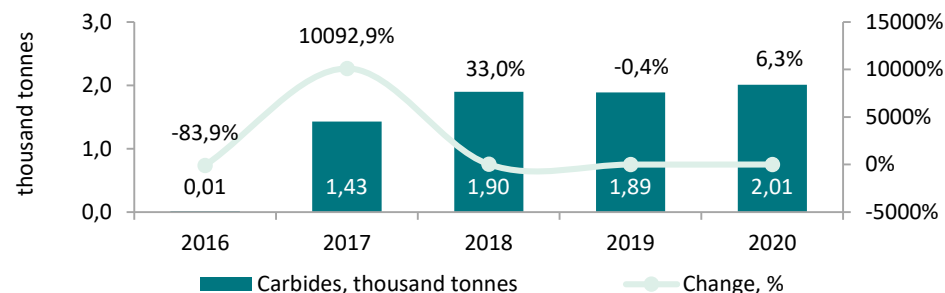




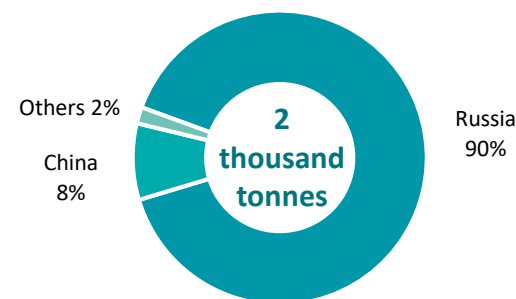
# Carbide and hydride, nitrite, azide, silicide and boride imports



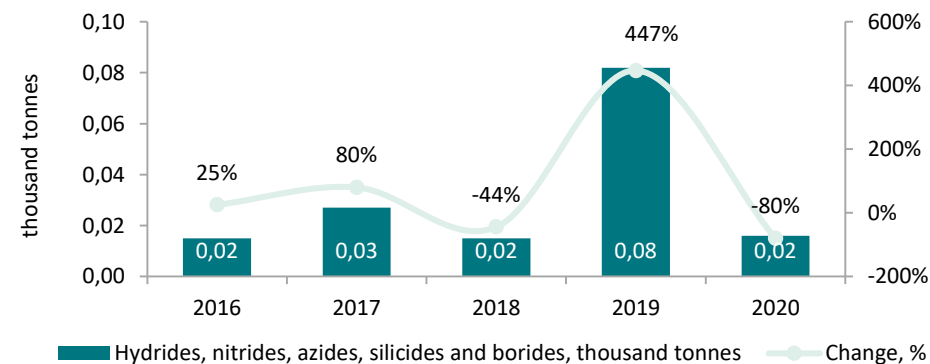
## Changes in carbide imports



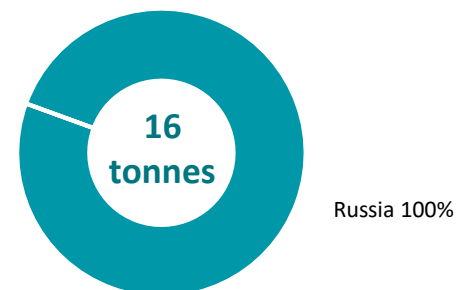
## Structure of carbide imports in 2020



## Changes in hydride, nitrite, azide, silicide and boride imports



## Structure of hydride, nitrite, azide, silicide and boride imports in 2020



- Carbide imports have grown significantly in the last five years from 14 tonnes in 2016 to 2 thousand tonnes in 2020. The main carbide exporters to Kazakhstan in 2020 were Russia (1.8 thousand tonnes) and China (169 tonnes). Carbides are used in cast iron and steel, ceramic, alloy, both abrasive and polishing material, reducing agent, deoxidising agent and catalytic agent production.
- Russia was responsible for all hydride, nitrite, azide, silicide and boride imports into Kazakhstan. In 2016-2020, CAGR for imports was 2%.

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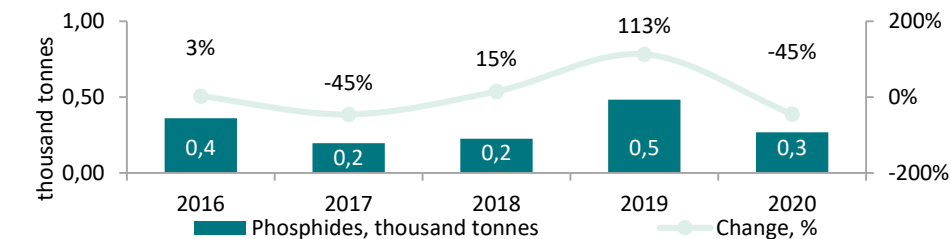
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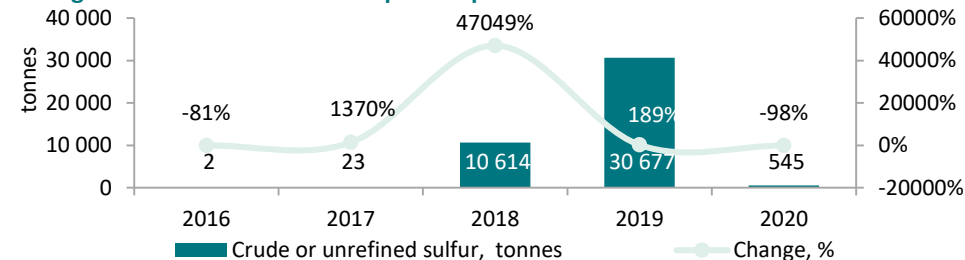
# Phosphide and sulfur imports



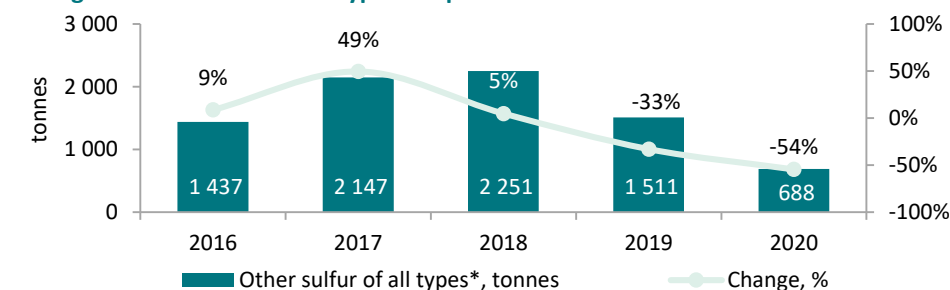
## Changes in phosphide imports



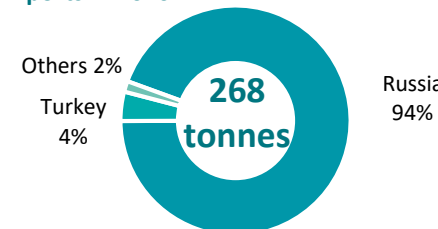
## Changes in crude or unrefined sulphur imports



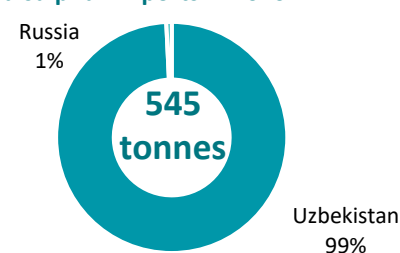
## Changes in other sulfur of all types\* imports



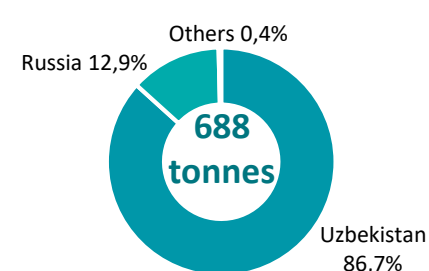
## Structure of phosphide imports in 2020



## Structure of crude or unrefined sulphur imports in 2020



## Structure of other sulfur of all types\* imports in 2020



- Phosphide imports into Kazakhstan fell 45% in 2020 to 268 tonnes. In 2020, Russia was responsible for practically all phosphide imports (252 tonnes).
- In 2020, imports of crude or unrefined sulfur in Kazakhstan decreased by 98% compared to 2019 and amounted to 545 tonnes. In 2020, Uzbekistan accounted for almost all imports of raw or unrefined sulfur (541 tonnes).
- Over the period 2016-2020, CAGR of imports of other sulfur of all types was -17%, and imports reached 688 tonnes in 2020. In 2020, the main exporter to Kazakhstan was Uzbekistan (87%). Kazakhstan produces sulfur, but there are no official statistics on production.

\*Other sulfur of all kinds, including commercial sulfur, except freeze-dried, precipitated and colloidal sulfur, crude or unrefined

Source: trademap.org

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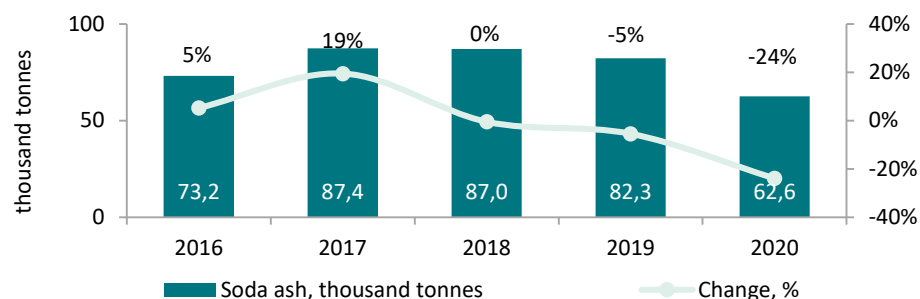
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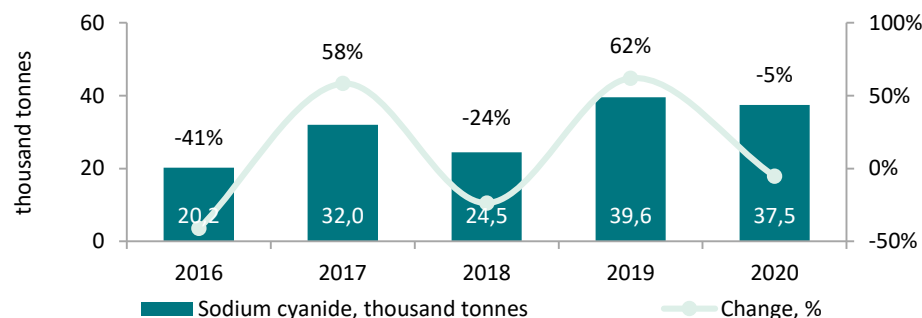
# Soda ash and sodium cyanide imports



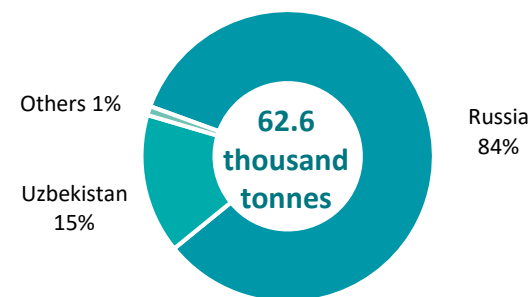
## Changes in soda ash imports



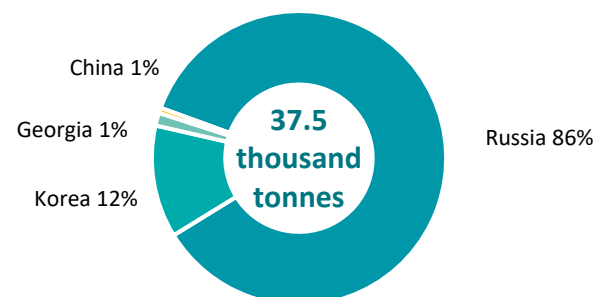
## Changes in sodium cyanide imports



## Structure of soda ash imports in 2020



## Structure of sodium cyanide imports in 2020



- Soda ash imports fell 24% in 2020 to 62.6 thousand tonnes. CAGR for 2016-2020 was -4%. In 2020, 52.3 thousand tonnes (or 84%) of imports were from Russia and 9.7 thousand tonnes (or 15%) from Uzbekistan. Soda ash is used in the glass, ceramic and textile industries; in detergent production; in dyeing; to produce sodium hydroxide, sodium salts and indigo; in the metallurgical production of tungsten, bismuth, stibium or vanadium; in photography; and to clean industrial water.
- Sodium cyanide imports amounted to 37.5 thousand tonnes in 2020. Russia is the leading importer (86%), followed by South Korea (12%). Sodium cyanide is used to remove precious metals (gold or silver) from ore using selective leaching, as a cyanide agent in of nitrile, isonitrile and dye production; and to increase surface hardness and durability, and to prevent steel item fatigue.

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# Main competitors among inorganic chemical importers and their specific advantages



The following is a list of companies displaying a number of advantages compared to local companies, importing inorganic chemicals into Kazakhstan. Overseas production capacity is significantly higher, allowing producers to benefit from economies of scale, ensuring pricing flexibility, especially after modernisation. Overseas products tend to come with a brand, well-developed marketing strategy and well-developed transportation and logistics network.

## Inorganic chemical importers

No.	Company	Location	Product	Additional information
<b>Russia</b>				
1.	Biisk Oleum Plant	Biisk, Altai Region	Sulphuric acid, oleum, battery acid, sulphuric electrolyte	<a href="https://fkpboz.ru/">https://fkpboz.ru/</a>
2.	Saratovorgsintez LLC	Saratov, Saratov Oblast	Acrylonitrile, ethane nitrile and sodium cyanide	<a href="https://saratov.lukoil.ru/ru/">https://saratov.lukoil.ru/ru/</a>
3.	EvroKhim Group	Kingisepp, Leningrad Oblast	Nitrogen, phosphorous, potassium and complex fertilisers, ammonia	<a href="https://www.eurochemgroup.com/ru/">https://www.eurochemgroup.com/ru/</a>
4.	Korund-Tsian LLC	Dzerzhinskiy, Nizhni-Novgorod Oblast	Prussiate (sodium cyanide and potassium cyanide)	<a href="http://www.korund-nn.ru/">http://www.korund-nn.ru/</a>
5.	OJSC Schekinoazot	Pervomaiskiy, Tula Oblast	Sulphuric acid, technical formalin, carbon dioxide, alkaline soda ash alloy	<a href="http://n-azot.ru/factory.php">http://n-azot.ru/factory.php</a>
<b>China</b>				
6.	Xinjiang Zhongtai Chemical	Urumchi	Chloralkali, coarse salt, calcium carbide and coke products	<a href="http://www.zthx.com/en/">http://www.zthx.com/en/</a>
7.	Yunnan Yuntianhua	Kunming, Yunnan Province	Phosphorous fertiliser, sodium fluorosilicate, superphosphate, potassium sulphate, ammonium phosphate, monoammonium phosphate, diammonium phosphate	<a href="http://www.yuntianhua-group.com/">http://www.yuntianhua-group.com/</a>
8.	Anhui Shuguang Chemical Group	Anqing, Anhui Province	Sodium cyanide, liquid sodium cyanide, solid potassium cyanide, potassium argentocyanide, potassium cyanaurite, silver cyanide, montanic acid and its sodium salt, hepato-iminodiacetic acid and its sodium salt, sodium thiocyanate	<a href="https://www.sgchem.com/">https://www.sgchem.com/</a>
<b>Others</b>				
9.	JSC Concern Stirol	Gorlovka, Donetsk Oblast, Ukraine	Mineral and complex fertiliser	<a href="http://www.ostchem.com/en">http://www.ostchem.com/en</a>

Source: open sources

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# Potential product import substitution in Kazakhstan (1/2)



## Exports and imports by commodity group in 2019\*, million USD

Index	Exports	Imports	Net position
Fuel and energy	37,580.7	819.2	36,761.5
Metals and metal items	6,529.3	2,262.8	4,266.5
Agricultural products and food	1,700.7	248.2	1,452.6
Precious metals and jewellery	2,643.8	1,815.2	828.6
Animal hides and furs	534.1	36.7	497.4
Timber and paper	7	68.6	-61.6
Building materials	55.7	265.6	-209.9
Furniture, interiors and exteriors	26.3	241.6	-215.3
Footwear and haberdashery	4.6	272.8	-268.2
Textiles	133.4	906	-772.6
Chemical products	1,770.9	3,286.6	-1,515.7
Machinery and equipment	661.4	13,009.4	-12,348
Other goods	10.3	826.8	-816.2
<b>Total</b>	<b>51,659.3</b>	<b>24,412.1</b>	<b>27,247.6</b>

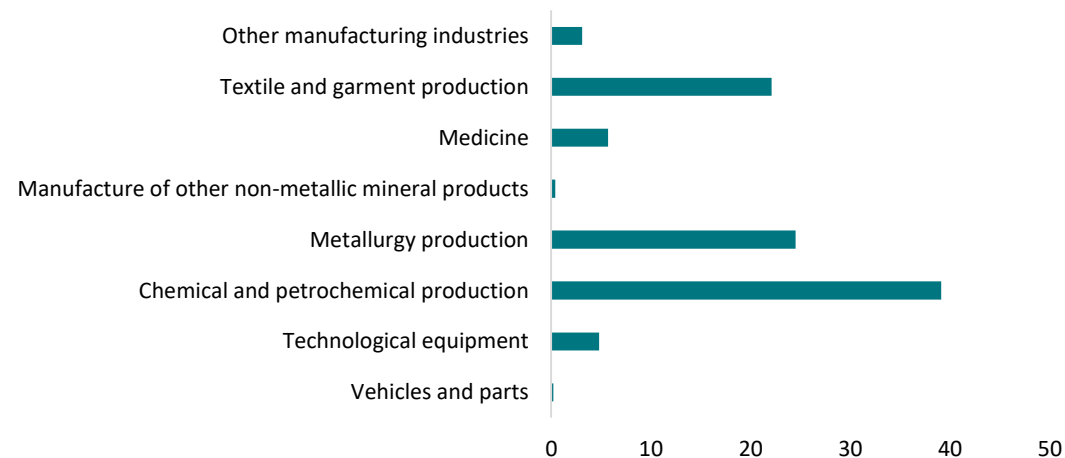
\*2020 data partially available

Source: Damu Fund analysis, EAEU analysis, stat.gov, kgd.gov.kz

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- In 2019, Kazakhstan was a net mineral, oil and gas product, and metal exporter.
- According to the Damu Fund, total import substitution potential of 18.4 billion USD is broken down as follows:
  - 535.9 million USD of imports with low substitution potential;
  - 2,037.1 million USD with the potential for partial substitution;
  - 16,162.5 million USD with high substitution potential.
- Sectors with high import substitution potential include chemical and petrochemical production, metallurgy, machinery and equipment; textile and clothing products.
- Sectors with partial substitution potential include footwear, haberdashery, timber, paper and paper items. Sectors with low potential include furniture and building materials.

## Share in imports proposed for commodity position substitution, %



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## Potential product import substitution in Kazakhstan (2/2)



Exports and imports by commodity group in 2020\*, million USD

Index	Exports	Imports	Net position
Sulphates, alum and peroxysulphates	5,999	21,328	(15,329)
Sulphuric acid and oleum	1,210	6,426	(5,216)
Ammonia	8	10,667	(10,659)
Sodium and potassium hydroxides; sodium and potassium peroxides	1,181	18,297	(17,116)
Chromic oxides and hydroxides	63,194	41	63,153
Carbonates and peroxy carbonates	398	68,164	(67,766)
Carbides	18	715	(697)
Sulphides and semi-sulphides	2,748	11,331	(8,583)
Sulphites and thiosulphates	245	5,251	(5,006)
<b>Total</b>	<b>75,001</b>	<b>142,220</b>	<b>(67,219)</b>

- In 2020, Kazakhstan was a net inorganic chemical importer, importing large amounts of carbonates, peroxy carbonates, sodium and potassium hydroxides, sodium and potassium peroxides and others.
- Total potential for inorganic chemical product import substitution for which exports exist is worth 68 million USD.
- Chemical production is recognised as having good import substitution potential. According to the Damu Fund, the chemical and petrochemical sectors account for 39.1% of imports from other countries proposed for commodity substitution.
- On the whole, chemical production in Kazakhstan grew 65% in the last 5 years, with product range also increasing. High dependence on inorganic chemical product imports has been recorded for all groups, which has led to a requirement to launch and build up modern industrial facilities, using new modern technology, to produce export-focused competitive products, and saturate the domestic market with local products.

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# Inorganic chemical product exports



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# Sulphate, alum and peroxysulphate exports



Inorganic chemical product exports from Kazakhstan amounted to over 120 thousand tonnes in 2020. On the whole, there has been a decline in exports compared to 2019, partially due to the global pandemic.

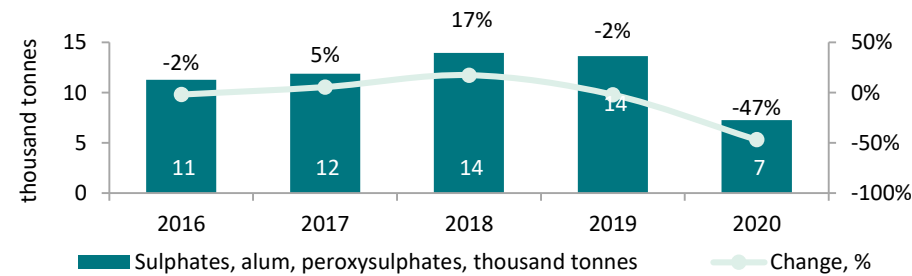
The main inorganic chemical importers into Kazakhstan are CIS countries (over 88 thousand tonnes in 2020). Exports of Kazakhstan inorganic chemicals to Russia account for 72% of total exports.

In terms of exporting its product, Kazakhstan benefits:

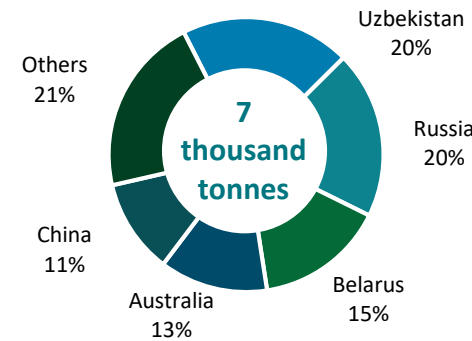
- being located in the centre of Eurasia with easy access to the major markets of Central Asia, Russia and China. Its geographic advantage helps reduce logistical costs.
- within the framework of the EAEU, from good trade relations with its neighbours (Armenia, Belarus, Kyrgyzstan and Russia), creating, in turn, access to neighbouring country markets.

Kazakhstan also has an accessible resource base (mainly oil and gas) for the development of new directions for the production of inorganic chemistry products.

Changes in sulphate, alum and peroxysulphate exports, thousand tonnes



Structure of sulphate, alum and peroxysulphate exports in 2020



- Sulphate, alum and peroxysulphate exports decline 47% in 2020 to 7 tonnes.
- The largest exporters of sulphate, alum and peroxysulphate from Kazakhstan in 2020 were Uzbekistan (20%), Russia (20%) and Belarus (15%).

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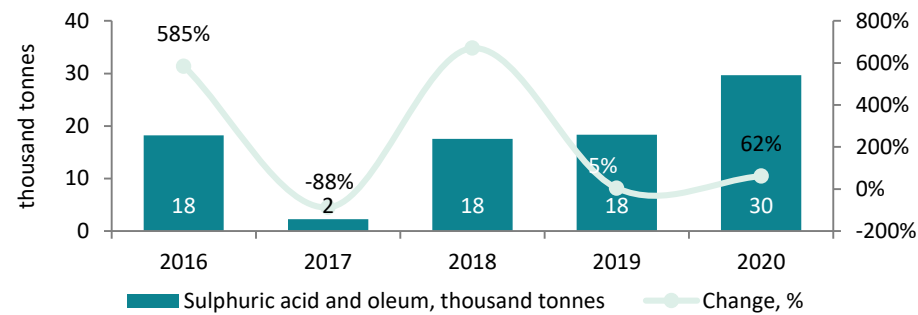
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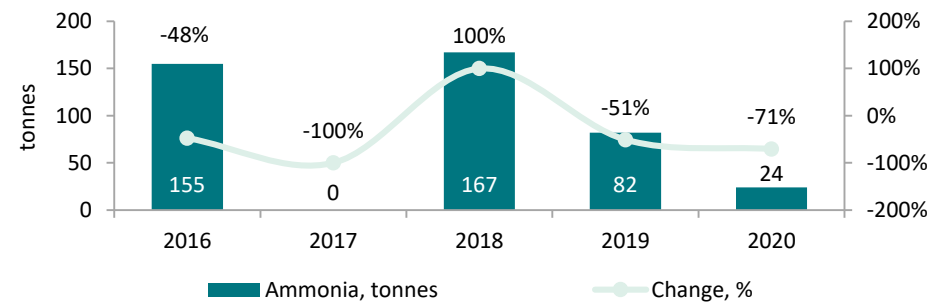
# Sulphuric acid, oleum and ammonia exports



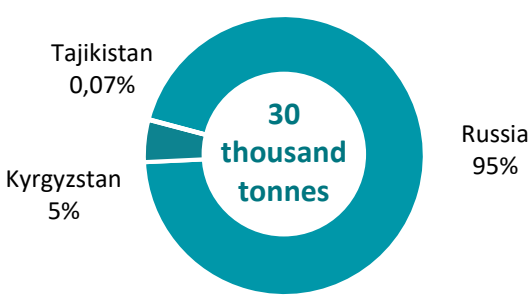
Changes in sulphuric acid and oleum exports, thousand tonnes



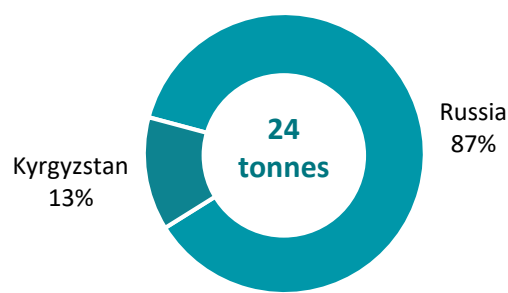
Changes in ammonia exports, tonnes



Structure of sulphuric acid and oleum exports in 2020



Structure of ammonia exports in 2020



- Kazakhstan exported 30 thousand tonnes of sulphuric acid and oleum in 2020, which is 62% more than in 2019. CAGR for sulphuric acid and oleum exports in 2016–2020 was 13%. In 2020, the main exporters of sulphuric acid and oleum from Kazakhstan were Russia - 28 thousand tonnes and Kyrgyzstan – 1.4 thousand tonnes.
- In 2020, Kazakhstan exported 24 tonnes of ammonia, which is 71% less than in 2019. In the last five years, CAGR for the decline in ammonia exports was 37%. The main exporters of Kazakhstan ammonia in 2020 were Russia – 20 tonnes and Kyrgyzstan – 3 tonnes.

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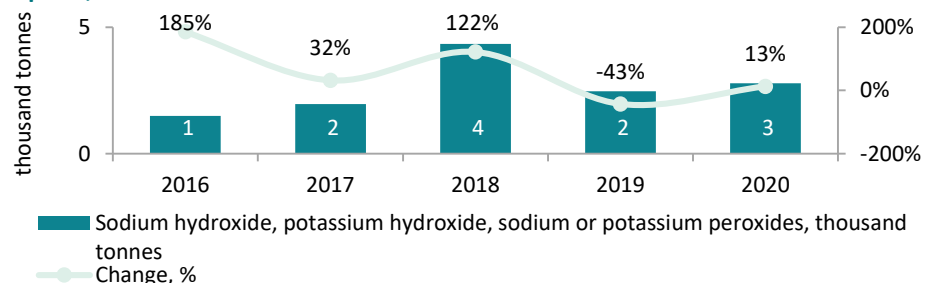
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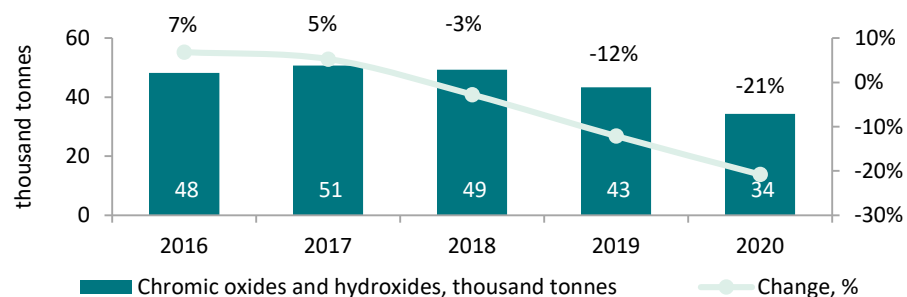
# Sodium hydroxide, potassium hydroxide, sodium or potassium peroxide, chromic oxide and hydroxide exports



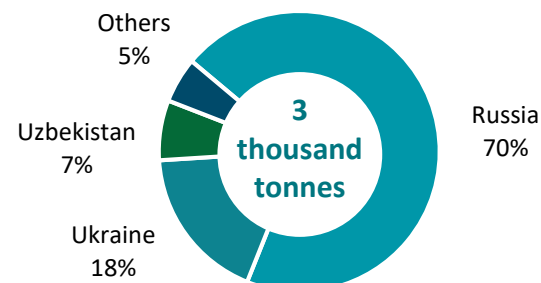
Changes in the sodium hydroxide, potassium hydroxide, sodium potassium peroxide exports, thousand tonnes



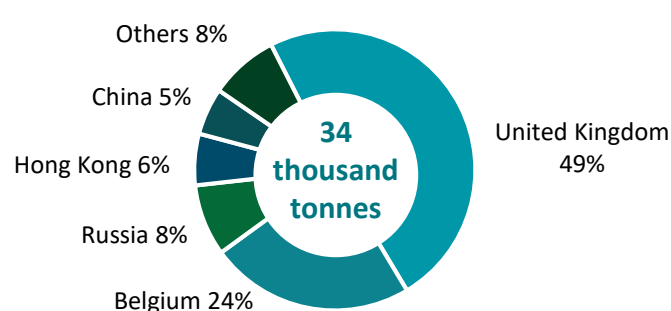
Changes in chromic oxide and hydroxide exports, thousand tonnes



Structure of sodium hydroxide, potassium hydroxide, sodium or potassium peroxide exports in 2020



Structure of chromic oxide and hydroxide exports in 2020



- Sodium hydroxide, potassium hydroxide, sodium or potassium peroxide exports from Kazakhstan reached 3 thousand tonnes in 2020. 2016-2020 saw stable export growth, with CAGR of 17%. In 2020, the main product customers were Russia – 1.9 thousand tonnes and Ukraine – 499 tonnes.
- Chromic oxide and hydroxide exports in the last 5 years have been declining (-8%), while in 2020 that figure reached 34 thousand tonnes. The leading importers of chromic oxide and hydroxide from Kazakhstan in 2020 are the UK – 16.8 thousand tonnes and Belgium – 8 thousand tonnes.

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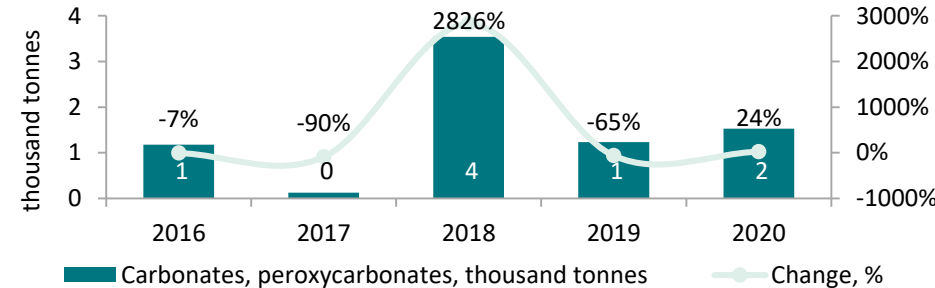
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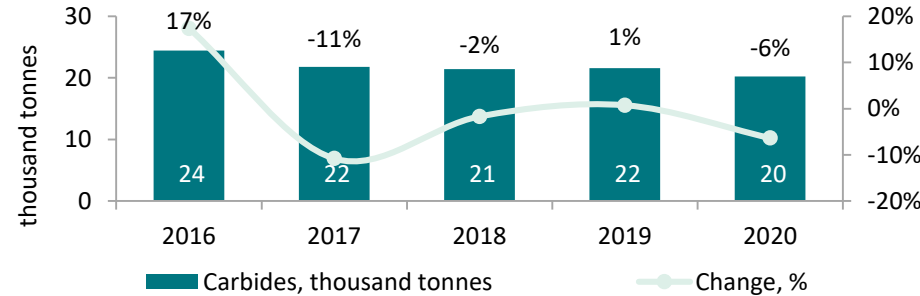
# Carbonate, peroxy carbonate and carbide exports



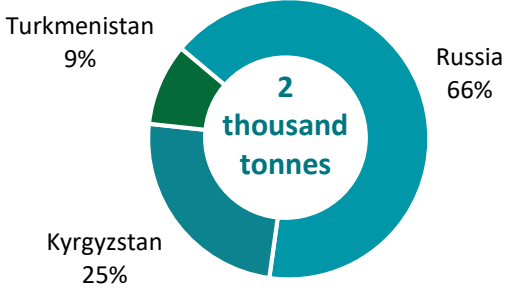
Changes in carbonate and peroxy carbonate exports, thousand tonnes



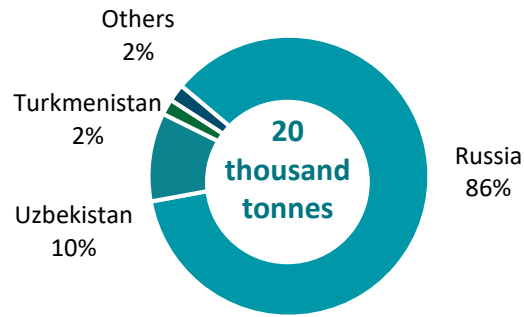
Changes in carbide exports, thousand tonnes



Structure of carbonate and peroxy carbonate exports in 2020



Structure of carbide exports in 2020



- In 2020, Kazakhstan exported 2 thousand tonnes of carbonate and peroxy carbonate, which is 24% more than in 2019. CAGR for carbonate and peroxy carbonate exports in 2016–2020 was 7%. In 2020, Kazakhstan exported the product to three countries: Russia (1,012 tonnes), Kyrgyzstan (375 tonnes) and Turkmenistan (144 tonnes).
- In 2020, Kazakhstan exported 20 thousand tonnes of carbide, which is 6% less than in 2019. In the last five years, CAGR for ammonia exports was -5%. The main importers of Kazakhstan carbide in 2020 were Russia – 17.4 thousand tonnes, Uzbekistan – 2 thousand tonnes and Turkmenistan – 365 tonnes.

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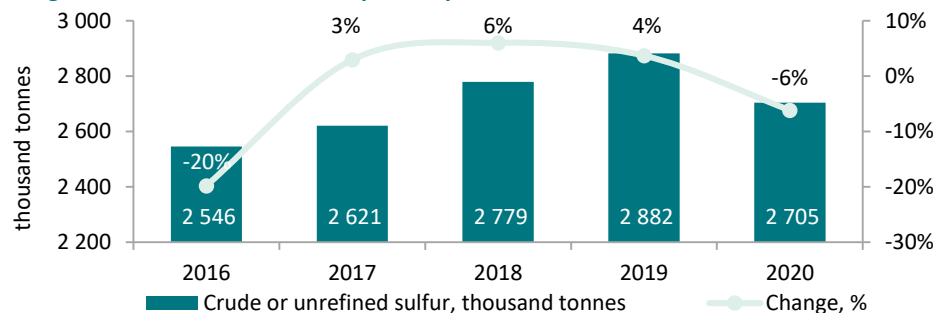
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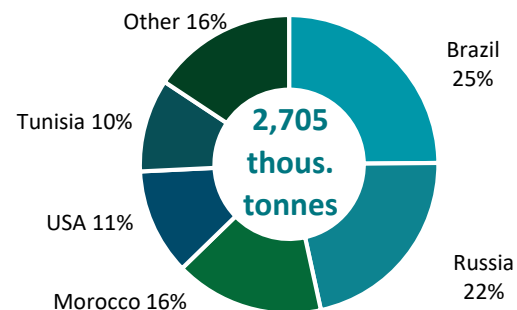
# Sulfur exports



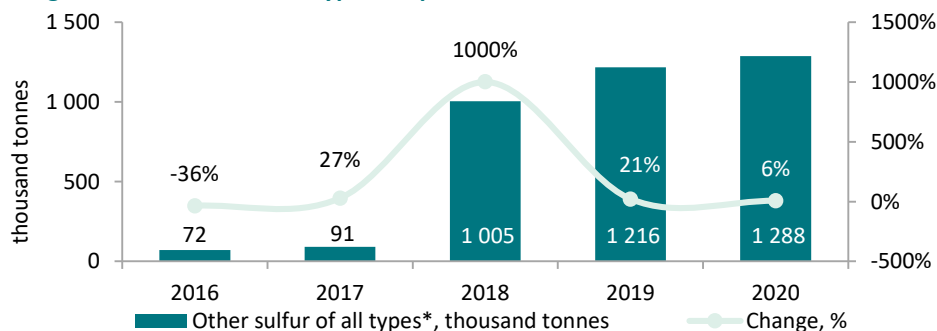
Changes in crude or unrefined sulphur exports, thousand tonnes



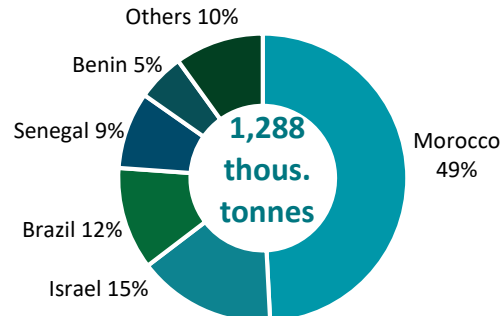
Structure of crude or unrefined sulphur exports in 2020



Changes in other sulfur of all types\* exports, thousand tonnes



Structure of other sulfur of all types\* exports in 2020



- Based on 2020 results, Kazakhstan exported 2,705 thousand tonnes of crude or unrefined sulfur, which is 6% lower compared to 2019. Over the past five years, CAGR for export growth of crude or unrefined sulfur was 2%. The main importers of Kazakhstani sulfur in 2020 were Brazil - 672 thousand tonnes, Russia - 588 thousand tonnes and Morocco - 437 thousand tonnes.
- By the end of 2020 Kazakhstan exported 1,288 thousand tonnes of other sulfur of all types\* in 2020, which is 6% more than in 2019. CAGR for export growth of other sulfur of all types over the period from 2016 to 2020 was 106%. In 2020, the main importers were Morocco (633 thousand tonnes), Israel (199 thousand tonnes) and Brazil (148 thousand tonnes).

\*Other sulfur of all kinds, including commercial sulfur, except freeze-dried, precipitated and colloidal sulfur, crude or unrefined

Source: trademap.org

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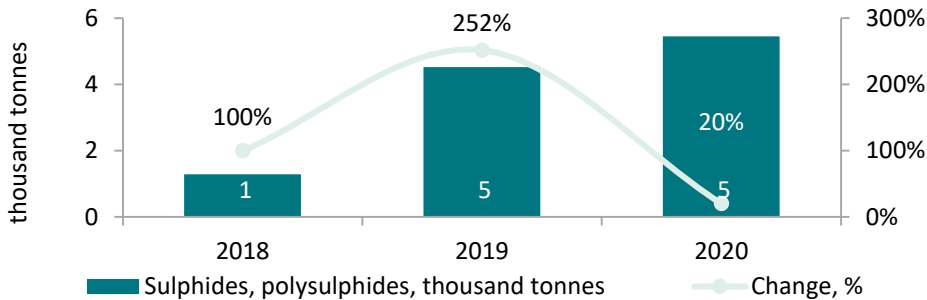
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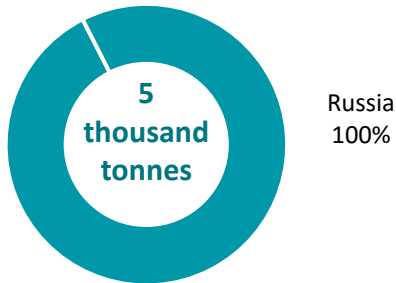
# Sulphide, semi-sulphide, sulphite and thiosulphate exports



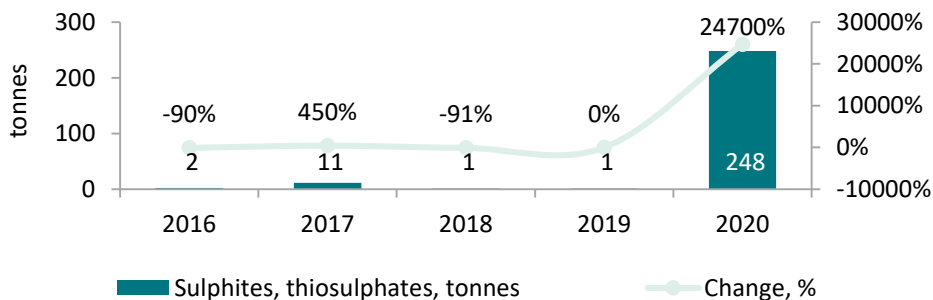
Changes in sulphide and semi-sulphide exports, thousand tonnes



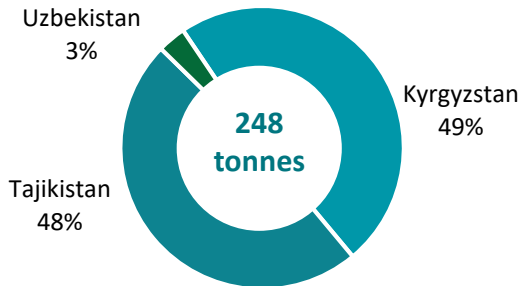
Structure of sulphide and semi-sulphide exports in 2020



Changes in sulphite and thiosulphate exports, tonnes



Structure of sulphite and thiosulphate exports in 2020



- In 2020, sulphide and semi-sulphide exports reached 5 thousand tonnes, which is 20% more than in 2019. CAGR for export growth in 2018-2020 was 106%. All product was supplied to Russia.
- Sulphite and thiosulphate exports grew significantly in 2020 to 248 tonnes. Kyrgyzstan and Tajikistan are the leading export destinations.

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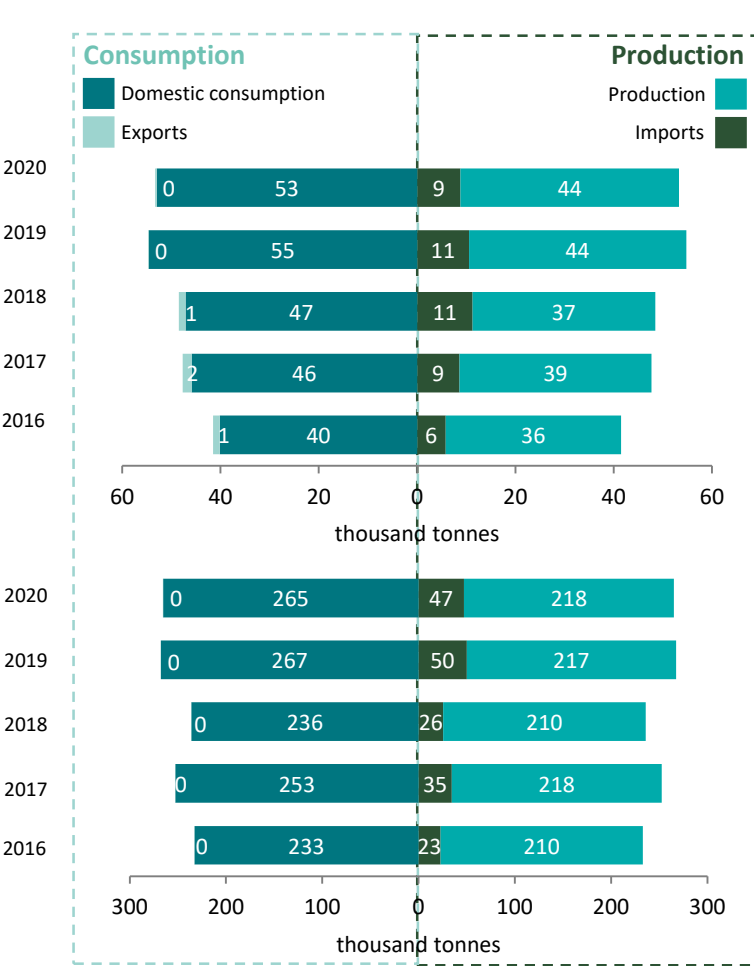
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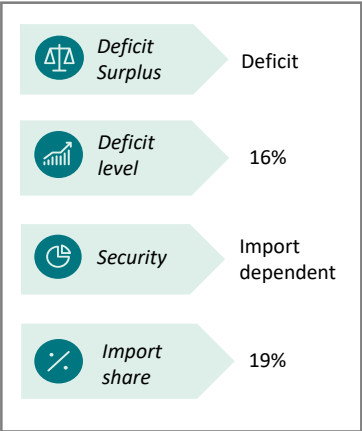
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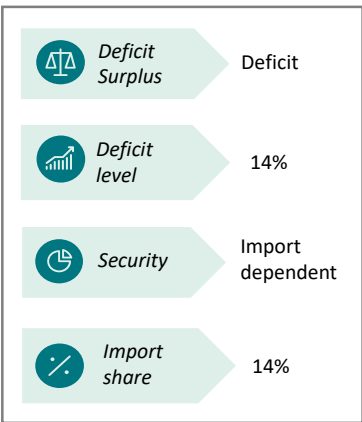
# Caustic soda and ammonia



## Caustic soda



## Ammonia



- Until 2011, Kazakhstan was a 100% importer of caustic soda, until JSC Caustic commissioned a chloralkali production plant in Pavlodar.
- Production increased 24% from 2016 to 44 thousand tonnes in 2020.
- Given the changes in caustic soda exports and imports in Kazakhstan, exports remain **insignificant**, reaching only 36 tonnes in 2020. Caustic soda imports are also unstable, comprising 9 thousand tonnes in 2020. Practically 100% of imports are from Russia, while the shares of other countries are significant.
- In 2016-2020, ammonia production in Kazakhstan amounted to 215 thousand tonnes on average.
- Both imports and the deficit level averaged **14%** for 2016-2020. Available capacity is unable to meet domestic demand in full. The country is **import dependent**.
- In Kazakhstan, the only ammonia producer is KazAzot LLP, while one of the main consumers is the mineral fertiliser producer Kazphosphat LLP.

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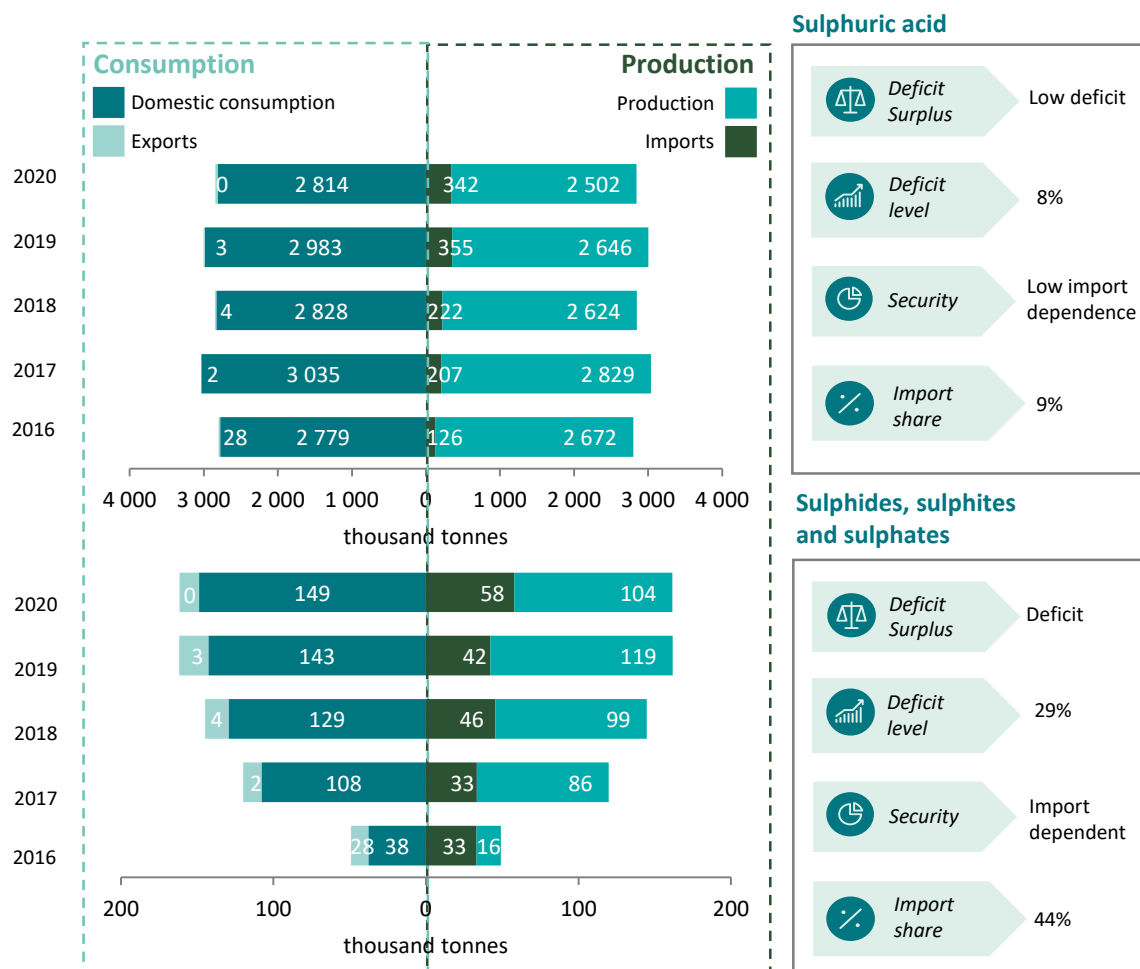
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# Sulphuric acid, sulphides, sulphites and sulphates



- In 2016-2020, sulphuric acid production in Kazakhstan averaged 2.7 million tonnes.
- Imports accounted for 9%, while the deficit was 8%. Available capacity is unable to meet domestic demand in full, and as such the country is **import dependent**.
- Over 47% of total sulphuric acid production is generated by JSC KazAtomProm subsidiaries in Karaganda Oblast, with 26% produced in East-Kazakhstan Oblast and 26% - Kyzylorda Oblast.
- In 2016-2020, sulphide, sulphite and sulphate production CAGR in Kazakhstan was 45%. Imports accounted for 44%, while product deficit was 29%, which confirms demand for the product.
- Given the current domestic production specialisation and in the event of the introduction of state policy aimed at rationalising the import of goods and services by stimulating domestic producers of similar goods, and creating new production enterprises in the country, potential sulphide, sulphite and sulphate import substitution is significant and comparable with imports. The niche is attractive for investors.

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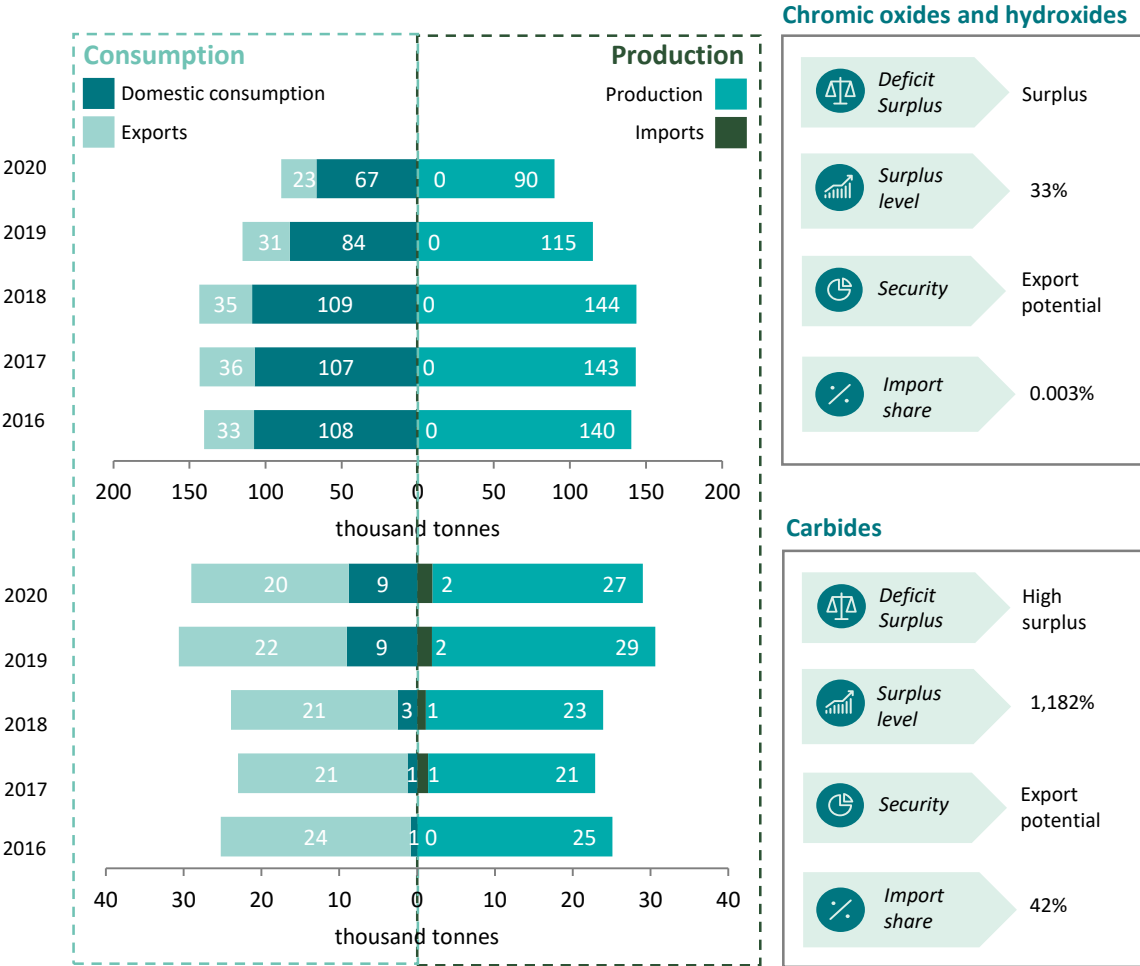
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# Chromic oxides and hydroxides, carbides



- In 2020, chromic oxide and hydroxide production in Kazakhstan fell 28%, while CAGR was -9% in 2016-2020. Nevertheless, Kazakhstan is dependent on foreign supplies of chromic oxide and hydroxide as available capacity cannot meet domestic demand. In Kazakhstan, the leader in chromic oxide and hydroxide production is JSC TNK Kazchrome.
  - Given the current domestic production specialisation and in the event of the introduction of state policy aimed at rationalising the import of goods and services by stimulating domestic producers of similar goods, and creating new production enterprises in the country, potential chromic oxide and hydroxide import substitution is insignificant and comparable with imports. The niche is less attractive for investors.
- In 2016-2020, carbide production in Kazakhstan averaged 25 thousand tonnes. JSC TEMK, which is in Karaganda Oblast, is the leading carbide producer in Kazakhstan.
  - Given the current domestic production specialisation and in the event of the introduction of state policy aimed at rationalising the import of goods and services by stimulating domestic producers of similar goods, and creating new production enterprises in the country, potential carbide import substitution is insignificant and comparable with imports. The niche is less attractive for investors.
  - Carbide production has **export potential**, even though imports accounted for 42% of product availability.

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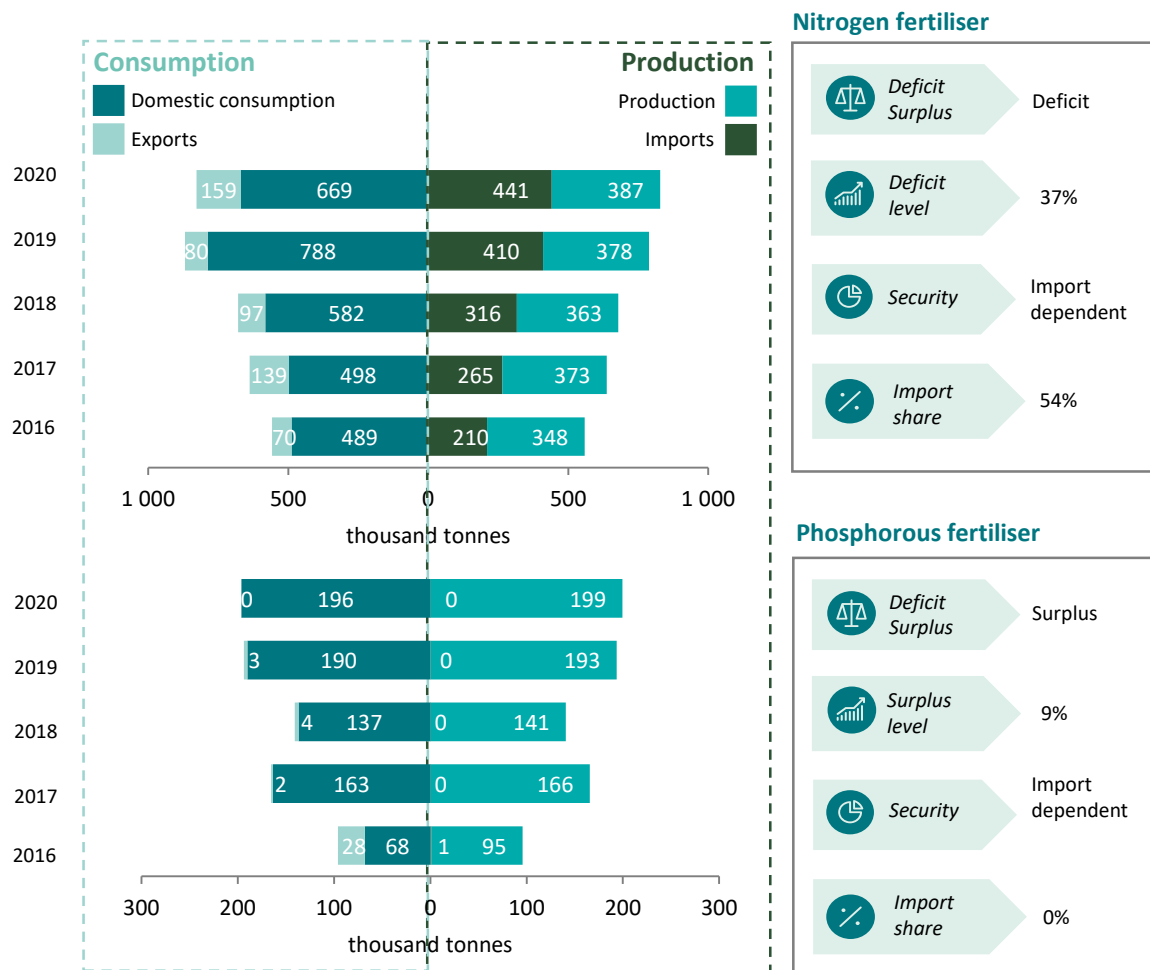
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# Nitrogen and phosphate fertilisers



- Nitrogen fertiliser production in Kazakhstan increased in 2016-2020, with CAGR of 2.7%. In 2020, Kazakhstan **was dependent** on foreign nitrogen fertiliser supplies, as available Kazakhstan capacity was unable to meet domestic demand.
- Given the current domestic production specialisation and in the event of the introduction of state policy aimed at rationalising the import of goods and services by stimulating domestic producers of similar goods, and creating new production enterprises in the country, potential nitrogen fertiliser import substitution is comparable with imports. The niche is attractive for investors.
- Mangistau Oblast, which is home to the main sector enterprise JSC KazAzot, is responsible for over 89% of nitrogen fertiliser production.

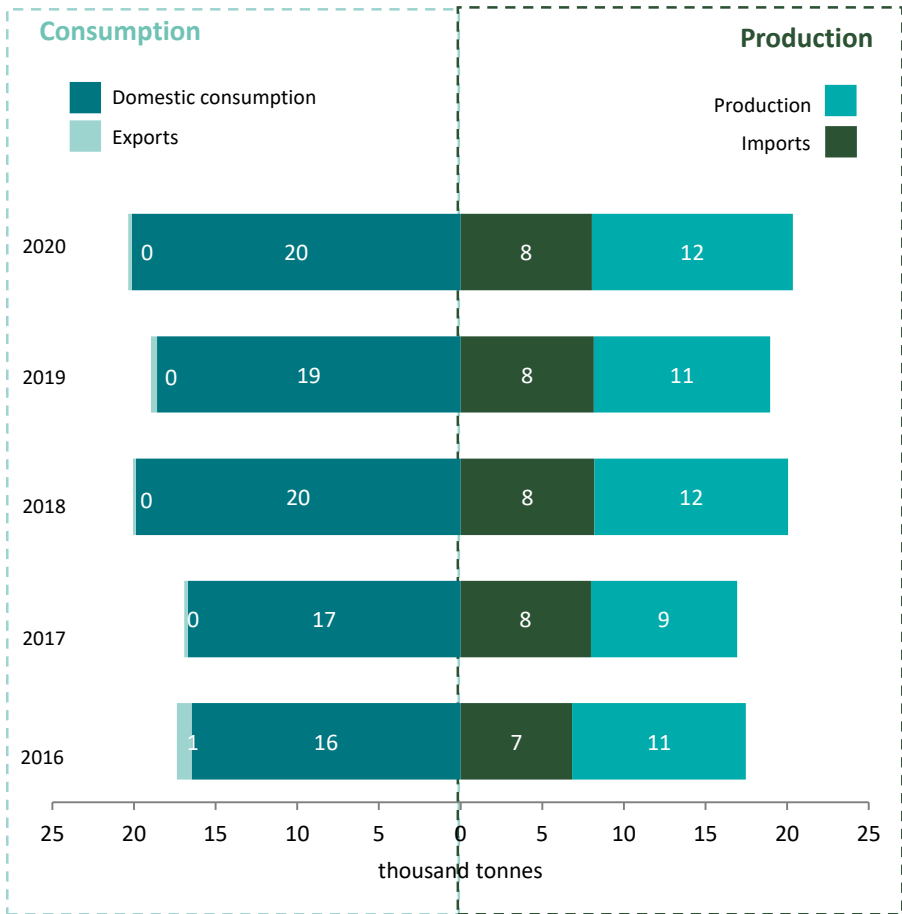
- Phosphate fertiliser production in Kazakhstan is in surplus as production meets domestic demand in full.
- Given the current domestic production specialisation and in the event of the introduction of state policy aimed at rationalising the import of goods and services by stimulating domestic producers of similar goods, and creating new production enterprises in the country, potential phosphate fertiliser import substitution is comparable with imports and is insignificant. The niche is less attractive for investors.
- Production has good **export potential**. Nearly 95% of phosphate fertiliser is produced in Dzhambul Oblast by Kazphosphat LLP.

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# Carbon dioxide in Kazakhstan



Carbon dioxide in Kazakhstan, thousand tonnes



- Carbon dioxide production in Kazakhstan increased 14% in 2020, while CAGR was 4% in 2016-2020. Nevertheless, Kazakhstan is dependent on foreign carbon dioxide supplies as available Kazakhstan capacity does not meet domestic demand.
- Given the current domestic production specialisation and in the event of the introduction of state policy aimed at rationalising the import of goods and services by stimulating domestic producers of similar goods, and creating new production enterprises in the country, potential carbon dioxide import substitution is comparable with imports and is significant. The niche is attractive for investors.

## Sector characteristics



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# Export prices in Kazakhstan



Inorganic chemical prices are not regulated by the State. The key pricing factor is the cost of raw materials (gas, sulphur and others)

## Prices for inorganic acid and inorganic non-metal oxygen compounds, USD/kg

Product	Price, USD/kg
Barium oxide and boracic acid	1.3
Diphosphorous pentoxide, phosphoric acid and polyphosphoric acid	0.7
Nitric acid and nitrating acid	0.6
Hydrogen chloride (hydrochloric acid); chlorosulphonic acid	0.2
Non-metal acid and compounds with oxygen	0.1
Sulphuric acid and oleum	0.01

## Prices for salts and peroxide salts, inorganic acid and metals, USD/kg

Product	Price, USD/kg
Inorganic acid salts or peroxy acid	4.1
Borates and peroxyborates (perborates)	3.6
Cyanide, cyanide oxides and complex cyanide	2.5
Chlorates and perchlorates, bromates and perbromates, iodates and periodates	2.3
Nitrites and nitrates	1.6
Oxometallic salts or peroxometallic acids	1.4
Sulphites and thiosulphates	1.0
Sulphates, alum and peroxyulphates (persulphates)	0.9
Silicates, technical alkaline metal silicates	0.7
Hypochlorites, technical calcium hypochlorite, chlorites; hypobromites	0.7
Phosphinates (hypophosphites), phosphonates (phosphites) and phosphates, and polyphosphates	0.6
Chlorides, chloride oxides and chloride hydroxides, bromides and bromide oxides, iodides and iodide oxides	0.6
Sulphides; semi-sulphides	0.5
Fluorides, fluorosilicates, fluoroaluminates and other complex fluoride salts	0.4
Carbonates, peroxycarbonates (percarbonates), technical ammonium carbonate containing ammonium carbamat	0.3

Source: TradeMap

## Inorganic bases and metal oxides, hydroxides and peroxides, USD/kg

Product	Price, USD/kg
Hydrazine and hydroxylamine and their inorganic salts, various inorganic alkali; various metal oxides, hydroxides and peroxides	9.0
Zinc oxides and zinc peroxides	3.4
Lead oxides and lead oxides (red and orange)	2.6
Chromic oxides and hydroxides	1.9
Iron oxides and hydroxides and mineral dyes	1.3
Manganese oxides	1.3
Sodium hydroxide (caustic soda), potassium hydroxide (caustic potash), sodium or potassium peroxides	0.4
Ammonia, anhydrous or in aqueous solution	0.3
Artificial corundum, ammonium oxide and aluminium hydroxide	0.3

## Prices for various inorganic chemicals, USD/kg

Product	Price, USD/kg
Chemical radioactive elements and radioactive isotopes and their compounds, mixtures and residue containing these products	63.5
Rare metal, yttrium or scandium compounds, or mixtures of these metals	5.1
Hydrogen peroxide	1.2
carbides	0.8
Phosphides, except for ferrophosphorus, various inorganic compounds, liquid air and condensed air; amalgams, except for precious metal amalgams	0.7
Precious metals in colloidal state, precious metal compounds and amalgams of precious metals	0.6

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# Wholesale prices in Kazakhstan



## Inorganic acid and non-metal compounds with inorganic oxygen

Product	Price, USD/kg
Orthophosphoric acid 85%	2.0
sulphuric acid	1.2
Nitric acid	1.4
Hydrochloric acid	0.3

## Inorganic acid and metal salts and peroxides

Product	Price, USD/kg
Potassium iodate	64.0
Nickel chloride hexachloride	8.0
Cyanides, cyanide oxides and complex cyanides	4.1
Potassium sulphate (sulphuric potassium)	1.6
Calcium hypochlorite 45%	1.6
Nitrite salt	1.2
Sodium sulphite	1.0
Ammoniate superphosphate (phosphorous fertiliser)	1.0
Dibutylsulphide	1.0
Technical sodium tripolyphosphate	0.8
Sodium silicate	0.3
Ammonium bifluoride (sour fluoride ammonium)	0.1
ammonium sulphate (nitrogen fertiliser)	0.1
Calcium carbonate	0.1
Borax decahydrate	0.1

Source: Satu.kz

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## Inorganic alkali metal, oxides, hydroxides and peroxides

Product	Price, USD/kg
Lead oxides	35.8
Hydrazine hydrate 64%	11.6
Carbon dioxide	5.4
Zinc oxide	3.9
Granulated manganese dioxide	3.5
Iron oxide (iron oxide pigment Red 130)	1.9
Chromic oxides	1.9
Barium hydroxide	1.9
Aluminium hydroxide	1.6
Caustic soda (flaked) 98%	0.8
Aqueous ammonia	0.7
Cobalt oxides	0.1

## Other substances

Product	Price, USD/kg
Tungsten carbide	87.1
Silicium nitride	13.9
Medical ethanol 90%	5.3

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# Wholesale prices in Russia



## Inorganic acid and non-metal compounds with inorganic oxygen

Product	Price, USD/kg
Phosphoric acid 85%	2.3
Boric anhydride	1.8
Technical, synthetic hydrochloric acid	0.4
Nitric acid	0.4
Sulphuric acid	0.2

## Inorganic metal alkalis, oxides, hydroxides and peroxides

Product	Price, USD/kg
Zinc oxide	37.6
Cobalt oxide	30.1
Manganese oxide	20.7
Titanium dioxide	7.5
Chromic oxide	6.3
Lead oxide	4.3
Hydrazine hydrate	4.0
Manganese hydroxide	2.2
Aluminium hydroxide	1.2
Caustic soda	1.1
Carbon dioxide	0.4
Iron oxide	0.1
Ammonia water	0.1

## Inorganic alkali metal, oxides, hydroxides and peroxides

Product	Price, USD/kg
Calcium fluoride	4.0
Copper sulphate	3.7
Potassium sulphate	3.2
Bisuperphosphate (phosphorous fertiliser)	2.6
Sodium dithionite	2.6
Sodium hypophosphate	2.3
Zinc borate	2.2
Lead cyanide	1.4
Rubidium chlorate	1.4
Sodium thiosulphate	1.1
Calcium nitrate	0.7
Sodium sulphide (sodium sulphide)	0.7
Sodium silicate	0.3
Ammonium nitrate (nitrogen fertiliser)	0.3
Calcium hypochlorite	0.1
Calcium carbonate	0.03
Methylene chloride	0.01

## Other substances

Product	Price, USD/kg
Sodium hydride, 57-63%	430.3
Zirconium hydride	86.1
Titanium hydride (2-5 microns)	71.7
Zinc phosphide 80%	28.7
Calcium carbide	1.4
Spirit 70%	1.0

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# Wholesale prices in China



## Inorganic acid and non-metal compounds with inorganic oxygen

Product	Price, USD/kg
Phthalic anhydride	1.1
Phosphoric acid 85%	0.9
Hydrochloric acid 36%	0.8
Sulphuric acid	0.5
Nitric acid	0.4

## Inorganic metal alkalis, oxides, hydroxides and peroxides

Product	Price, USD/kg
Cobalt oxide	43.3
Chromic oxide	37.1
Manganese oxide	20.6
Chromic hydroxide	17.6
Lead oxide	4.1
Zinc oxide	3.1
Carbon dioxide	4.1
Titanium dioxide	2.2
Hydrazine hydrate	2.1
Iron oxide	1.2
Aluminium hydroxide	0.9
Ammonia water	0.4
Caustic soda	0.4
Sodium hydroxide	0.3

Source: Alibaba

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## Inorganic alkali metal, oxides, hydroxides and peroxides

Product	Price, USD/kg
2-chlorbenzil cyanide	56.7
Potassium fluoride	3.9
Lead nitrate	2.3
Zinc borate	2.1
Calcium hypochlorite	1.4
Calcium chlorate	1.3
Phosphorous fertiliser	0.9
Potassium sulphate	0.8
Sodium dithionite	0.8
Methylene chloride	0.7
Iron sulphate	0.7
Sodium sulphide	0.5
Nitrogen fertilisers	0.4
Sodium silicate	0.3
Calcium carbonate	0.2

## Other substances

Product	Price, USD/kg
Zirconium hydride	154.6
Titanium hydride	71.1
Tungsten carbide	51.5
Sodium dichloroisocyanurate dehydrate	12.4
Ethanol	3.8
Zinc phosphide 80%	3.6

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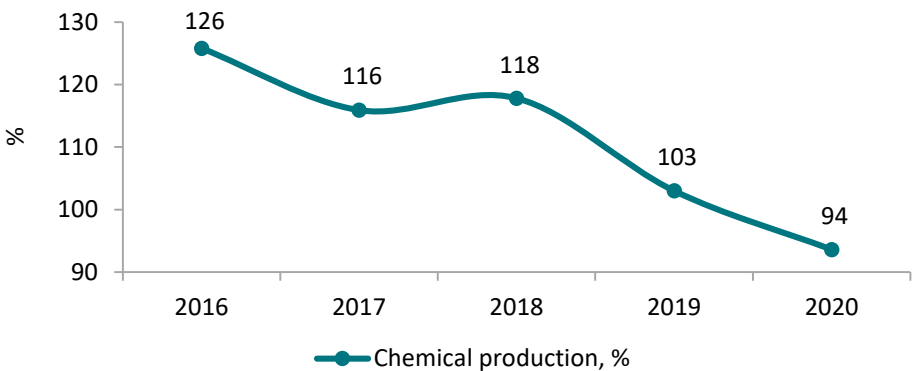
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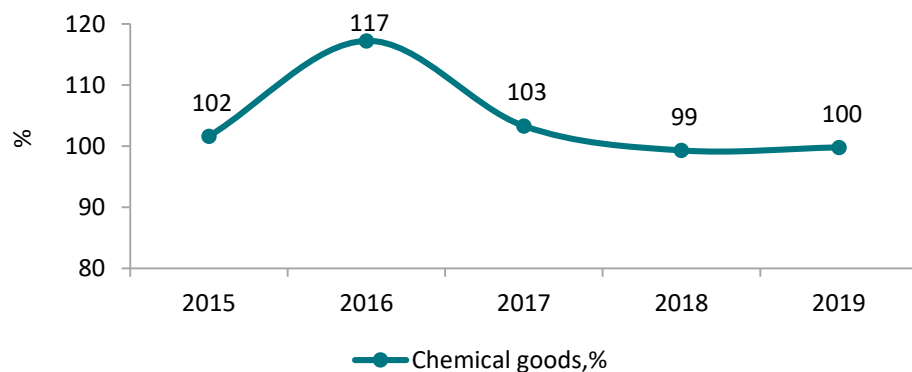
# Import and production pricing indices



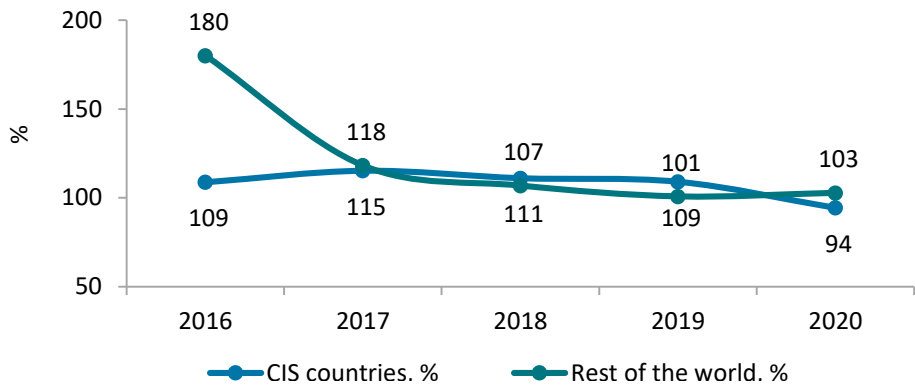
Chemical industry production enterprise price index, %



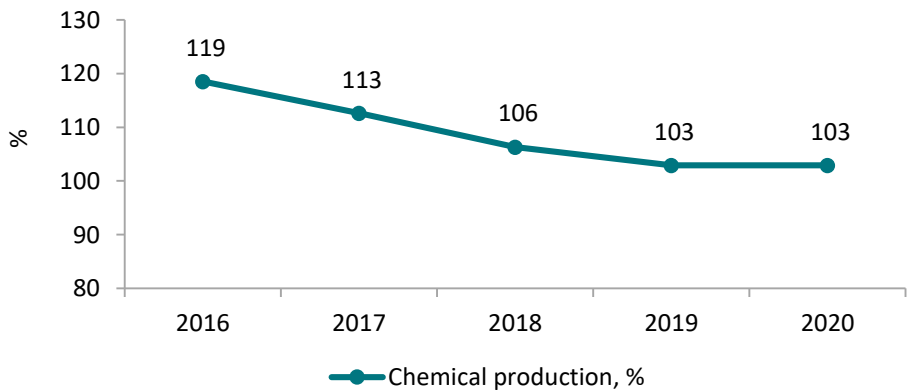
Chemical industry product wholesale price index, %



Inorganic chemical imports price index, %



Price index for industrial engineering products purchased by chemical industry producers, %



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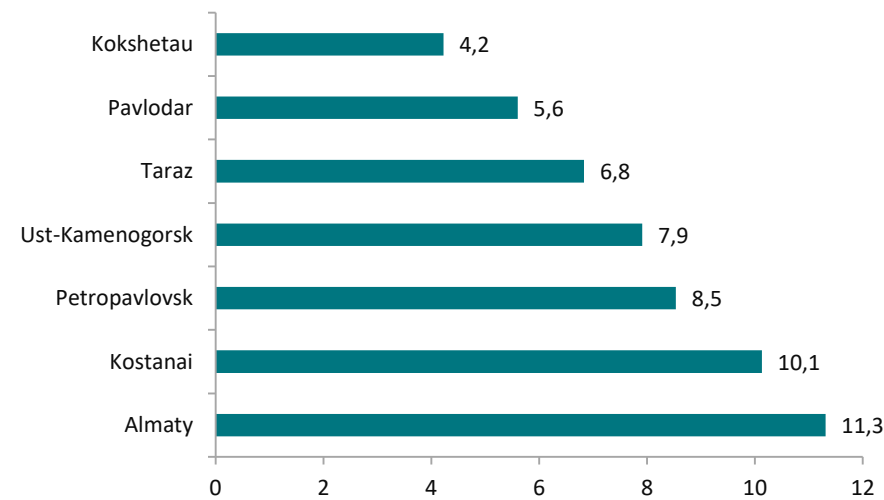
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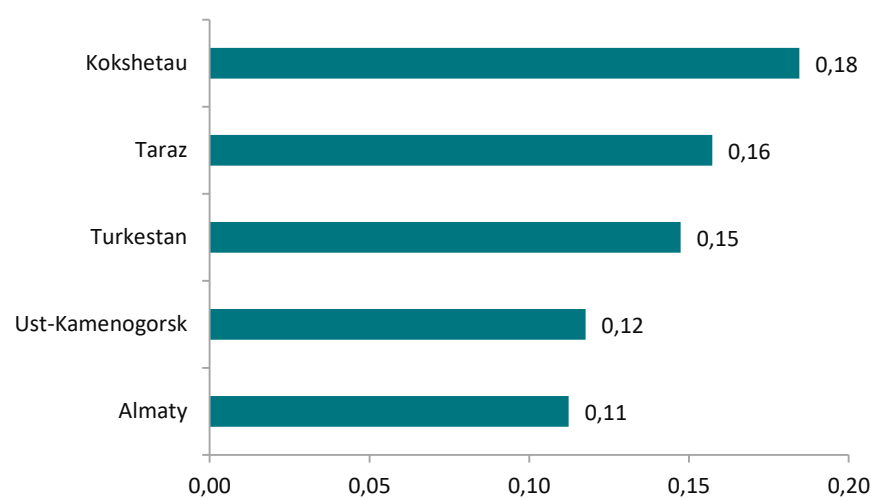
# State regulation of utilities tariffs



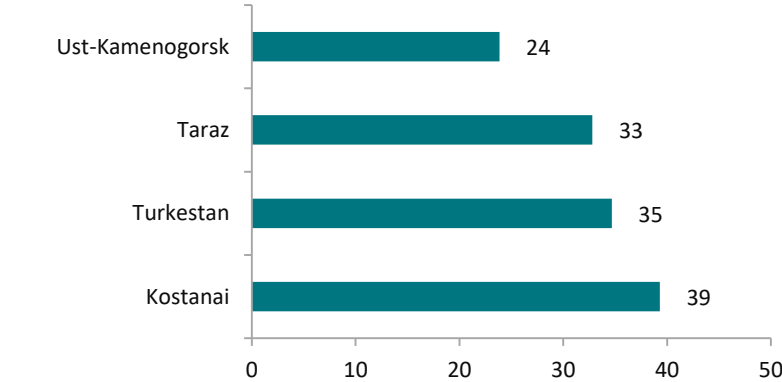
Thermal power price across Kazakhstan in June 2021, USD/Gcal



Cold water cost across Kazakhstan in June 2021, USD/Gcal



Electricity price across Kazakhstan in June 202, USD/1,000 KWH



- Kazakhstan operates a state tariff policy for natural monopolies, and has also introduced state price regulation and controls for compliance with pricing procedures and obligations of entities on socially significant markets. Communal services are subject to tariff regulation.
- As at June 2021, the average price per Gcal of thermal power in Kazakhstan was 7.9 USD.
- In June 2021, the average price per 1,000 KWH of electricity was 29.8 USD, while the price per m<sup>3</sup> of cold water was 0.2 USD.

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# Sector support Поддержка отрасли в рамках Предпринимательского кодекса



Entities investing or planning to invest in priority activities according to Government Resolution No. 13 dated 14 January 2016 may receive state support stipulated by the Kazakhstan Entrepreneurial Code and state programmes.

## State support stipulated by the Kazakhstan Entrepreneurial Code No. 375–V dated 29 October 2015

The Entrepreneurial Code stipulates the following investment preferences depending on investment project classification.

### Investment project:

- Customs duty exemptions
- State grants
- Import VAT exemptions

### Priority investment project (create new production)

- Customs duty exemptions
- State grants
- Tax exemptions
- Investment subsidies

### Priority investment project (expansion of existing production)

- Customs duty exemptions
- State grants
- CIT exemptions

### Special investment project

- Customs duty exemptions
- Import VAT exemptions

## Priority activities within the framework of the Entrepreneurial Code

Group name	Class name
Basic inorganic chemical production	Chemical element production (except for industrial gases and base metals)
	Organic acid production except for nitric acid
	Alkali, leachate and organic substances production except for ammonia
	Organic mixture production
	Iron pyrite baking
	Distilled water production
Fertiliser and nitrogen mixture production	Enrichment of uranium and thorium ore
	Fertiliser production: nitrogen or nitrogen-containing, phosphorous or potassium fertilisers; calurea, natural phosphate from crude oil and natural potassium salts from crude oil
	Nitrogen-containing products: nitric acid and nitrogen sulphate, ammonia, ammonium chloride, ammonium carbonate and ammonium carbanate mixtures, potassium nitrite and nitrate
	Turf production in bricks
	Turf production in bricks with added sand, clay and minerals

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# Sector support within the framework of the “Saving Simple Things” Programme



- The goal of the “Saving Simple Things” Programme is to saturate the domestic market with domestic goods, raise the competitiveness of the manufacturing industry, and, above all, release a wide range of consumer goods.
- The credit facility is made available to business projects implemented in priority sectors of the economy in accordance with an approved list of goods for credit financing of priority projects, which includes the food industry. Within the Programme framework, the state subsidises bank loan interest rates.
- The Project operator is Damu. According to the operator, 171 projects were subsidised for 169 mln USD in 2019 (subsidies paid amounted to 3 mln USD). In 2020, 169 projects were subsidised for 230 mln USD (subsidies paid amounted to 7 mln USD).
- According to the Atameken National Chamber of Entrepreneurs, approved projects include the production of consumer goods such as furniture (kitchen furniture, couches, garden chairs, beds, drawers and others); clothing (jackets, suits, blouses, shoes, overalls, etc.); food products (pasta, bakery products, meat and sausages, dairy products, confectionery, etc.); chemicals (fertilizers) and building materials (bricks, cement), as well as service facilities (construction of kindergartens, preschool institutions, sanatoriums, hotels, rehabilitation centres and recreational compounds) and others.

## Programme conditions

Eligible entities	private businesses (small, medium-sized and large businesses)
Interest rate	15% per annum
Subsidy amount	up to 9% of the nominal interest rate
Project purpose	investments and replenishment of working capital; replenishment of working capital is allowed on a renewable basis
Maximum amount per borrower	unlimited
Subsidy period	for investment – 10 years, without further extension
	to replenish working capital – 3 years, without further extension
Loan refinancing	not stipulated
Current loans	loans issued by banks after government resolution No. 820 dated 11 December 2018 entered into force are allowed

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# Sector support from the SIIDP 2020-2025 Programme



- The goal of this Programme is to develop Kazakhstan’s competitive manufacturing industry in domestic and foreign markets (Government Resolution No. 1050 dated 31 December 2019). During the Programme implementation period, the major focus is on the realisation of key export-oriented projects.
- Baiterek National Managing Holding is one of the main operators implementing Programme objectives such as increasing production volumes and expanding the range of processed goods in demand in domestic and foreign markets, as well as promoting technological development and digitalisation of manufacturing industries.
- Specifically, Baiterek continues as the operator of all repayable financial support measures through subsidiaries, and its powers include raising funds from external and internal debt and capital markets to provide preferential loans to manufacturers.

### Project financing and lease financing through the SIIDP Programme

- 1) Lending through financial institutions will continue with interbank lending schemes through the Development Bank of Kazakhstan and Damu Entrepreneurship Development Fund.
- 2) Development Bank of Kazakhstan provides long-term financing by mixing 50/50 budget funds and commercial funds for a period of 7-10 years, with end borrower rates of up to 11%, with company participation in at least 20% of the project amount.
- 3) JSC BRK-Leasing provides long-term lease financing to update equipment to industrial and innovation entities selling and/or planning to realise projects in priority sectors.
- 4) Interest rates on loans provided by financial institutions are subsidised, and loan liabilities are guaranteed (operator – Damu Fund) with nominal interest of up to 15% per annum within the framework of Government Resolution No. 820 dated 11 December 2018.

### Programme financing, million USD

Index	2020	2021	2022	2023	2024	2025
National budget	353	513	257	257	242	239
<b>Total</b>	<b>353</b>	<b>513</b>	<b>257</b>	<b>257</b>	<b>242</b>	<b>239</b>

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# Sector support from the “Business Road Map 2025” Programme



- The Business Roadmap 2025 Program for business support and development aims to meet the goal of the public message of the President of Kazakhstan "Kazakhstan-2050 Strategy: a new political course of the established state" dated 14 December 2012. The program implements instruments of state support in the form of subsidies for part of the interest rate on loans / financial leasing agreements and loan guarantee agreements.
- The Programme provides for state grants and training for entrepreneurs aimed at supporting and developing small and medium-sized businesses in Kazakhstan.
- The objectives of the Programme are to ensure the sustainable and balanced growth of regional entrepreneurship, and maintain existing and create new permanent jobs.
- The Programme incorporates three directions:
  - support for new entrepreneur business initiatives in monotowns, small towns and rural settlements
  - industry support for entrepreneurs operating in priority sectors of the economy
  - non-financial measures to support entrepreneurship
- The Programme priority sector list includes crop production.
- 1,018 mln USD has been allocated to implement the Programme until 2025.

Programme conditions	
Eligible entities	Entrepreneurs/entities involved in industrial and innovative activities implementing and/or planning to implement their own projects in priority sectors of the economy
Loan rate	up to 14% per annum
Purpose of the projects	Investments, replenishment of working capital, refinancing; replenishment of working capital is allowed on a renewable basis
Guarantee amount	up to 2.4 mln USD and up to 50% of the guarantee amount
Loan amount	up to 16.9 mln USD
Subsidy period	up to 5 years

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# State stimulation measures from QazIndustry



QazIndustry is the single coordinator providing assistance to industrial enterprises at all stages - from technological solutions and new production lines to certification, export and the implementation of digital technology.

The entity provides state financial support free of charge for Kazakhstan producers. These include innovative grants to commercialise technology, upgrade technology used by enterprises and industries, and reimburse certain types of costs to enterprises aimed at increasing work performance and promoting exports.

## Business support is provided by:

Reimbursing part of the costs of entities involved in industrial and innovative activities to promote domestic processed goods on foreign markets



Reimbursing part of the costs of entities involved in industrial and innovative activities to promote domestic processed goods domestically



Reimbursing part of the costs of entities involved in industrial and innovative activities to increase work performance and develop regional clusters



## Types of reimbursable costs on external markets

- overseas advertising of goods
- participation in overseas exhibitions, fairs and festivals
- publishing catalogues for distribution overseas (development and translation)
- maintaining representative offices, retail space and warehouses overseas
- registering trademarks (brands) overseas
- certifying goods overseas
- delivering goods by rail, road, air and sea; organising transportation

## Reimbursable costs on external markets

- no more than 13,000 times the minimum calculation index per entity
- historical reimbursement period is 32 months prior to the date of application

40% Large businesses

50% Medium-sized businesses

60% Small businesses

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# State stimulation measures from KazakhExport



KazakhExport is an export insurance company that provides insurance support for exporters of non-primary goods and services. The main mission of KazakhExport is to support the growth of exports of non-primary goods, works, services in priority sectors of the economy and the formation of the practice of financial, insurance and non-financial support of Kazakhstani enterprises.

Advantages of the organization – possibility to export on terms of deferred payment, reduction of losses in case of an insured event of political nature, reduction of non-payment risks, protection of Kazakhstan investments abroad from political risks, expansion of opportunities and improvement of credit terms, effective instrument for "safe entry" strategy to new markets.

## Business support tools from KazakhExport:

insurance of exporter's credit, exporter's short-term accounts receivable;  
insurance of exporters' losses related to performance of works/provision of services

providing insurance protection to banks against the risk of exporters' failure to perform their obligations under foreign currency forward contracts, as well as against the risk of non-payment by a Kazakhstani company for its obligations under the Guarantee.

financing of foreign companies for the purchase of Kazakhstani goods through Kazakh second-tier banks within the framework of the letter of credit form of settlements

## Types of reimbursable insured events:

- Non-payment by a foreign counterparty (Importer) under an export contract;
- Failure of the Importer or Exporter to fulfill its obligations to a financial institution;
- Exporter's failure to fulfill obligations under export contract and others.

## Reimbursable insurance payments:

- The amount - within the sum insured in the amount of the loss less the unconditional deductible and, depending on the terms of the contract, can range from 75% to 90%;
- KazakhExport makes the insurance payment within 30 days after the waiting period (120 days for commercial risks and 180 days for political risks).

pre-export financing of Kazakhstani exporters through Kazakhstani second-tier banks in order to replenish working capital and fulfill obligations under export contracts

obtaining insurance protection from the credit institution against the risk of non-payment by the importer of its obligations under the credit agreement.

compensation of the importer's advance payment, in case of non-fulfillment of the exporter's obligations under the contract;  
investment insurance, that is, compensation for losses of a Kazakhstani investor, in case of non-fulfillment by a foreign company of its obligations.

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# State stimulation measures from QazTrade



QazTrade is an organization that studies and identifies current issues of the nationwide trade system and participates in the implementation of the country's trade policy. The company also provides financial and consulting assistance to Kazakhstani enterprises to promote domestic goods in foreign markets.

Among the services of the organization – assistance in promoting domestic processed goods, services to foreign markets, consulting services to improve competitiveness and find potential export markets, as well as partial reimbursement to enterprises of certain types of costs aimed at improving productivity and export promotion.

## Business support tools from QazTrade:



Independent assessment of the export potential of enterprises and their goods



Consulting work to assist in finding a potential partner/buyer abroad



Analysis of the potential importer's market and conducting a marketing campaign to promote the product



Preparation of recommendations to improve the conduct of export activities



Formation of a package of necessary documents for export of goods and services



Analytical support for inquiries by countries, regions of Kazakhstan and industries



In-depth and comprehensive analysis of foreign industry and country markets



Study of trade barriers to enter foreign markets and development of proposals for their elimination

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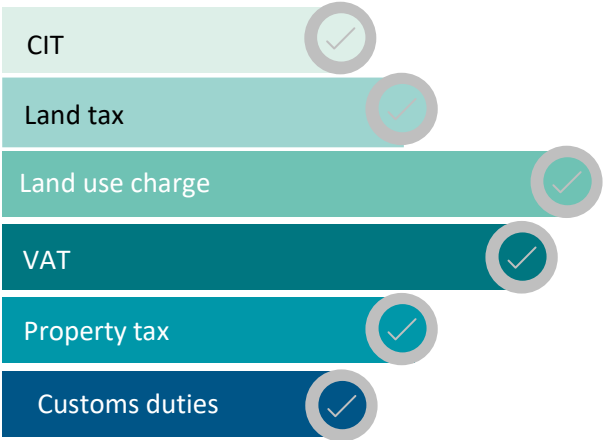




# Free economic zones



- A special economic zone (“SEZ”) is a part of Kazakhstan territory where special tax rules apply and infrastructure facilities are in place to perform priority activities.
- According to Minister of Investment and Development Order No. 142 dated 27 February 2018, agricultural and forestry machinery is included in a list of priority activities broken down into special economic zones. The list of priority activities includes the following SEZ:
  - Astana-New City;
  - National Industrial Petrochemical Technopark;
  - Ontustik;
  - Saryarka;
  - Khorgos – Eastern Gates;
  - Pavlodar;
  - Taraz Chemical Park.
- According to the Tax Code, SEZ members are exempt from:



The following are also provided:

- Land for 10 years
- Overseas nationals can be hired according to a simplified procedure

To receive tax concessions, SEZ members should meet all of the following simultaneously:

- 01 Be registered as a taxpayer with the tax authorities in the SEZ
- 02 Have no structural divisions outside of the SEZ
- 03 No less than 90% of its aggregate annual income should be generated from the sale of goods of own production/services (in the relevant priority areas for the given SEZ)

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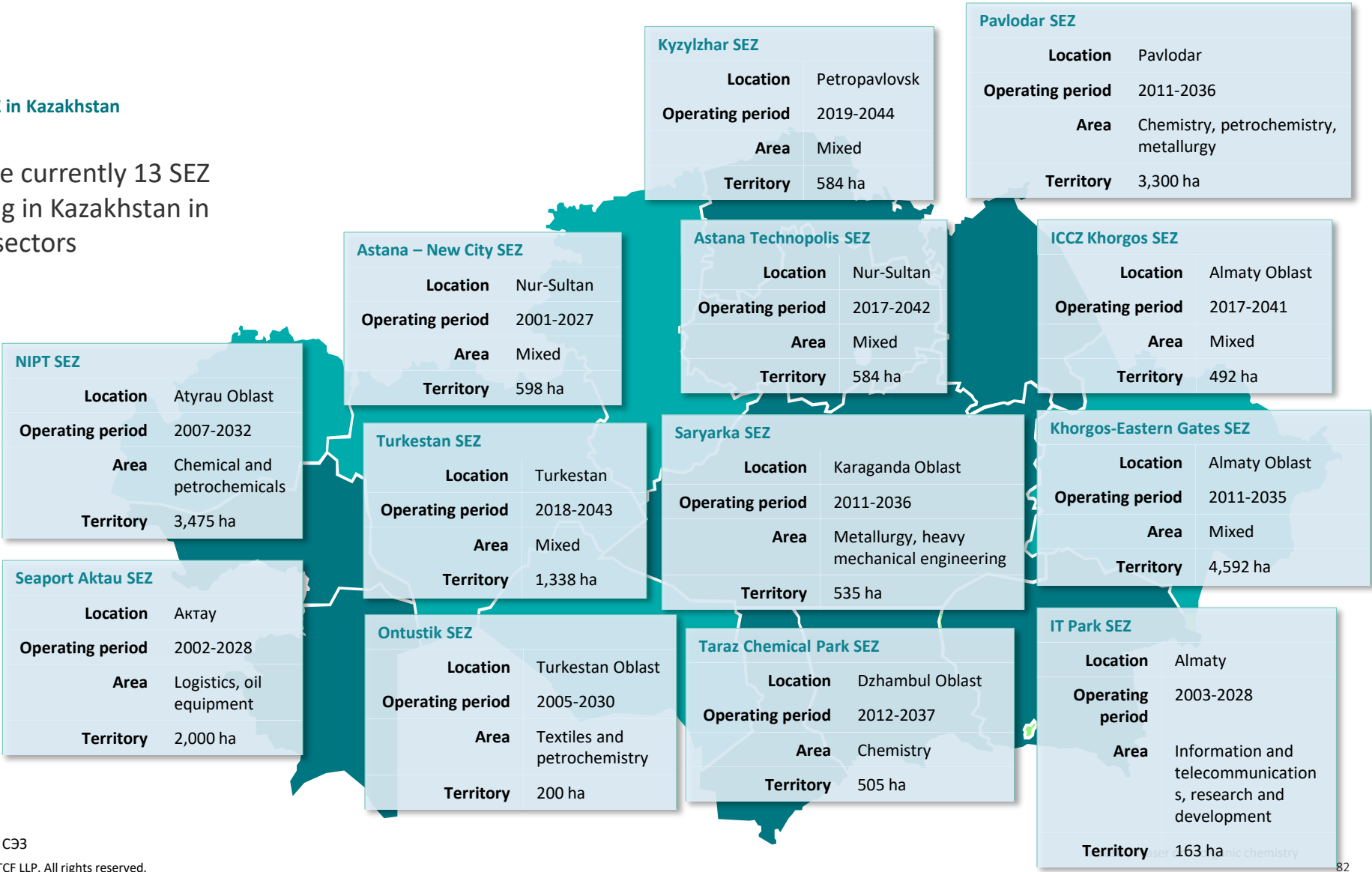


# Free economic zones



## Current SEZ in Kazakhstan

There are currently 13 SEZ operating in Kazakhstan in various sectors



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This slide shows current inorganic chemical market trends

## Ammonia



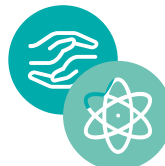
- There has been a growth in mineral fertiliser consumption across the world due to the growth in demand for ammonia, which is a key raw material in fertiliser production and also in many other agrochemicals. Ammonia is also a main component in explosives, whose use is growing in the mining sector due to an increase in mineral resource production. In 2020, the global ammonia market was worth 174 million tonnes, and is forecast to reach 197 million tonnes by 2026, with CAGR at 2.03% in 2021-2026.

## Titanium dioxide



- Titanium dioxide is used widely in the production of emulsion paint, corrosion resistant and decorative coatings, which are becoming more popular due to increased infrastructure investment in developing countries. Titanium dioxide also plays an important role in bioplastic production. Bioplastic production has increased due to growing ecological problems, also increasing demand for titanium dioxide. The global titanium dioxide market was valued at 17 billion USD in 2020. The market is expected to grow to 32.4 billion USD by 2028, while CAGR is expected to reach 8.4% between 2020 and 2028.

## Sodium hydroxide



- Increased global awareness of the importance of hand hygiene has led to an increase in demand for soap and detergent. This, in turn, has increased demand for caustic soda, which is the main production raw material. Furthermore, caustic soda is used to produce medicine and pharmaceutical products (for example, aspirin). In 2020, the sodium hydroxide market amounted to 34 billion USD. Market value is expected to reach 45 billion USD by 2026, while CAGR will amount to 4.6% in 2020-2026.

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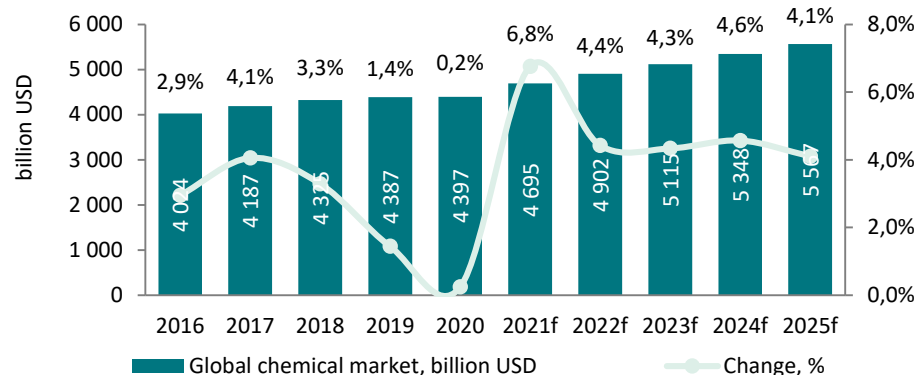
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# Global inorganic chemical market (1/3)

## Chemical products

Changes in the global chemical product market, billion USD



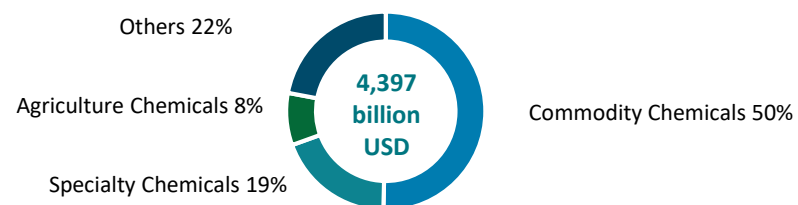
- In 2020, the global chemical product market was worth 4,398.9 billion USD, while CAGR between 2016 and 2020 was 2.3%.
- The insignificant growth of 0.2% in 2020 was partially caused by the COVID-related global slowdown in economic activity.
- The global chemical product market is forecast to be worth 5,567 billion USD by 2025, an increase of 26.6% from 2020. It is expected that market CAGR will be 4.8% in 2020-2025.
- The largest global chemical producers are BASF, Sinopec, ExxonMobil, DuPont and SABIC.



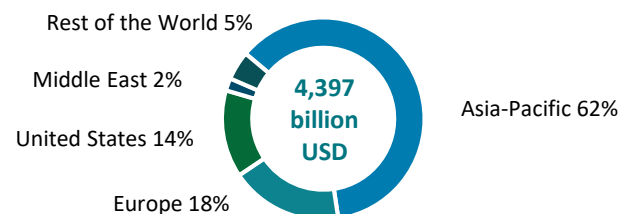
Source: MarketLine

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Structure of the global chemical product market in 2020 by segment, %



Structure of the global chemical product market in 2020 by region, %



- The global chemical product market consists of industrial (caustic soda, hydrogen peroxide and concentrated nitric acid), specialised (construction chemicals, paint, polymers and food additives), agricultural (pesticides, herbicides, fungicides, insecticides and fertilisers) and other chemical products (pharmaceutical chemical products).
- In 2020, industrial chemical products accounted for the greatest market share, reaching 2,207 billion USD (50.2% of total market value).
- In 2020, the Asia-Pacific Region became the largest chemical product market, accounting for 61.5% of it.

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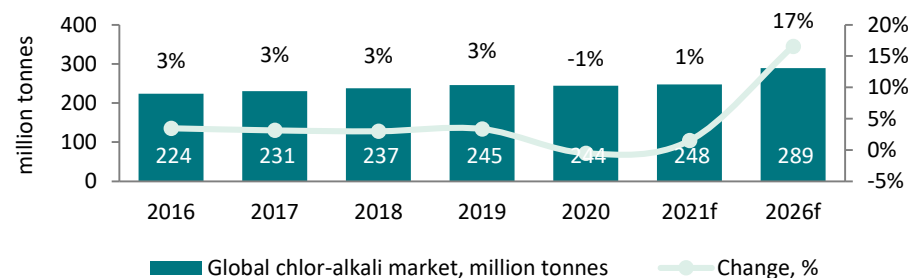
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# Global inorganic chemical market (2/3)

## Chloralkali products

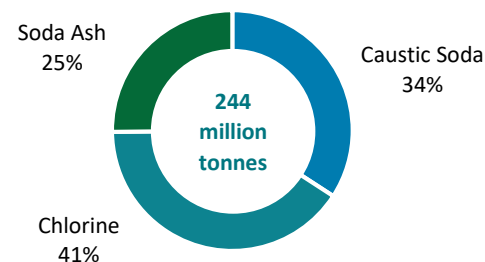
Changes in the global chloralkali product market, million tonnes



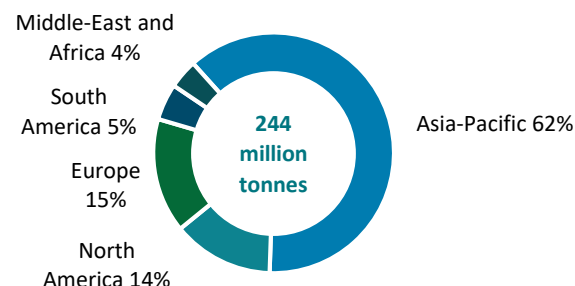
- In 2020, the global chloralkali product market amounted to 244 million tonnes, and is expected to reach 289 million tonnes by 2026, with CAGR in 2020-2026 at 3.11%.
- Chloralkali products are synthesised by electrolysing sodium chloride solutions. This is a major inorganic chemical segment that serves a wide range of sectors such as the plastic industry, motor vehicle sector, the construction industry and household chemical industry.
- The largest global chloralkali producers are the Olin Corporation, Westlake Chemical Corporation, Occidental Petroleum Corporation, Solvay and Ciner Resources Corporation.



Structure of the global chloralkali product market in 2020 by segment, %



Structure of the global chloralkali product market in 2020 by region, %



- In 2020, chlorine accounted for 41% (99 million tonnes) of the global chloralkali product market. The segment is expected to reach 120 million tonnes by 2026, while CAGR will be 3.51%.
- In 2020, the Asia-Pacific Region accounted for approximately 62% (152 million tonnes) of the total market. The expectation is that South America will record the highest CAGR of 3.76%. In 2020–2026, the market will increase from 12 million tonnes to 14.5 million tonnes.

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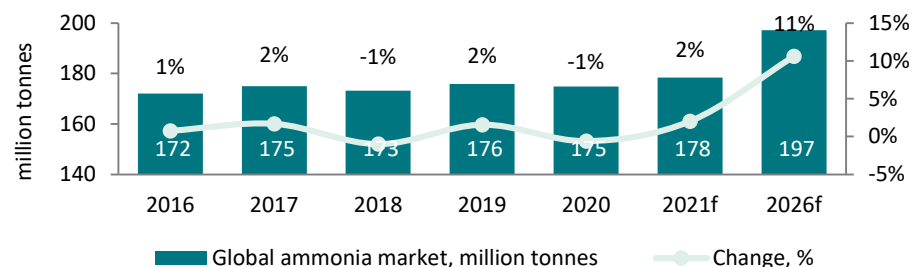
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# Global inorganic chemical market (3/3).

## Ammonia

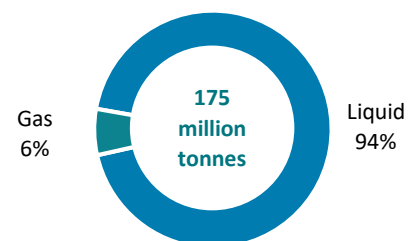
Changes in the global ammonia market, million tonnes



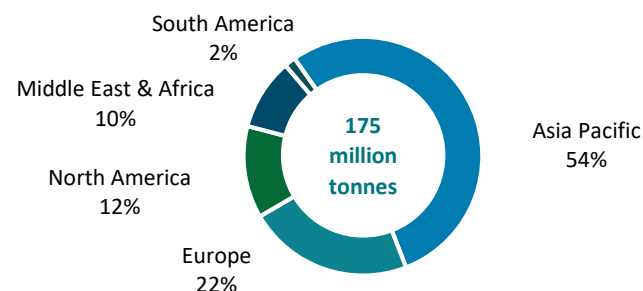
- The global ammonia market was worth 175 million tonnes in 2020, and is expected to reach 197 million tonnes by 2026, with CAGR at 2.03% in between 2020 and 2026.
- The main factors enabling growth in the global ammonia market are the substance's extensive use in the agricultural industry and increase in its use in explosive production.
- Global ammonia production leaders are CF Industries Holdings Inc., Nutrien Ltd, Group DF (OSTCHEM), Yara and OCI Nitrogen.



Structure of the global ammonia market in 2020 by segment, %



Structure of the global ammonia market in 2020 by region, %



- In 2020, liquid ammonia accounted for 93.72% (163 million tonnes) of the global market, and is expected to reach 185 million tonnes by 2026, with CAGR at 2.06% between 2020 and 2026.
- In 2020, the Asia-Pacific Region held a market share of 53.83% (94 million tonnes).
- However, the expectation is that the Middle East and African markets will grow quickest of all and reach 20 million tonnes by 2026 (from 17 million tonnes in 2020), with CAGR at 2.82%.

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# Major global chemical industry producers (1/2)



Company	Product	Overview
BASF	<p>BASF products by market segment:</p> <ul style="list-style-type: none"> <li>• general chemistry;</li> <li>• fine chemistry;</li> <li>• plastics;</li> <li>• functional polymers;</li> <li>• construction chemistry;</li> <li>• special chemicals;</li> <li>• tanning chemistry;</li> <li>• agricultural sector solutions;</li> <li>• dyes and paints;</li> <li>• agricultural chemistry.</li> </ul>	<ul style="list-style-type: none"> <li>• BASF is one of the largest chemical companies in the world.</li> <li>• It has operations in over 90 countries across the world.</li> <li>• It manages 6 Verbund sites (system in which chemical processes help better use power, ensure higher product yield and save resources) and 36,155 other production sites across the world.</li> </ul>
China Petroleum & Chemical Corp (Sinopec)	<p>The company's product portfolio includes:</p> <ul style="list-style-type: none"> <li>• oil;</li> <li>• natural gas;</li> <li>• gasoline;</li> <li>• kerosene;</li> <li>• basic chemical components;</li> <li>• monomers and polymers for synthetic fibres;</li> <li>• synthetic resin;</li> <li>• synthetic fibre;</li> <li>• synthetic rubber;</li> <li>• chemical fertiliser.</li> </ul>	<ul style="list-style-type: none"> <li>• China Petroleum &amp; Chemical Corp is one of the largest integrated energy and chemical companies in the world.</li> <li>• Its main activities are the exploration and development of oil and gas fields, oil and natural gas sales, oil refining, petroleum product sales, the production and sale of petrochemical products.</li> <li>• The company is based in China.</li> </ul>
DuPont de Nemours Inc. (DuPont)	<ul style="list-style-type: none"> <li>• The company supplies chemical substances and materials to the agricultural sector, material science and specialised goods.</li> <li>• The company has developed many unique polymers and other materials, including neoprene, nylon, Kevlar, mylar, Tyvek and others. It was also the developer and main producer of freons used in refrigerator production.</li> </ul>	<ul style="list-style-type: none"> <li>• DuPont de Nemours Inc (DuPont), previously known as DowDuPont Inc, is one of the largest chemical industry product supplier in the world.</li> <li>• DuPont de Nemours, Inc has a global presence. Production, processing, sales and scientific research capacity, as well as sales offices are located across the world. Product sales and services are mostly made through direct channels, distributors and independent retail sellers.</li> <li>• The DuPont headquarters are in Willmington, Delaware, USA.</li> </ul>

Source: MarketLine

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Industry teaser on inorganic chemistry

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# Major global chemical industry producers (2/2)



Company	Product	Overview
Exxon Mobil Corporation	<ul style="list-style-type: none"> <li>Exxon is involved in oil prospecting, as well as oil and gas production, and also produces chemical and petroleum products.</li> <li>It produces olefins, aromatic hydrocarbons, polyethylene, polyolefins, polypropylene, paraxylene, ethylene, polyolefin and others.</li> </ul>	<ul style="list-style-type: none"> <li>Exxon Mobil Corporation is a US company and one of the largest oil and chemical companies in the world.</li> <li>The company is organised into upstream and midstream (field development, oil production, transportation and wholesale trade), downstream (marketing, refining and retail sales) and chemical divisions.</li> <li>The company's headquarters is in Irving, Texas, USA.</li> </ul>
Saudi Basic Industries Corporation	<ul style="list-style-type: none"> <li>The company's chemical industry division produces basic building blocks for a number of modern chemicals, plastics and materials used in everyday life across the world, such as natural detergent spirit, linear alpha olefins, gases, oxospirit, functional monomers, aromatic compounds, olefins and gases, glycohol alcohol, ethanolamine, chloralkalis and oxygenates.</li> <li>The polymer production division is predominantly organised in the motor vehicle segment, polystyrene/light material and pipe segments, and produces polyethylene, polypropylene, metallocene polyethylene, synthetic rubber, polycarbonates, polystyrene, polybutylene terephthalate-polycarbonate polycarbonate, acrylonitrile styrene acrylate, polyvinylchloride, polycarbonate, acrylonitrile, styrene-butadiene and acrylonitrile.</li> </ul>	<ul style="list-style-type: none"> <li>Saudi Basic Industries Corporation is a Saudi Arabian transnational chemical company and the second largest public company in the Middle East and Saudi Arabia.</li> <li>It operates in the chemical industry, producing industrial polymers, fertiliser and metals.</li> <li>Company headquarters are in Riyadh, Saudi Arabia.</li> </ul>

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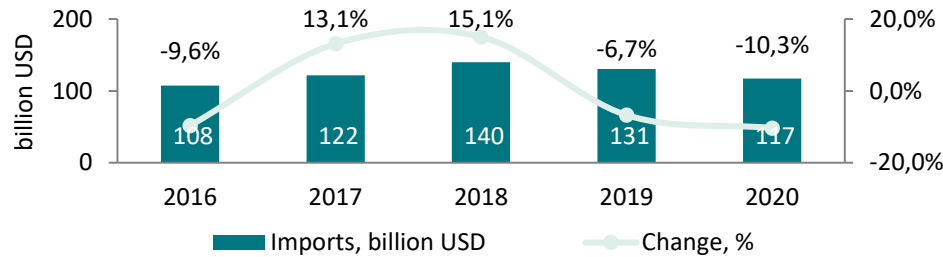
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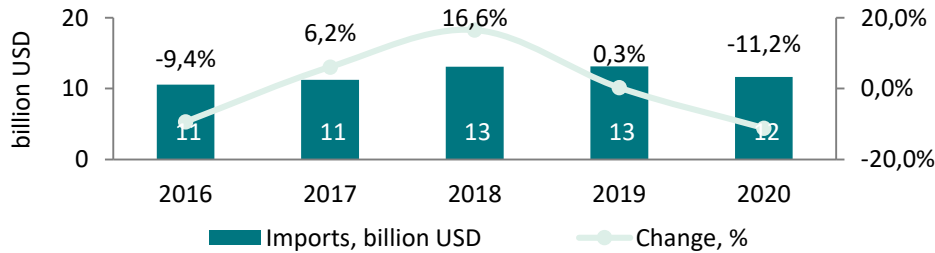
# Global imports



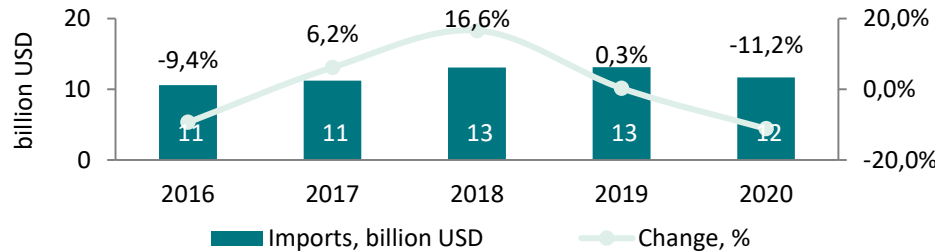
Changes in inorganic chemical substance; organic or inorganic precious metal, rare earth metal, radioactive element or isotope imports, billion USD



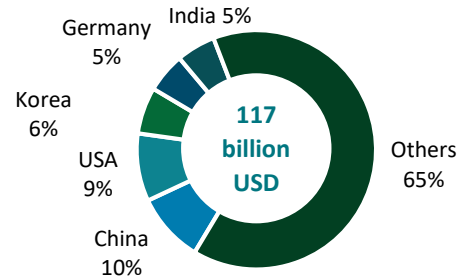
Changes in non-metal inorganic acid and inorganic acid compound imports, billion USD



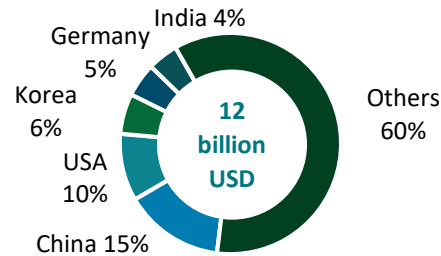
Changes in inorganic alkali and oxide, metal hydroxide and peroxide imports, billion USD



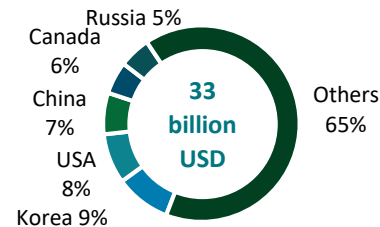
Structure of inorganic chemical substance; organic or inorganic precious metal, rare earth metal, radioactive element or isotope imports, billion USD



Structure of non-metal inorganic acid and inorganic acid compound imports, billion USD



Structure of inorganic alkali and oxide, metal hydroxide and peroxide imports, billion USD



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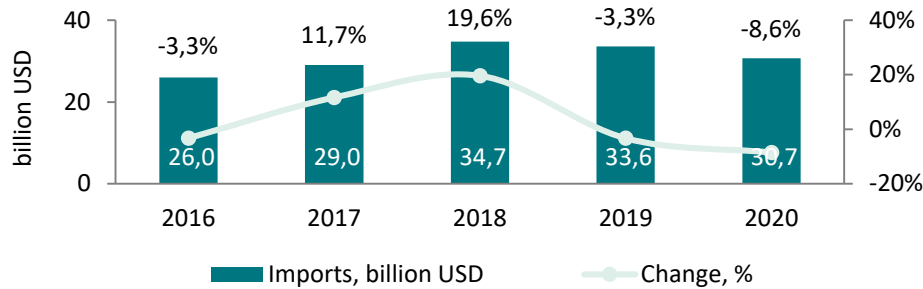
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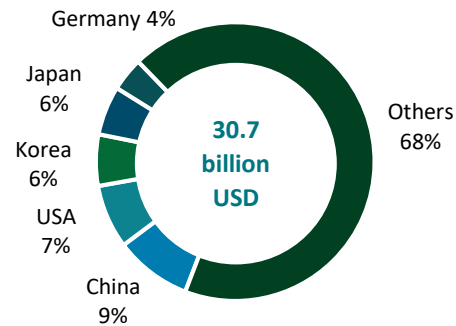
# Global imports



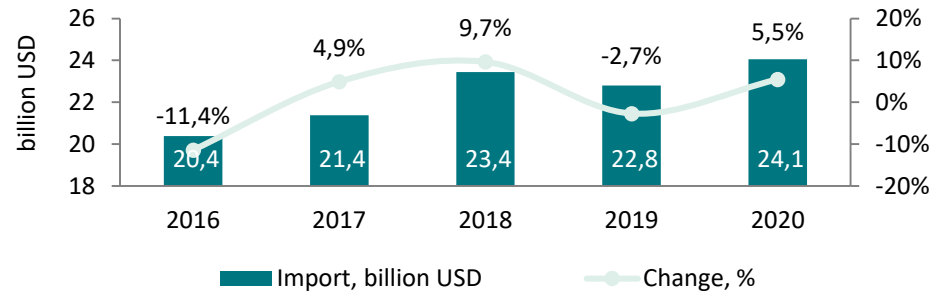
Changes in salt and salt peroxide, inorganic acid and metal imports, billion USD



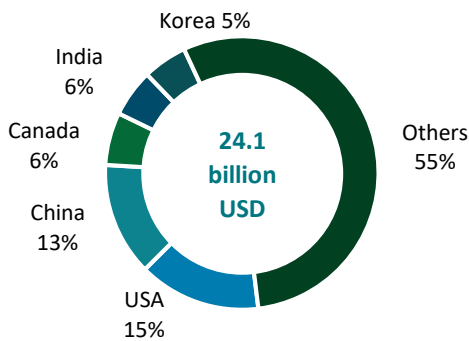
Structure of salt and salt peroxide, inorganic acid and metal imports, billion USD



Changes in various inorganic chemical imports, billion USD



Structure of various inorganic chemical imports, billion USD



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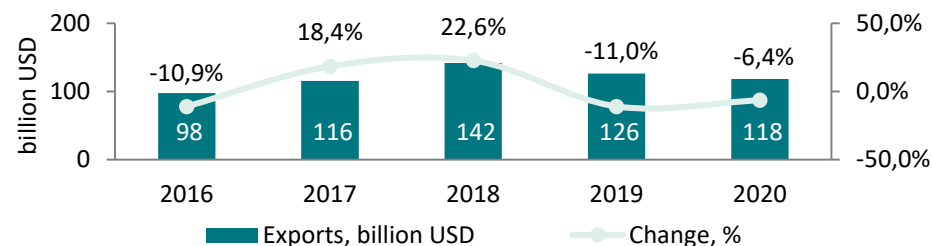
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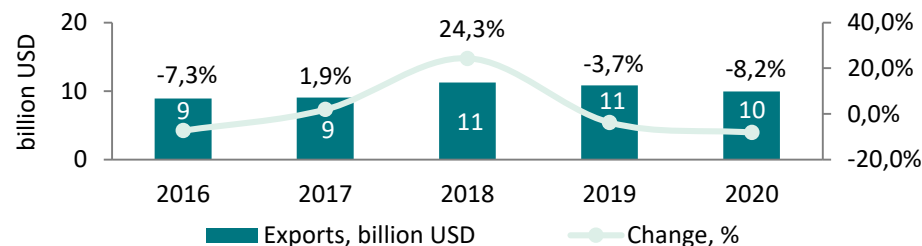
# Global exports



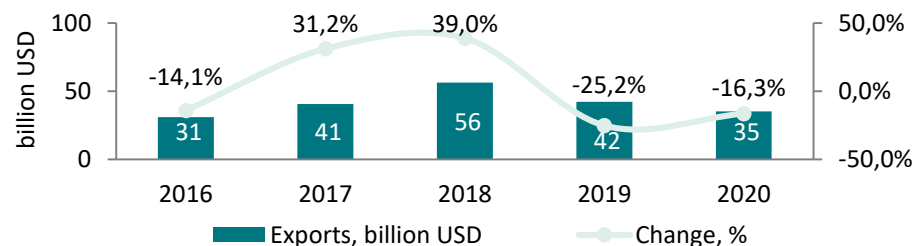
Changes in inorganic chemical substance; organic or inorganic precious metal, rare earth metal, radioactive element or isotope exports, billion USD



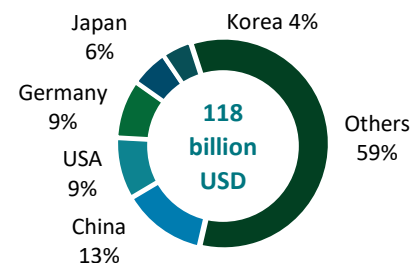
Changes in non-metal inorganic acid and inorganic acid compound exports, billion USD



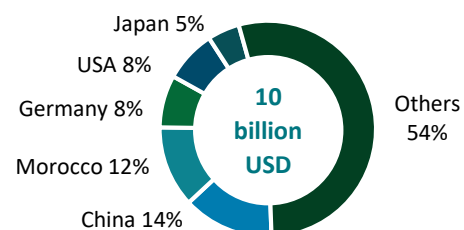
Changes in inorganic alkali and oxide, metal hydroxide and peroxide exports, billion USD



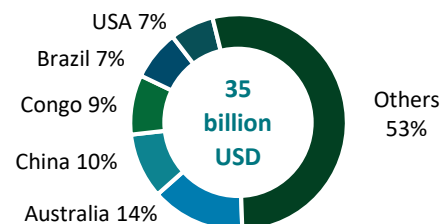
Structure of inorganic chemical substance; organic or inorganic precious metal, rare earth metal, radioactive element or isotope exports, billion USD



Structure of non-metal inorganic acid and inorganic acid compound exports, billion USD



Structure of inorganic alkali and oxide, metal hydroxide and peroxide exports, billion USD



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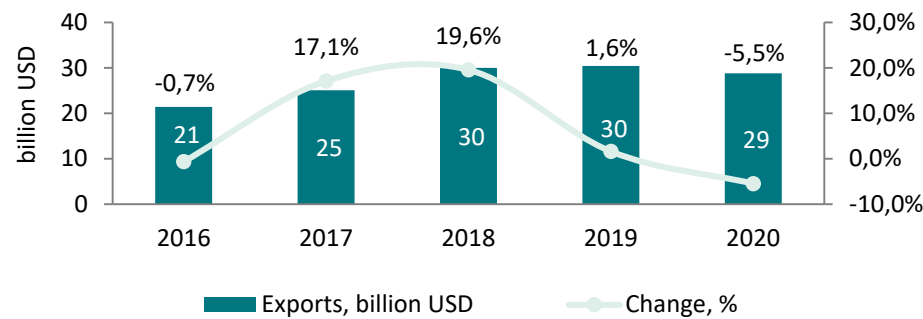
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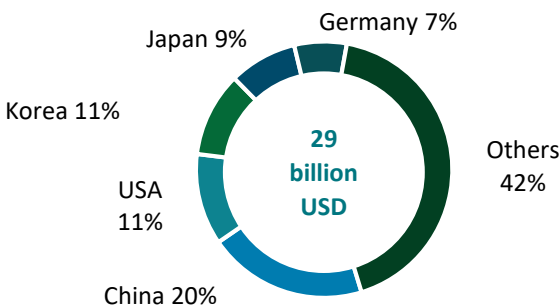
# Global exports



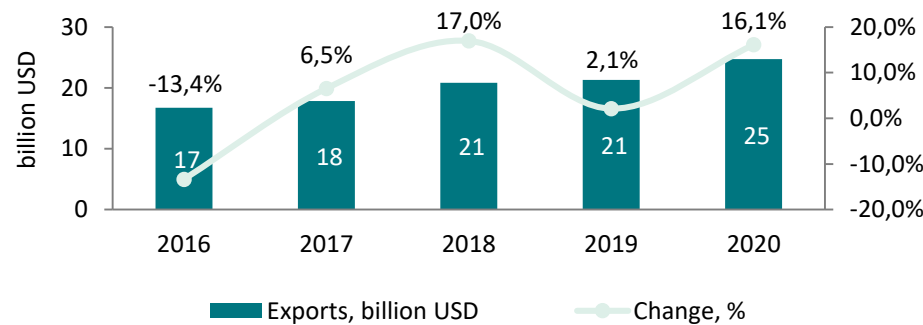
Changes in salt and salt peroxide, inorganic acid and metal exports, billion USD



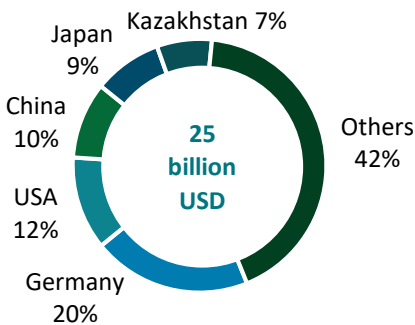
Structure of salt and salt peroxide, inorganic acid and metal exports, billion USD



Changes in various inorganic chemical exports, billion USD



Structure of various inorganic chemical exports, billion USD



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<b>JSC</b>	joint stock company
<b>GDP</b>	gross domestic product
<b>USD</b>	US Dollar
<b>EAEU</b>	Eurasian Economic Union
<b>Q</b>	quarter
<b>KWH</b>	kilowatt hour
<b>kg</b>	kilogram
<b>CIT</b>	corporate income tax
<b>m<sup>3</sup></b>	cubic metre
<b>VAT</b>	value added tax

<b>SEZ</b>	special economic zone
<b>CIS</b>	Commonwealth of Independent States
<b>USA</b>	United States of America
<b>LLC</b>	limited liability company
<b>LLP</b>	limited liability partnership
<b>FEA CN</b>	foreign economic activity commodity nomenclature
<b>TNC</b>	transnational company
<b>CAGR</b>	Compound Annual Growth Rate

Sector overview

Classification of inorganic chemistry products

Inorganic chemical production

Inorganic chemical product consumption

Inorganic chemical product imports

Inorganic chemical product exports

Production and consumption balance

Pricing

State support

Brief global market overview

[List of abbreviations](#)





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