CIREC monthly NEWS

Chemical industry reporting for Central and South East Europe
Supplemented by developments in Russia & neighbouring states

Telephone: +441202 959770 Email: support@cirec.net **Web:** www.cirec.net
Contact: Andrew Sparshott

Czech Republic, Hungary, Poland, Slovakia
South East Europe & Baltic States
Eurasia Russia-Ukraine-Belarus-Kazakhstan-Uzbekistan-Azerbaijan

Product coverage including olefins plus derivatives, aromatics plus derivatives, and organic chemicals

Issue No: 399, 23 February 2024

Features from this issue, including changing production and trade dynamics

Central European petrochemical markets

- Ethylene production in Poland dropped from 459,200 tons in January to December 2022 to 310,600 tons in 2023, whilst propylene fell from 416,700 tons to 285,200 tons.
- Petrochemical margins for Orlen have been consistent with historical data in the past year, but the main problem has been the drop in volume sales
- Despite the weakening trend in margins MOL's ethylene production in Hungary and Slovakia amounted to 648,000 tons in 2023 against 639,000 tons in 2022

Central European polymer and chemical trade

- Polish imports of polyethylene totalled 1.250 million tons in 2023 against 1.314 million tons in January to December 2022, with average prices falling from €1786.5 per ton to €1370.8 per ton
- Hungarian TDI exports rose in the first eleven months last year to 221,746 tons against 215,694 tons in January to November 2022. Average prices dropped from €2862.8 per ton to €2519.2 in 2023.
- Methanol imports into Poland totalled 637,531 tons in January to December last year against 932,863 tons in 2022

Regional methanol markets

- Russia produced 3.890 million tons of methanol in 2023 against 4.477 million tons in the same period in 2022
- Russian methanol exports amounted to 1.488 million tons in 2023 versus 2.069 million tons in 2022
- China accounted for 52.23% of Russian exports in January to December last year, amounting to a total of 781,917 tons versus 164,302 tons in 2022
- Metafrax has been absorbed in the Kremlin run state holding Roskhim, after the assets were seized from the shareholders in 2023
- Domestic methanol sales helped in 2023 by higher production of formaldehyde

Russian synthetic rubber production and trade

- Synthetic rubber production in Russia amounted to 1.411 million tons in January to December 2023 against 1.510 million tons in 2022 and 1.718 million tons in 2021
- Russian exports of synthetic rubber to China totalled $519.68 million in the period January to December 2023 against $423.611 million in 2022. By volume Russian shipments amounted to 371,043 tons in 2023 versus 239,519 tons in 2022.
- Roskhim has completed the reorganisation of the Sintez-Kaucuk by merging it with the Sterlitamak Petrochemical Plant (SNHZ)

Petrochemical projects Central Asia

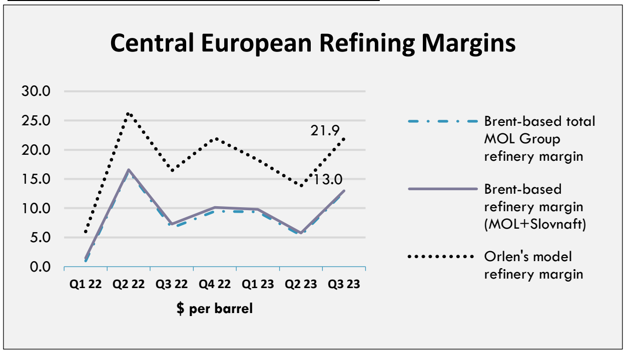
- Kazakhstan has engaged Linde to construct the polyethylene of 1.25 million tpa, consisting of two units of 625,000 tpa
- KMG and Sinopec signed an agreement in 2023 to develop a pre-feasibility study for a project for the production of PTA and PET at Atyrau with a production capacity of up to 735,000 tpa
- The MTO project under construction in Uzbekistan includes a plant for 300,000 tpa of PET

CENTRAL and SOUTH EAST EUROPE

Czech Crude Imports Jan-Dec 2023		
Country	***Vol mil tons***	***€ per ton***
Azerbaijan	1.965	655.0
Kazakhstan	0.756	648.3
Russia	4.387	543.1
US	0.181	596.1
Others	0.197	635.1
Total	7.487	615.503

Czech crude imports Jan-Dec 2023

Russia supplied 4.387 million tons to the Czech Republic in the full year of 2023 at an average price of €543.1 per ton. Azerbaijan was the second largest supplier, providing 1.965 million tons at an average price of $655.0 per ton. Although the Czech Republic is striving to move away completely from Russian crude the second half of 2024 may be particularly difficult when the capacity of the TAL pipeline will be temporarily limited due to modifications.



Polish oil imports Jan-Dec 2023

From the total of 19.291 million tons of crude imported into Poland in 2023, supplies from Saudi Arabia totalled 8.871 million tons at €559.4 per ton and from Norway 6.032 million tons at €545.2 per ton.

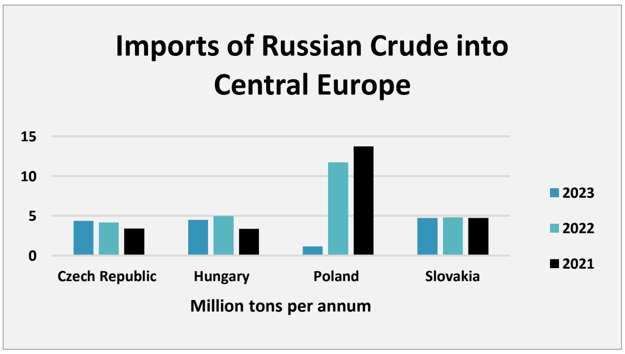
Orlen has achieved consistently higher refining margins than MOL despite than the MOL Group despite receiving some Russian discount. MOL has already started transporting crude oil from its oil field in Azerbaijan to Slovnaft in Bratislava via the Adria oil pipeline, but still require Russian supplies.

Polish Crude Imports Jan-Dec 2023		
Country	***Vol (mil tons)***	***€ per ton***
Saudi Arabia	11.294	576.8
Lithuania	0.032	590.5
Russia	1.150	316.4
Nigeria	1.118	606.2
Norway	8.753	571.1
US	1.412	602.5
UK	0.893	620.6
Others	0.352	0.0
Total	25.004	567.4

Orlen has gradually become more independent of Russian sources over the past decade. Supplies from Russia ended in late February 2023.

Central Europe refineries & oil supply

Orlen is interested in taking over the Schwedt refinery which currently operates under a temporary government trusteeship that expires on 10 March. The German government is trying to find a way of taking away Rosneft's ownership of the Schwedt refinery without impacting crude supplies from Kazakhstan that arrives using the Russian pipeline system. By nationalising the refinery Germany could find its oil supplies compromised even if Poland could help in the short term.



Whilst Poland has completed its transition to non-Russian crude and gas other countries in Central and East Europe are still in the process of finding alternative suppliers. In Slovakia Slovnaft plans to invest €200 million in the transition to non-Russian oil in the next five coming years, currently only around 30% is non-Russian.

Bulgaria replaced Russian oil imports in January with crude from Kazakhstan, Iraq and Tunisia. As Lukoil is no longer able to supply the Bourgas refinery with its own Urals oil, it has to use oil from elsewhere, raising costs at the plant. Bulgaria was the fourth largest buyer of seaborne Russian oil in 2023, purchasing over 100,000 bpd. The profitability of the plant is also affected by a 60% tax imposed by Bulgaria's government on the refinery's profits. Finding a buyer for the Bourgas refinery is affected not only by commercial factors but also political.

Central European Olefin Production & Trade

Polish Petrochemical Production (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Ethylene	310.6	459.2
Propylene	285.2	416.7
Butadiene	49.4	59.5
Toluene	0.5	13.7
Phenol	38.9	42.8
Polyethylene	271.2	318.2
PVC	155.8	276.1
Polypropylene	265.1	321.8

Polish petrochemical production Jan-Dec 2023
Ethylene production in Poland dropped from 459,200 tons in January to December 2022 to 310,600 tons in 2023, whilst propylene fell from 416,700 tons to 285,200 tons. Butadiene production at Plock dropped to 49,400 tons from 59,500 tons.

Due to these declines in petrochemical production and other sectors chemical production in Poland fell overall by 21% in 2023 against 2022. In the plastics sector polyethylene production dropped to 271,200 tons in January to December 2023 versus 318,200 tons in 2023. Polypropylene production at Plock dropped from 321,800 tons to 265,100 tons. PVC production fell from 276,100 tons to 155,800 tons with the plant at Wloclawek idle in the last three months of 2023.

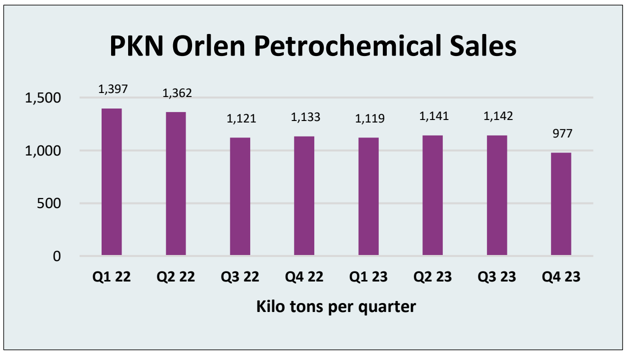
Orlen Group fourth quarter and Jan-Dec 2023
Revenues for the Orlen Group amounted to zl 372.640 billion (€86.179 billion) in 2023 versus zl 282.434 billion (€65.425 billion) in 2022. The Group's fourth-quarter results were impacted by the performance of the gas segment, which helped offset some of the declines recorded in refining and petrochemicals.

Orlen Q1-Q4 2023

- *Revenues boosted by Lotos and PGNiG acquisition*
- *Refining profits affected by ending of Russian crude*
- *Group refineries ran at 88% in Q1-Q4 2023*
- Weak performance reported in petrochemicals

Petrochemical margins have been consistent with historical data in the past year, with the exception of butadiene in the second half of 2023, but the main problem has been the drop in volume sales. Butadiene margins amounted to €173 per ton in the fourth quarter last year, rising from €115 in the third quarter, but dropping sharply from the peak of €614 in the third quarter in 2022. In the aromatics sector benzene and paraxylene margins were somewhat stable although toluene margins showed more volatility dropping from €530 per ton in the third quarter to €348 in the fourth.

Orlen Petrochemical Margins (€ per ton)								
Product	***Q1 22***	***Q2 22***	***Q3 22***	***Q4 22***	***Q1 23***	***Q2 23***	***Q3 23***	***Q4 23***
Ethylene	664	810	639	606	668	664	547	621
Propylene	679	820	598	514	564	554	421	484
Toluene	155	450	619	428	413	455	530	348
Benzene	333	422	429	115	312	393	233	331
Butadiene	410	547	614	489	396	369	115	173
PX	262	586	586	593	544	481	419	440



Despite relative stability in margins Orlen's sales of petrochemicals dropped to 977,000 tons in the fourth quarter in 2023 against 1.133 million tons in the same quarter in 2022. Total sales declined to 4.379 million tons in 2023 against 5.013 million tons in 2022.

Last year was particularly difficult for European petrochemical producers, with costs for many companies exceeding revenues.

Orlen's sales revenues from petrochemicals totalled €6.985 billion in 2022 against costs of €6.461 billion, thus remaining profitable, but dropped to €4.255 billion in 2023 against production costs from energy, raw materials, transport, etc to €4.838 billion.

Orlen Petrochemical Divisional Performance (€ million)		
	Jan-Dec 23	***Jan-Dec 22***
Sales revenues	4255.0	6833.9
External revenues	3311.1	5545.4
Inter-segment revenues	943.9	1288.5
Total operating expenses	-4718.4	-6321.3
Profit/(Loss) from operations	-388.4	491.1

Orlen's refining business was affected last year by ending purchases of Russian raw materials. Currently, crude oil is supplied from the North Sea, West Africa, the Mediterranean basin, as well as the Persian and Mexican Gulfs. An important partner in the supply of crude is Saudi Aramco, for which Orlen concluded a strategic contract for the supply of crude oil in 2022.

Orlen’s refineries in Poland, the Czech Republic and Lithuania operated at 88% in the fourth quarter in 2023. Overall, for 2023 refining volumes in the three countries belonging to the Orlen Group totalled 38.529 million tons against 37.020 million tons in 2022.

Orlen Petrochemical Plant Utilisation Rates%				
Division	***Q1 23***	***Q2 23***	***Q3 23***	***Q4 23***
Olefins (Plock)	78	70	67	37
BOP (Plock)	70	67	67	38
Metathesis (Plock)	51	18	0	0
Fertilisers (Wloclawek)	64	42	61	81
PTA (Wloclawek)	66	51	65	55
Olefins (Orlen Unipetrol)	85	49	82	81
PPF Splitter (Orlen Lietuva	81	80	82	84

Orlen Group utilisation rates
The olefins complex at Płock recorded a utilisation rate of only 37% in the fourth quarter against 70% in the second quarter and 78% in the first quarter. Lower utilisation was seen to a lesser extent in the third quarter due to deficit in feedstock (CDU VI and hydrocracking shutdowns at the refinery). Basell Orlen Polyolefins at Plock recorded lower utilisation rates in the fourth quarter, due in part to the availability of monomer feedstocks.

Low demand also meant that Metathesis propylene plant at Płock was kept idle in the third and fourth quarters after only operating on a limited basis in the second quarter. This impacted on propylene production for the Orlen Group which fell from 472,000 tons in 2022 to 362,000 tons in 2023.

Other Orlen Group plants in Poland reported lower utilisation rates in 2023 due predominantly to demand side factors, including the PVC plant and PTA plant at Wloclawek. Outside of Poland, Orlen Unipetrol achieved 81% utilisation at the Litvinov olefins complex in the fourth quarter after recovering from 49% in the second quarter. In Lithuania Orlen Lietuva’s PPF splitter achieved an 84% utilisation rate in the third quarter.

Orlen-Olefiny 111 debt financing
Costs for Orlen’s Olefiny 111 petrochemical investment at Plock have escalated in the past two years which as a result has forced Orlen to revise its investment strategy for construction. In order to complete the both the external and internal parts of the project, including utilities, Orlen requires additional financing.

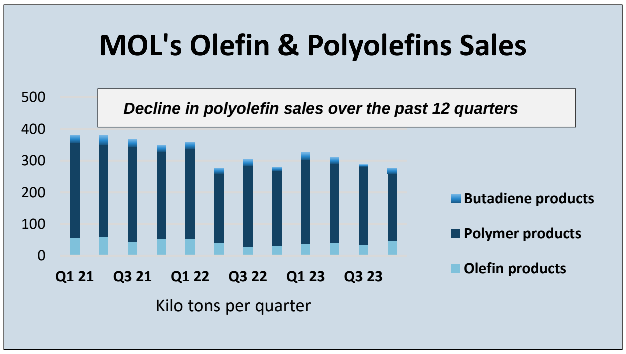
In February Orlen approved the disposal of properties situated in the Stara Biała Municipality and Płock, together with their component parts, to be affected through their contribution in kind as payment for shares in the increased share capital of Orlen Olefiny. The requested approval for the sale of the property to the SPV represents one of the most important conditions for achieving financial closure for the project.

MOL’s petrochemical division Jan-Dec 2023
Lower petrochemical margins contributed to MOL’s the 41% drop in full year downstream EBITDA, which amounted to $1.328 billion. More normal refinery margins were seen in 2023 against 2022 coupled with excessive extraordinary taxes that could only partly be offset by higher production and sales volumes. The fourth quarter recorded an EBITDA of $456 million which was down by 3% against the second quarter.

Despite a slight increase compared to the previous quarter, petrochemical margins remained weak in the fourth quarter. As a result, the petrochemicals EBITDA continued to be in the red, contributing negatively to EBITDA in the whole of 2023.

MOL's Olefin Production (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Ethylene	648	639
Propylene	346	330
Butadiene	63	70
Raffinate	95	109

Despite the weak demand MOL’s ethylene production in Hungary and Slovakia amounted to 648,000 tons in 2023 against 639,000 tons in 2022. Propylene production rose from 330,000 tons to 346,000 tons, whilst butadiene decreased from 70,000 tons to 63,000 tons. External olefin sales for MOL comprise ethylene shipments to BorsodChem for PVC production and internal group sales involve propylene to Slovnaft for polypropylene production. In total olefin sales amounted to 157,000 tons against 156,000 tons in 2022.



MOL's petrochemical sales fell in the third quarter and fourth quarters both for olefins and butadiene, with petrochemical margins dropping progressively since the second quarter in 2022.

MOL Group's most significant commitments in Hungary relate to a polyol project of MOL Petrochemicals (€105.8 million), which aims to become a major producer of polyether polyols. Another €106.9 million is being invested in the construction of the metathesis project, which is a greenfield investment providing additional propylene for the polyol complex. For the expansion of the maleic anhydride plant at the Danube refinery, located at Szazhalombatta, €30.7 million has been allocated. Other projects being undertaken by MOL in Hungary include a revamp of the PP3 unit and modernisation of the ethylene. In Croatia the Rijeka refinery, belonging to MOL subsidiary INA is undergoing an upgrade project.

HIP Petrohemija-production 2023 and investment targets

HIP Petrohemija was taken over fully by Naftna Industrija Srbije (NIS) from the second half of 2023, providing additional income for NIS of €130.1 million in the period July to December. For the purposes of fair value estimation, HIP Petrohemija is viewed as a single cash-generating unit which includes facilities for cracker ethylene, HDPE, LDPE and synthetic rubber.

HIP Petrohemija Production and Sales (€ per ton)		
	2nd half 2023	***2nd half 2022***
Production	193.4	268.1
Sales	149.0	174.3

The first planned maintenance shutdown undertaken at the HIP Petrohemija plant took place between 15 September and 31 October 2023, which meant that production and sales of petrochemicals were lower in the second half of the year. The investment and overhaul activities contributed to increasing safety, improving energy efficiency, and the safe and reliable operation of the plant in the coming period.

The strategy of further development of HIP Petrohemija will be based on the modernisation of basic production capacities and the construction of new facilities, then on increasing energy efficiency and business efficiency, as well as on the implementation of projects in the field of environmental protection. Key investment activities have been carried out in the ethylene and PENG factories, and the aim is to increase the reliability of the plant, as well as increase operational and energy efficiency.

Czech Olefin Imports (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Ethylene	28.803	23.198
Propylene	39.408	38.321
Butadiene	65.772	67.014

Czech olefin monomer trade, Jan-Dec 2023

Czech imports of ethylene amounted to 28,303 tons in January to December 2023, up from 23,198 tons in January to December 2022. Ethylene exports from the Czech Republic amounted to 14,323 tons in January to December 2023 versus 12,560 tons in 2022.

Propylene imports into the Czech Republic rose from 38,321 tons in January to December 2022 to 39,408 tons in 2023, with main suppliers including Germany, Romania and Poland. Average prices for propylene imports dropped in 2023 to €943.7 per ton from €1358.6 per ton in 2022.

Czech Olefin Exports (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Ethylene	14.323	12.560
Propylene	21.244	3.070

Exports of propylene at the same increased to 21,244 tons, up from only 3,070 tons in 2022. The main destination for Czech propylene exports was Poland, taking 15,094 tons in January to December this year. Czech imports of butadiene amounted to 65,772 tons in January to December 2023, all of which was supplied by Germany and Hungary. Prices dropped dropping from €1178 per ton to €831.9 per ton. Nearly all the butadiene went to Kralupy for conversion into synthetic rubber.

Czech exports of ethylbenzene amounted to 96,210 tons against 79,271 tons in January to December 2022. All the ethylbenzene was shipped from Kralupy to Oswiecim, all within the structures of the Synthos Group.

Czech Imports of Propylene (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Germany	32.657	19.124
Bulgaria	4.725	4.825
Poland	0.000	5.976
Romania	1.048	5.251
Russia	0.000	1.220
Slovakia	0.066	0.993
Ukraine	0.000	0.524
Others	0.912	0.408
Total	39.408	38.321
Av € per ton	887.9	1358.6

Propylene imports into the Czech Republic rose from 29,512 tons in January to December 2022 to 33,210 tons in 2023, with main suppliers including Germany, Romania and Poland. Average prices for propylene imports dropped in 2023 to €943.7 per ton against €1436.5 per ton. Exports of propylene at the same increased to 21,244 tons in 2023, up from only 3,070 tons in 2022. The main destination for Czech propylene exports was Poland, taking 15,094 tons in 2023.

Czech imports of butadiene amounted to 65,772 tons in January to December 2023, all of which was supplied by Germany and Hungary. Prices dropped from €1178 per ton to €866 per ton. Nearly all the butadiene went to Kralupy for conversion into synthetic rubber.

Polish Monomer Import Costs (€ per ton)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Propylene	884.4	1251.5
Butadiene	959.3	1208.8
Styrene	1156.1	1561.2

Polish propylene & butadiene imports, Jan-Dec 2023

Contract prices of propylene and butadiene fell on average around a third against 2022. The decline in prices has been driven in part by lower average prices of crude oil as well as the demand and supply dynamics. The contract price of propylene in Europe increased towards the end of the third quarter, while production in the downstream sectors improved. Any improvement in the latter part of 2023 was not been enough to eradicate the oversupply, meaning that prices have again come under pressure.

Polish Imports of Propylene (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Bulgaria	14.962	7.922
Croatia	5.588	8.579
Czech Republic	17.350	0.000
Germany	58.157	63.477
Hungary	2.337	0.000
Russia	0.000	21.625
Ukraine	0.000	17.018
Serbia	4.828	0.000
Netherlands	18.795	0.000
Others	2.325	3.918
Total	124.343	122.540
Av € per ton	884.4	1251.5

Polypropylene demand has proved relatively stable but other derivative areas such as oxo alcohols and propylene oxide for the polyol industry continue to experience lower consumption than normal. European crackers and refineries operated at their minimum technical loads in the early part of the third quarter, which helped to minimise the oversupply of propylene.

Poland imported 124,373 tons of propylene in January to December 2023 against 122,540 tons in January to December 2022. Market sources of propylene changed sharply since the Russian invasion of Ukraine in February 2022, firstly ending Russian shipments due to self-sanctioning and secondly from Ukraine where the sole petrochemical complex at Kalush had to stop production. To replace imports from traditional suppliers Russia and Ukraine, imports this year apart from Germany have been sourced from Bulgaria, the Czech Republic, the Netherlands and Serbia. Average prices dropped from €1251.5 per ton in January to December 2022 to €884.4 in 2022.

Polish Butadiene Imports (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Austria	32.668	31.678
Czech Republic	0.909	1.484
France	0.000	3.439
Germany	28.981	20.513
Hungary	23.077	32.298
Others	5.161	0.094
Total	89.887	89.506
Av € per ton	959.3	1208.8

Butadiene import prices for Poland dropped from €1208.8 per ton in January to December 2022 to €959.3 per ton in January to December 2023 with volumes rising slightly from 89,506 tons to 89,887 tons. Imports from Hungary dropped from 32,898 tons in 2022 to 23,077 tons.

Hungarian Butadiene Exports (unit-kilo tons)		
Country	***Jan-Nov 23***	***Jan-Nov 22***
Czech Republic	14.951	5.110
Germany	3.014	6.049
Poland	22.059	35.355
Total	40.024	46.514
Av € per ton	822.3	1023.5

Hungarian propylene exports Jan-Nov 2023

Exports of propylene from Hungary dropped in the first eleven months in 2023, amounting to 74,492 tons versus 85,337 tons in the same period in 2022. Although MOL currently produces more propylene than it consumes, it is currently building a new propylene plant with a capacity of 100,000 tpa which is targeted for conversion into propylene oxide.

Export prices from Hungary dropped from €1274.0 per ton to €902.4 per ton in 2023, following the trajectory in European pricing. Exports to Slovakia from MOL to Slovnaft dropped slightly from 73,394 tons to 72,360 tons in January to November 2023. Slovnaft uses propylene for the production of polypropylene as its cracker is unable to meet full demand despite an increase in plant utilisation in the third quarter.

Hungarian Propylene Exports (unit-kilo tons)		
Country	***Jan-Nov 23***	***Jan-Nov 22***
Germany	0.000	7.467
Poland	2.034	3.936
Romania	0.000	0.000
Slovakia	72.360	73.934
Total	74.492	85.337
Av € per ton	902.4	1274.0

Hungarian butadiene exports amounted to 40,024 tons in the first eleven months in 2023 against 46,514 tons in the same period in 2022. Shipments into Poland totalled 22,059 tons in January to November 2023 against 35,355 tons in the same period in 2022. Exports to Germany dropped from 6,049 tons to 3,014 tons and to the Czech Republic rose from 5,110 tons to 14,951 tons. Average prices for Hungarian butadiene exports fell to €822.3 per ton versus €1023.5 in 2022.

Polish Styrene Imports (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Belgium	7.205	9.866
Czech Republic	12.735	12.045
Finland	0.844	0.836
Netherlands	32.356	51.779
Germany	12.372	17.077
Others	7.019	3.841
Total	72.532	95.444
Av € per ton	1156.1	1561.2

Central European styrene trade Jan-Dec 2023

Synthos was largely responsible for the imports of 72,532 tons of styrene into Poland in 2023 dropping from 95,444 tons in 2022. The Netherlands was the leading supplier, shipping 32,356 tons to Poland which dropped from 51,779 tons in 2022. Styrene import costs into Poland dropped from €1561.2 per ton in 2022 to €1156.1 in 2023.

Italy remains the dominant source of styrene imports into Hungary, supplied by Versalis to its polystyrene plant at Szazhalombatta. Imports of styrene into Hungary totalled 63,033 tons in January to November 2023, down from 78,490 tons in the same period in 2022. Prices for styrene imports into Hungary dropped from €1672.9 per ton in January to November 2022 to €1394.5 per ton in 2023.

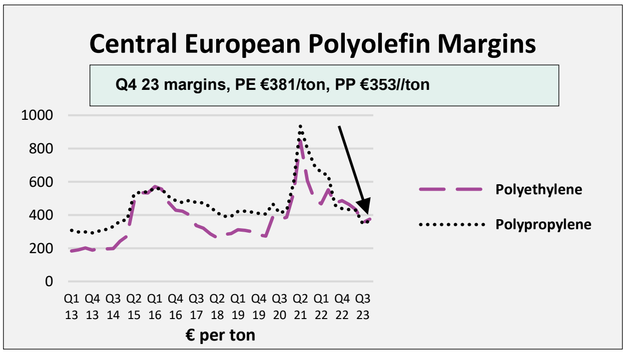
Hungarian styrene imports (unit-kilo tons)		
Country	***Jan-Nov 23***	***Jan-Nov 22***
Italy	63.033	78.490
Netherlands	4.326	4.414
Others	0.560	0.066
Total	68.653	89.285
Av € per ton	1394.5	1672.9

Styrene imports into the Czech Republic increased from 27,551 tons to 29,335 tons in 2023. The main consumer is Synthos at Kralupy for processing into synthetic rubber. The Netherlands was the main supplier, shipping 16,197 tons versus 18,943 tons whilst shipments from Germany amounted to 6,332 tons in January to December 2023 against almost only 187 tons in 2022.

Czech Styrene Imports (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Belgium	1.116	3.334
Germany	6.332	0.187
Netherlands	16.197	18.943
Poland	0.000	2.912
Others	5.690	2.176
Total	29.335	27.551
Av price per ton	1014.1	1611.6

Styrene exports from the Czech Republic increased from 10,645 tons in 2022 to 14,436 tons in January to December 2023. Exports were allowed to increase last year due to lower SBR production and thus less styrene consumption at Kralupy. Czech exports of ethylbenzene amounted to 96,210 tons against 79,271 tons in January to December 2022.

Central European Polyolefin Production, Trade & Projects



Central European polyolefin margins Q4 2023

Despite lower sales volumes in Europe last year polyethylene margins still averaged €365 per ton in the fourth quarter against €297 per ton in the first quarter in 2022. Most producers reported lower polyolefin sales in 2023 due to recessionary trends affecting most of Europe. Demand for LDPE and HDPE in Central Europe tended to stabilise in the third and fourth quarters but at the same time only showing only slight signs of growth in certain applications. Prices have been on a falling trajectory this year, and with lower feedstock costs and margins have started to level out.

Polish Polyolefin Production (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Polyethylene	271.2	318.2
Polypropylene	265.1	321.8

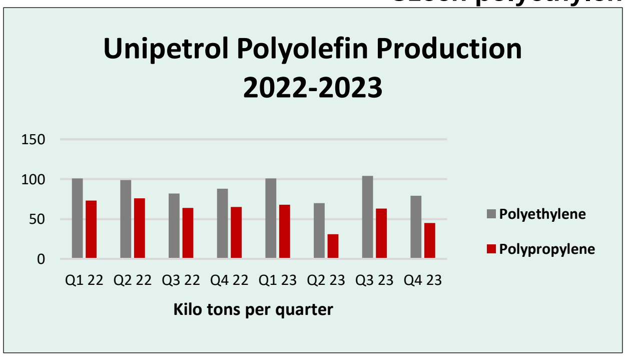
Central European polyolefins production Jan-Dec 2023

Production of polyethylene in Poland fell from 318,200 tons in 2022 to 271,200 tons in 2023. Polypropylene production fell from 321,800 tons in 2022 to 265,100 tons in January to December 2023. Currently polypropylene production in Poland takes place at Plock, but in the near future production will start at the new Polimery Police plant. This plant was expected to start in August or September, but problems with the equipment during the start-up phase has been the cause of the delay.

MOL's Polyolefin Production (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
LDPE	210	216
HDPE	285	286
PP	476	444
PE Totals	495	502

The MOL Group reduced polyethylene production less than Orlen, falling slightly from 502,000 tons in 2022 to 495,000 tons in 2023 at its two plants in Hungary and Slovakia. HDPE production at Tiszaujvaros dropped from 286,000 tons to 285,000 tons. Polyolefin sales from the MOL Group amounted to a total of 978,000 tons in 2023 994,000 tons in 2022.

Czech polyethylene production and trade Jan-Dec 2023



Production of polyethylene at Litvinov amounted to 354,000 tons in the period January to December 2023 against 370,000 tons in 2022. Consumption of polyethylene in the Czech Republic has mirrored other markets in Europe in the past two years, with quarterly volumes falling sharply in 2023. Overall, for 2023 Czech polyethylene consumption fell to 235,604 tons against 269,901 tons in 2022.

Czech prices for both exports and imports of polyolefins were lower in 2023 against 2022. Polyethylene exports amounted to 410,125 tons in 2023 against 412,178 tons in 2022.

Czech polyethylene exports (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
LDPE	28.276	30.275
LLDPE	3.595	4.763
HDPE	354.103	357.022
EVA	3.187	5.859
Other	20.966	14.260
Total	410.125	412.178
Av € per ton	1381.851	1849.476

HDPE export shipments comprised 354,103 tons in 2023 against 357,022 tons in 2022. Germany was the largest destination for Czech HDPE supplied from Litvinov in 2023, amounting to 141,703 tons in January to December for €167.993 million. Other important markets for Czech polyethylene exports include Poland, Italy and Belgium.

Czech polyethylene imports (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
LDPE	99.552	119.759
LLDPE	22.996	22.027
HDPE	117.885	115.372
EVA	10.187	10.318
Other	41.109	42.153
Total	291.729	309.629
Av € per ton	1579.5	1929.2

For imports of all forms of polyethylene, Czech inward shipments amounted to 291,729 tons in January to December 2023 against 309,629 tons in 2022, with prices dropping from €1929.2 per ton to €1579.5 per ton. Germany was the largest source of polyethylene imports, amounting to 62,780 tons for €94.108 million, followed by Belgium with 35,954 tons for €55.357 million.

Polish polyethylene trade Jan-Dec 2023

Polish trade in polyethylene declined in 2023, for both imports and exports and both in volume and value. Economic conditions affected both demand and pricing. Overall Poland carries a large deficit in polyethylene supply, which is major factor behind Orlen's Olefiny 111 project at Plock now under construction.

Polish Polyethylene Trade		
Exports	***Jan-Dec 23***	***Jan-Dec 22***
Vol (kilo tons)	282.519	343.998
Value (€ million)	379.6	558.5
Av € per ton	1343.6	1623.7
Imports	***Jan-Dec 23***	***Jan-Dec 22***
Vol (kilo tons)	1249.657	1314.290
Value (€ million)	1703.4	2348.0
Av € per ton	1370.8	1786.5

Polish imports of polyethylene totalled 1.250 million tons in 2023 against 1.314 million tons in January to December 2022, with average prices falling from €1786.5 per ton to €1370.8 per ton. Imports of polyolefins and all types of plastics from Russia into Poland saw a progressive decline in 2022, with other suppliers from Europe taking more market share.

Polish PE imports (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
LDPE	345.195	351.894
LLDPE	204.920	238.186
HDPE	423.415	455.577
EVA	18.637	17.758
EAO	206.308	194.548
Others	51.182	56.328
Total	1249.657	1314.290
Av € per ton	1370.8	1786.5

Total costs of polyethylene imports into Poland amounted to €1.703 billion against €2.348 billion in 2022. HDPE is the largest category of imported polyethylene into Poland, amounting to 423,415 tons in January to December versus 455,577 tons in January to December 2022. Germany was the largest supplier of HDPE to the Polish market in 2023.

LLDPE imports dropped from 238,186 tons in January to December 2022 to 204,920 tons in the corresponding period in 2023. Most of the LLDPE imports were sourced mostly from West Europe, including France, the Netherlands and Germany. LDPE imports remained relatively stable, amounting to 345,195 tons versus 351,894 tons in 2022.

Polish PE Exports (unit-kilo tons)		
Product Group	***Jan-Dec 23***	***Jan-Dec 22***
LDPE	56.102	63.736
LLDPE	15.993	21.614
HDPE	188.700	227.634
EVA	10.750	3.669
EAO	6.002	22.886
Other	4.972	4.459
Total	282.519	343.998
€ per ton	1343.6	1623.7

Polish polyethylene exports amounted to 282,519 tons in 2023 against 343,998 tons in 2022. Average prices for polyethylene exports from Poland declined to €1343.6 per ton against an average of €1623.7 per ton in the period January to December 2022.

Revenues from exports decreased from €558.548 million to €379.589 million in January to December 2023. Exports of HDPE from Poland amounted to 188,700 tons versus 227,634 tons in January to December 2022. LDPE exports dropped from 63,736 tons to 56,102 tons.

Hungarian Polyethylene Exports (unit-kilo tons)		
Product	***Jan-Nov 23***	***Jan-Nov 22***
LLDPE	6.124	4.824
LDPE	77.782	80.409
HDPE	206.885	211.228
Other	11.180	18.616
Total	301.971	315.513
Av € per ton	1244.515	1572.610

Hungarian polyethylene trade Jan-Nov 2023

Hungarian polyethylene exports were slightly lower in the first eleven months in 2023, amounting to 301,971 tons against 315,513 tons in the same period in 2022. Revenues fell from €496.180 million to €375.808 million in 2023, meaning that average prices dropped from €1572.6 per ton in 2022 to €1244.5 per ton.

Hungarian Polyethylene Imports (unit-kilo tons)		
Product	***Jan-Nov 23***	***Jan-Nov 22***
LLDPE	31.015	19.501
LDPE	41.790	47.504
HDPE	79.388	86.289
EAO	8.486	9.522
EVA	3.966	5.061
Other	38.820	19.183
Total	203.464	187.060
Av € per ton	1478.1	1858.9

HDPE shipments from Hungary amounted to 206,885 tons in January to November 2023 versus 211,228 tons in the same eleven months in 2023, whilst exports of LDPE dropped from 80,409 tons to 77,782 tons.

Hungary remains a net exporter of LDPE and HDPE and still a net importer of LLDPE and ethylene copolymers. In the first eleven months in 2023 imports of all grades of polyethylene into Hungary amounted to 203,464 tons against 187,060 tons in the same period in 2022. Import costs for polyethylene fell to €300.742 million against €347.727 million.

Polish PP Imports (unit-kilo tons)		
Category	***Jan-Dec 23***	***Jan-Dec 22***
PP homo	594.789	609.740
Polyisobutylene	3.053	3.509
Propylene copolymers	292.816	289.262
Other	25.449	21.255
Total	916.108	923.766
Av €/ton	1458.1	1787.7

Hungarian import prices for polyethylene decreased on average from €1858.9 in January to November 2022 to €1478.1 in the first eleven months in 2023 with gradual price declines since the start of the year.

Polish PP Trade Jan-Dec 2023

Polish polypropylene imports, including homo grade and copolymers, fell in January to December 2023 to a total of 916,108 tons versus 923,766 tons in January to December 2022. Average prices per ton for all types of polypropylene decreased from €1787.7 to €1458.1 per ton. Homo grade polypropylene imports specifically dropped from 609,740 tons in 2022 to 594,789 tons in 2023, whilst copolymer imports increased from 289,262 tons to 292,816 tons.

Germany supplied 61,531 tons of propylene copolymers to Poland in 2023 for €98.881 million followed by the Netherlands with 34,109 tons for €52.461 million and Belgium supplying 30,852 tons for €51.305 million.

Polish PP Exports (unit-kilo tons)		
Category	***Jan-Dec 23***	***Jan-Dec 22***
PP homo	141.641	171.423
Polyisobutylene	0.723	0.341
Propylene copolymers	67.703	86.394
Other	3.068	4.611
Total	213.135	262.768
Av €/ton	1436.8	1865.9

Regarding export activity from Poland, shipments amounted to 213,135 tons against 262,768 tons in January to December 2022. Homo polymer grades comprised the main category of Polish polypropylene exports, where Germany was the largest destination taking 35,183 tons in for €45.982 million. Germany was followed by the Czech Republic taking 29,268 tons from Poland for €34.250 million.

Polish PP Supply/Demand Balance (unit-kilo tons)		
	Jan-Dec 23	***Jan-Dec 22***
Production	265.1	321.8
Exports	213.1	262.8
Imports	916.108	923.766
Market Balance	968.1	982.8

Polimery Police preparing for start-up tests

The Polish market for polypropylene is dominated by import activity, with inward shipments amounting to 916,000 tons in 2023 against exports of 213,100 tons.

The deficit in the trade balance was probably the main factor influencing Grupa Azoty to invest in the Polimery Police project. The project itself had progressed as scheduled until the past twelve months when the main contractor Hyundai informed Azoty of difficulties in completing construction.

Notwithstanding financial difficulties for Grupa Azoty, the current status of the project requires an integrity test of the plant to be carried out in the first quarter and the start of commercial operation of the plant in the first half of 2024. The integrity test should show if the plant has been completed to the technical specification and to identify any bugs before production is started. Propylene and polypropylene have thus far passed positive tests and are available for sale, including over 30 types of Gryfilen polypropylene. The product range includes homopolymers, random copolymers and impact copolymers. The first types of polypropylenes have already been produced of which the first two are on regular sale. These include products for the production of strings and strapping tapes, and for the production of rigid packaging in thermoforming technology. Another product is being designed for the production of BOPP film.

Polimery Police Main Production Facilities		
	Licensor	*Capacity (ktpa)*
PDH	OLEFLEX	430
PP	UNIPOL	440

Grupa Azoty Polyolefins has set out plans to operate Polimery Police at up to 70% of its nominal capacity in the first half this year, with the aim of increasing production to full capacity by the end of the third quarter.

Czech polypropylene production and trade Jan-Dec 2023

Production of polypropylene at Litvinov amounted to 207,000 tons in the period January to December 2023 against 278,000 tons in 2022. Consumption of polypropylene in the Czech Republic fell to 390,502 tons against 470,303 tons in 2022. Polypropylene is much more widely used in the Czech plastics industry than polyethylene.

Czech polypropylene exports (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
PP Homo	224.071	253.671
Propylene Copolymers	46.604	51.155
Other	28.327	3.069
Total	299.002	307.896
Av € per ton	1368.3	1632.9
Czech polypropylene imports (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
PP Homo	295.929	288.258
Propylene Copolymers	214.690	191.580
Other	14.824	17.641
Total	525.443	497.479
Av € per ton	1584.8	1909.1

Exports of all forms of polypropylene from the Czech Republic amounted to 299,002 tons in January to December versus 307,896 tons in January to December 2022, with average prices dropping from €1632.9 per ton to €1368.3. Homo-grade PP provides the main category of Czech polypropylene exports, amounting to 224,071 tons in 2023 last year versus 253,671 tons in 2022.

For imports of all forms of polypropylene, Czech inward shipments increased to 525,443 tons in January to December 2023 from 497,479 tons in 2022, with average prices dropping from €1909.1 per ton to €1584.8 per ton. Imports of propylene copolymers increased from 191,580 tons to 214,690 tons whilst homo grade polypropylene imports increased from 288,258 tons to 295,829 tons.

Hungarian polypropylene trade Jan-Nov 2023

Hungarian Polypropylene Exports (unit-kilo tons)		
Product	***Jan-Nov 23***	***Jan-Nov 22***
PP homo	115.905	105.149
Propylene copolymers	82.782	82.075
Others	13.445	15.084
Total	212.132	202.308
Av € per ton	1355.0	1805.1

MOL shipped 115,905 tons of homo grade polypropylene (valued at €154.360 million) in January to November 2023 which was up from 105,149 tons in the same period in 2022 (€189.736 million in value), whilst copolymer exports rose slightly from 82,075 tons (€159.195 million in value) tons to 82,782 tons (€116.803 million).

Hungarian export revenues dropped for all grades of polypropylene from €365.189 million to €237.439 million, with average prices dropping from €1805.1 per ton to €1355.0. Polypropylene imports into Hungary amounted to 184,251 tons in the first eleven months in 2023 versus 197,735 tons in the same period in 2022, with costs in January-November 2023 amounting to €316.205.520 million from €351.877 million in 2022.

Hungarian Polypropylene Imports (unit-kilo tons)		
Product	***Jan-Nov 23***	***Jan-Nov 22***
PP homo	109.463	117.255
Propylene copolymers	46.945	53.488
Others	27.843	26.992
Total	184.251	197.735
Av € per ton	1717.0	1779.5

Overall average prices fell from €1779.5 per ton in 2022 to €1717.0 per ton in 2023, whilst copolymer prices dropped from €1845.9 to €1624.1 per ton. By category homo grade imports into Hungary comprised 109,463 tons in January to November 2023 against 117,255 tons whilst copolymers fell to 46,945 tons against 53,488 tons.

Central European Rubber Markets

Czech Rubber Trade (unit-kilo tons)		
	Jan-Dec 23	*Jan-Dec 22*
Exports synthetic rubber	149.520	182.509
Imports synthetic rubber	98.084	155.873
Imports natural rubber	88.822	91.849

Czech synthetic rubber trade Jan-Dec 2023

Czech exports of synthetic rubber amounted to 149,520 tons in January to December 2023 versus 182,509 tons in 2022. Imports declined from 155,873 tons to 98,084 tons in January to December 2023. Natural rubber imports into the Czech Republic dropped slightly from 91,849 tons to 88,822 tons.

Czech Exports of EBSR		
	Jan-Dec 23	*Jan-Dec 22*
Kilo tons	24.545	65.352
€ million	40.822	131.530
Av € per ton	1663.1	2012.6

Exports of emulsion styrene butadiene rubber (ESBR) from the Czech Republic dropped in 2023 to 24,545 tons against a total of 65,352 tons in 2022. Until it was stopped last year the Kralupy plant had a capacity of 110,000 tpa of ESBR and its permanent closure will reduce Synthos' total ESBR capacity to 320,000 tpa. Despite the closure of the Kralupy plant, Synthos remains the largest producer of ESBR in Europe, with 190,000 tpa of ESBR capacity at its site at Oswiecim and 130,000 tpa at Schkopau.

Czech butadiene rubber trade Jan-Dec 2023

The Czech Republic exported a total of 107,525 tons of butadiene rubber in 2023 against 104,226 tons in 2022. Average prices fell from €2193.0 per ton to €1502.0 per ton. Czech exports of butadiene rubber to India amounted to 14,864 tons was shipped in January to December 2023 against 20,418 tons in 2022. Other important markets included Poland where exports amounted to 13,372 tons in 2023 against 13,576 tons in 2022, and South Korea rising from 7,027 tons to 11,890 tons. Exports to Slovakia rose from 8,470 tons to 11,610 tons.

Czech Butadiene Rubber Exports		
	Jan-Dec 23	*Jan-Dec 22*
Total (unit-kilo tons)	107.525	104.226
Revenues € million	180.264	228.571
Av € per ton	1502.0	2193.0

Besides exports the Czech Republic also imported 24,271 tons of butadiene rubber in 2023 versus 28,871 tons in 2022.

Hungarian synthetic rubber Imports (unit-kilo tons)		
Product	***Jan-Nov 23***	***Jan-Nov 22***
Butadiene Rubber	39.995	42.603
HBR	7.174	14.389
SBR	47.652	37.341
Other	20.804	20.475
Total	115.624	114.807
Revenues € mil	257.075	331.505
Av € per ton	2223.4	2887.5

Hungarian synthetic rubber imports Jan-Nov 2023

Hungarian imports of synthetic rubber amounted to 115,624 tons in the first eleven months versus 114,807 tons in January to November 2022, whilst values dropped from €331.505 million to €257.075 million. Average prices rose slightly from €2223.4 per ton to €2887.5 in 2023.

Butadiene rubber imports dropped from 42,603 tons to 39,995 tons, with costs dropping from €94.409 million to €70.283 million. Imports of butadiene rubber from Russia dropped from 13,142 tons to 2,318 tons in January to November 2023 whilst imports from Indonesia increased from 4,073 tons to 13,226 tons. Imports of halogenated butyl rubber dropped from 14,389 tons in the first eleven months in 2022 to 7,174 tons and SBR imports rose from 37,341 tons to 47,652 tons.

Hungarian butadiene rubber Imports (unit-kilo tons)		
Product	***Jan-Nov 23***	***Jan-Nov 22***
Indonesia	13.226	4.073
Russia	2.318	13.142

Polish rubber trade Jan-Dec 2023

Rubber import prices into Poland for both synthetic and natural recorded gradual declines during 2023 as a combination of economic factors took effect. For all types of synthetic rubber average prices dropped from €2595.8 in 2022 to €2148.7 in 2023.

Poland imported 265,947 tons of synthetic rubber in January to December 2023 against 288,439 tons in January to December 2022. By category butadiene rubber was the largest, accounting for 55,043 tons against 57,699 tons in 2022. Imports of synthetic rubber from Russia amounted to 50,547 tons in 2023 against 92,653 tons in 2022 and 133,341 tons in 2021.

Polish Synthetic Rubber Imports (unit-kilo tons)		
Product	**Jan-Dec 23**	**Jan-Dec 22**
ESBR	21.225	13.371
Block SBR	40.325	39.289
S-SBR	23.615	15.447
Butadiene Rubber	55.043	57.699
Butyl Rubber	4.359	3.459
HBR	10.814	13.541
NBR	7.767	12.733
Isoprene Rubber	15.204	30.045
EPDM	43.500	44.931
Others	44.096	57.923
Total	265.947	288.439
Av € per ton	2,148.7	2,595.8

The largest grade of synthetic rubber imported from Russia to Poland in 2023 was block copolymers, amounting for 15,002 tons.

Russia supplied 12,149 tons of butadiene rubber to the Polish market in 2023 for €19.118 million. Although much reduced than in previous years Russia is legally able to export most grades of synthetic rubber up until June 2024. Sanctions were first imposed on Russia in July 2022 but were amended in February 2023 under pressure from European tyre manufacturers.

Synthos from the Kralupy plant has been able to increase its butadiene rubber exports to Poland this year, amounting to 8,639 tons in 2023 for €15.235 million. Saudi Arabia has been a new supplier of butadiene rubber to Poland since last year, replacing some Russian imports. In 2023 imports from Saudi Arabia amounted to 8,931 tons for €12.979 million.

Imports of halogenated butyl rubber from Russia amounted to 5,350 tons from the total of 10,814 tons in the period January to December 2023. The US and UK have started supplying Poland this year to replace some of the Russian imports.

Polish Exports of Synthetic Rubber (unit-kilo tons)		
Product	**Jan-Dec 23**	**Jan-Dec 22**
SBR	186.606	186.494
Butadiene Rubber	45.985	45.246
HBR	5.348	7.362
Others	35.010	46.199
Total	272.948	285.301
Av € per ton	1609.8	2026.9

Synthetic rubber exports from Poland amounted to 272,948 tons in 2023 against 285,301 tons in January to December 2022. Exports of butadiene rubber from Poland amounted to 45,985 tons in January to December versus 45,246 tons in 2022. Major destinations for Polish butadiene exports were led by Belgium which took 9,014 tons in 2023 for €13.346 million. Exports of butadiene to Brazil amounted 6.883 tons for €9.836 million and the Czech Republic 4,993 tons for €8.028 million.

Poland exported 5,348 tons of halogenated butyl rubber in 2023 against 7,362 tons in 2022. Halogenated butyl rubber is not produced in Poland and was previously imported from Russia. Hungary was the largest destination for Polish exports of HBR in the period January to December 2023, accounting for 3,258 tons for €8.255 million.

Synthos Production (unit-kilo tons)		
Product	**Jan-Dec 23**	**Jan-Dec 22**
Polystyrene	72.7	68.3
EPS	90.0	100.1
Synthetic Rubber	207.6	258.7

Polish Tyre Production (unit-kilo tons)		
Category	**Jan-Dec 23**	**Jan-Dec 22**
Car Tyres	267.5	294.2
Bus & truck Tyres	175.9	202.7
Tractor	7.6	10.0
Agricultural tyres	15.0	20.4
Total	466.0	527.3

Polish synthetic rubber production and domestic market Jan-Dec 2023

Synthetic rubber production at Oswiecim for Synthos amounted to 207,600 tons in January to December 2023 from 258,700 tons in 2022. Production of synthetic rubber has been affected by demand side factors which saw a reduction of consumption in the tyre sector from 527,300 tons in 2022 to 466,700 tons. Rubber sales from Synthos dropped by about 10% in 2023. On a quarterly basis there has been a decline in sales for each quarter from the start of 2022 through to the end of 2023. By illustration, Synthos sold 256,000 tons of synthetic rubber in the first quarter in 2022 which declined to 130,000 tons in the fourth quarter last year.

Synthos is the largest European manufacturer of styrene butadiene rubber (ESBR and SSBR), also offers neodymium polybutadiene rubber (NdBR), high styrene rubber (HSR) and nitrile butadiene rubbers (NBR).

Central European aromatics and derivatives

Polish Aromatic Exports (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Benzene	119.319	119.908
PTA	177.601	308.023
Bisphenol A	4.111	7.356
TDI	4.455	2.979
Toluene	3.426	6.559

Polish Aromatic Imports (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Adipic Acid	10.402	10.840
Bisphenol A	14.089	10.315
Caprolactam	11.483	10.262
Ethylbenzene	117.818	102.921
Paraxylene	0.000	34.150
Phenol	86.254	95.198
Phthalic Anhydride	33.340	30.806
PTA	5.957	1.864
Styrene	59.990	92.211
TDI	70.880	68.962
Toluene	22.983	21.461

Polish Phenol Supply/Demand Balance (unit-kilo tons)		
	Jan-Dec 23	***Jan-Dec 22***
Production	38.940	42.801
Exports	0.917	0.604
Imports	86.157	95.198
Market Balance	124.180	137.395

Czech Aromatic Exports (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Benzene	16.446	30.256
Toluene	11.093	5.385
Ethylbenzene	123.791	109.889
Styrene	14.436	10.645
Czech Aromatic Imports (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Benzene	25.656	72.591
Toluene	6.446	6.667
Styrene	29.375	14.093
Bisphenol A	26.864	29.069

South Korean Exports of Bisphenol A Main European customers (unit-kilo tons)			
Country	***2023***	***2022***	***2021***
Czech Republic	13.824	11.072	10.544
Poland	11.445	6.909	6.135
Germany	52.157	15.514	8.303

Polish benzene exports Jan-Dec 2023

Poland is largely a net importer of aromatic products but does export large volumes of benzene and PTA. Polish exports of benzene totalled 119,319 tons in January to December 2023 against 119,908 tons in 2022. Average prices for benzene dropped to €774.2 per ton from €1031.0 per ton last year. Germany purchased 107,357 tons from Poland in 2023 and the Czech Republic 16,356 tons. Benzene exports from Poland were slightly lower in the first part of 2023 due to problems for Petrochemia Blachownia in receiving coal based raw materials from Ukraine. Petrochemia Blachownia is part of the Czech Agrofert group.

Polish-Czech aromatic imports Jan-Dec 2023

Phenol imports into Poland amounted to 59,569 tons in January to December 2023 which was down from 79,440 tons in 2022. In January to December last year Germany was the dominant supplier of phenol to Poland, shipping 32,231 tons for €30.553 million. Russia previously provided phenol shipments to Poland, but the last delivery was made in early 2022.

The market balance for phenol consumption in 2023 showed some decline, dropping from 137,395 tons in 2022 to 124,180 tons. Phenol production at Plock fell from 42,801 tons to 38,940 tons. The project to expand phenol capacity to 70,000 tpa appears to have been placed on hold.

Phthalic anhydride imports into Poland increased from 30,806 tons in January to December 2022 to 33,340 tons in the same period in 2023. Imports from South Korea amounted to 16,741 tons in 2023 for €18.215 million, followed by Austria from the Schwechat plant with shipments of 4,433 tons for €6.704 million. The Czech Republic supplied 3,433 tons for €4.943 million. Phthalic anhydride is supplied by the Czech Republic from the Deza plant at Valasske Mezirici.

In other product areas, styrene imports amounted to 59,990 tons in the period January to December 2023 versus 92,211 tons in 2022 whilst ethylbenzene imports rose from 102,921 tons to 117,818 tons. Nearly all of the ethylbenzene imports come from the Czech Republic. All the ethylbenzene was shipped from Kralupy to Oswiecim, all within the structures of the Synthos Group.

Regarding Czech trade in aromatic monomers and derivatives, styrene exports increased from Kralupy in 2023, rising to 14,436 tons from 10,645 tons in 2022. Czech benzene imports dropped to 25,656 tons in 2023 against 72,591 tons in 2022, whilst toluene imports dropped to 6,446 tons and styrene rose to 29,375 tons up from 14,093 tons. Imports of bisphenol A dropped from 29,069 tons to 26,864 tons. There are two producers of benzene in the Czech Republic including Unipetrol at Litvinov and

Deza at Valasske Mezirici. Deza is owned by Agrofert and intends to increase the production capacity of benzene to 160,000 tpa in addition to toluene to 25,000 tpa.

Czech Epoxy Resins (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Austria	2.663	2.878
Germany	20.845	23.464
Spain	3.545	4.127
France	3.435	4.028
United Kingdom	1.476	1.776
Italy	4.100	4.476
Poland	1.661	2.508
Sweden	1.593	1.070
Turkey	2.186	1.819
Others	4.912	7.706
Total	46.416	53.853
Av Price per ton	3164.802	4567.2

Bisphenol A imports into Central Europe

Bisphenol A imports into the Czech Republic totalled 26,864 tons in 2023 against 29,069 tons in 2022. Poland increased imports from 10,900 tons to 12,350 tons. The largest user of bisphenol A in the Czech Republic is Spolchemie at Ust nad Labem, where epoxy resins are produced.

The main source of imports is South Korea which supplied 13,824 tons to the Czech Republic in 2023 which was up from 11,072 tons in 2022. Poland also increased shipments from South Korea last year rising from 6,909 tons to 11,445 tons from the total imports of 14,089 tons in 2023. The largest European recipient of Korean BPA was Germany, rising to 52,157 tons against 15,514 tons in 2022.

Spolchemie's capacity for epoxy resin production amounts to 100,000 tpa making it one of the largest producers in Europe. Czech exports of epoxy resins amounted to 46,416 tons in 2023 against 53,843 tons in 2022. Whilst volumes were similar, prices fell from €4,567.2 per ton to €3,164.8 per ton. This price erosion took place after the decline in raw material prices combined with downward pressure from market conditions. Germany remains the largest market for Czech epoxides, accounting for 20,845 tons in 2023 with the next largest being Italy which accounted for 4,100 tons.

Hungarian Benzene Exports (unit-kilo tons)		
Country	***Jan-Nov 23***	***Jan-Nov 22***
Belgium	7.416	5.348
Czech Republic	1.005	14.833
Germany	25.473	47.886
France	12.237	13.663
Italy	1.217	8.765
Netherlands	16.677	1.005
Poland	0.000	1.018
Total	64.024	92.516
Av € per ton	830.1	1008.4

Polish exports of epoxy resins amounted to 7,972 tons in 2023 at an average price of €2966.5 per ton against imports of 23,178 tons at an average price of €3045.0 per ton. In Poland production takes place at Lerg (formerly Ciech Zywice) which is the sixth largest producer in Europe at 30,000 tpa. Aside domestic production the most serious competitors in Poland include resin suppliers from Germany, the Czech Republic and Italy.

Hungarian Toluene Imports Jan-Nov 2023		
Country	***Kilo tons***	***€ million***
Belgium	5.526	7.142
Germany	19.255	22.257
Netherlands	5.822	7.463
Slovakia	7.108	7.090
Total	40.113	46.169

Hungarian aromatic trade Jan-Nov 2023

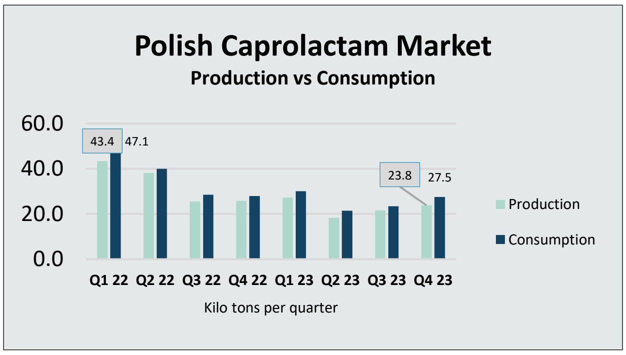
Hungarian benzene exports in the first eleven months in 2023 amounted to 64,024 tons for total costs of €53.146 million. Exports are distributed largely to Germany, Belgium and the Czech Republic. Exports dropped from 92,516 tons in January to November 2022 with average prices dropping from €1008.4 per ton to €830.1 per ton. MOL produces benzene at the Százhalombatta refinery in Hungary, and the Bratislava refinery in Slovakia. Delivery is possible via road tank cars and rail tank cars. MOL has a combined capacity of aromatics production at its two refineries of 400,000 tpa.

Czech Caprolactam Exports (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Belgium	2.075	11.041
Germany	1.240	13.840
Italy	12.614	27.225
Slovenia	3.727	6.549
Switzerland	2.027	4.657
Others	0.510	0.947
Total	22.192	36.369
Av € per ton	1519.1	2600.1

The production of toluene at Szazhalombatta is insufficient to cover Hungarian demand and thus imports are required. Toluene imports into Hungary amounted to 40,113 tons in the first eleven months for €46.169 million in value. Toluene imports last year were lower in correlation with lower TDI production. Germany was the largest supplier of toluene providing 19,255 tons to the Hungarian market followed by Slovakia with 7,108 tons.

Central European caprolactam market Jan-Dec 2023
The Czech Republic exported 22,192 tons of caprolactam in 2023 down from 36,369 tons in 2022. Average prices dropped from €2600.1 per ton to €1519.6 in 2023. All of the exports were shipped to European countries. Italy was the largest destination for Spolana's exports, reducing shipments from 27,225 tons in 2022 to 36,369 tons in 2023.

Poland reduced production of caprolactam to 91,000 tons in 2023 against 133,000 tons in January to December 2022. Since the second half of 2022 caprolactam production by Grupa Azoty at its two plants at Tarnow and Pulawy has been affected higher energy costs, combined with continuous weak demand for polyamide. Caprolactam imports into Poland amounted to 11,483 tons in 2023, nearly all of which was supplied from Germany. Poland became a net importer of caprolactam after its expansion of polyamide capacity at Tarnow.



Consumption of caprolactam in Poland dropped to 102,483 tons in 2023 against 143,517 tons in 2022. The fourth quarter in 2023 did show some minor improvement over the second and third quarters but as illustrated production and consumption are way down compared to the first quarter in 2022.

Polish PTA exports Jan-Dec 2023
PKN Orlen operates a modern PX/PTA complex with a capacity of around 690,000 tpa of PTA. PKN Orlen is the only producer in Europe to have production units fully integrated with paraxylene production.

The European nominal PTA production capacities total 3.985 million tpa. This includes Indorama with a nominal production capacity of 1.750 million tpa and assets located in Portugal, Spain and the Netherlands. Ineos Aromatics is Europe's second largest PTA manufacturer, with a production capacity of 1.400 million tpa, located in Belgium.

Polish PTA Production and Trade		
	Jan-Dec 23	*Jan-Dec 22*
Production (kilo tons)	410.0	572.0
Total Sales (kilo tons)	413.0	573.0
Total Revenues (€ million)	336.6	573.8
Exports (Kilo tons)	238.8	395.7
Export Revenues (€ million)	196.4	392.9

In 2023 the Orlen Group undertook extended downtime at the PTA unit at Wloclawek, partly due technical needs and partly due to weak demand. Revenues from PTA sales for Orlen, both for export or domestic, amounted to €336.6 million which was considerably lower of the €573.8 million in 2022. By volume, sales dropped from 573,000 tons in January to December 2022 to 413,000 tons in January to December 2023. Production at Wloclawek totalled 410,000 tons in 2023 against 572,000 tons.

Polish PTA Exports (unit-kilo tons)		
Country	*Jan-Dec 23*	*Jan-Dec 22*
Belarus	1.322	4.511
Belgium	0.240	14.351
France	8.997	0.000
Germany	192.047	315.885
Lithuania	3.062	37.291
Switzerland	4.791	7.684
Turkey	11.971	5.984
Others	16.355	7.208
Total	238.786	392.913
Av Price €	753.1	992.9

The significant drop in Orlen's production meant that PTA exports from Poland amounted to only 238,786 tons in January to December 2023 against 392,913 tons in January to December 2022. Average prices fell from €992.9 per ton to €753.1 per ton. Lower production impacted on exports to the traditional main destination Germany where deliveries fell from 315,885 tons in January to December 2022 to 192,047 tons.

Turkey was the second largest destination for PTA export shipments, taking 11,971 tons versus 5,984 tons in 2022. PTA producers anticipate that supply will remain limited into 2024, the prices of the raw material will be under pressure due to rising oil prices and downstream processors' efforts to contain price hikes.

Central European isocyanates & polyols

Hungarian TDI Exports (unit-kilo tons)		
Country	***Jan-Nov 23***	***Jan-Nov 22***
Austria	2.749	2.452
Belgium	28.281	19.774
Germany	9.093	12.331
Italy	25.458	30.929
Poland	25.627	28.620
Portugal	10.158	10.917
Romania	13.414	13.235
Spain	9.530	8.893
Turkey	29.568	30.523
Others	67.869	57.920
Total	221.746	215.594
Av € per ton	2519.2	2862.8

Hungarian MDI Exports (unit-kilo tons)		
Country	***Jan-Nov 23***	***Jan-Nov 22***
Czech Republic	6.632	6.100
Germany	19.091	21.115
Italy	9.507	5.094
France	7.904	8.953
UK	5.831	6.662
Poland	29.556	30.438
Romania	13.519	19.260
Turkey	11.115	11.132
US	0.000	23.562
Others	49.737	44.063
Total	152.892	176.380
Av price	1979.6	2572.8

Czech MDI imports (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
China	4.104	2.968
Belgium	9.453	11.826
Germany	5.956	7.822
Hungary	10.233	8.265
Netherlands	6.555	3.610
Others	2.031	1.128
Total	38.333	35.189
Av Price € per ton	2370.1	2486.4

Polish MDI Imports (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Germany	41.880	35.888
Netherlands	24.393	22.451
Hungary	36.106	34.957
Belgium	27.460	30.222
South Korea	6.461	2.761
Others	10.929	11.845
Total	147.230	138.124
Av € per ton	2023.7	2796.4

Hungarian TDI-MDI exports Jan-Nov 2023

Hungarian TDI exports rose in the first eleven months last year to 221,746 tons against 215,694 tons in January to November 2022. Average prices dropped from €2862.8 per ton to €2519.2 in 2023. Although prices overall were higher in the first half last year the trend has been falling gradually.

Volume sales of TDI tended to increase in the latter part of 2023 after a difficult first half of the year. Exports of TDI to Belgium rose from 19,774 tons in the first eleven months in 2022 to 28,281 tons in January to November 2023, whilst volumes to Italy fell from 30,929 tons to 25,458 tons.

Elsewhere in West Europe exports to Portugal dropped from 10,917 tons to 10,158 tons, whilst shipments to Spain increased from 8,893 tons to 9,530 tons. In Central Europe shipments to Poland fell from 28,620 tons to 25,627 tons and rose to Romania from 13,235 tons to 13,414 tons.

MDI exports from Hungary dropped in the first eleven months in 2022 from 176,380 tons to 152,892 tons in the same period in 2023. The most significant drop in sales was the US where no shipments were made in the first eleven months against 23,562 tons in January to November 2022. MDI export prices underwent a different cycle to TDI, dropping from €2572.8 per ton in January to November 2022 to €1979.6 per ton this year.

Poland was the largest destination for Hungarian MDI exports, shipping 29,556 tons in the first eleven months in 2023 versus 30,438 tons in the same period in 2022. Romania is the second largest market in Central and South East Europe, taking 13,519 tons in the first eleven months this year which was down from 19,260 tons.

Central European isocyanate trade Jan-Dec 2023

MDI imports into the Czech Republic totalled 38,333 tons in January to December 2023 against 35,189 tons in 2022. Average prices dropped from €2486.4 per ton to €2370.1 per ton. The leading supplier was Hungary which shipped 10,233 tons against 8,265 tons. TDI imports into the Czech Republic amounted to 7,173 tons in January to December 2023 versus 7,428 tons in January to December 2022.

MDI imports into Poland totalled 147,230 tons in January to December 2023 against 138,124 tons in January to December 2023. Average prices dropped from €2796.4 per ton to €2023.7 in January to December 2023. Germany increased shipments to 41,880 tons against 35,888 tons in January to December 2022, whilst imports from Hungary amounted to 36,106 tons against 34,957 tons.

TDI imports into Poland amounted to 70,880 tons in January to December 2023 against 74,137 tons in January to December 2022. Prices last year averaged €2524.5 per ton against

€2720.4 per ton in 2022. The cost of toluene was one of the factors behind the rise in TDI prices in the first half of the year but then slowed down later in the year allowing TDI prices to move downwards. Besides imports, Poland exported 4,454 tons of TDI in 2023, of which 716 tons was shipped to Russia.

Polish TDI Imports (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Belgium	2.266	1.766
Germany	17.219	18.953
Hungary	30.734	37.084
Netherlands	2.266	5.334
Saudi Arabia	2.318	2.718
South Korea	8.439	4.798
Others	1.959	3.484
Total	70.880	74.137
Av € per ton	2524.5	2720.4

Czech polyol imports Jan-Dec 2023

Czech polyol imports increased in 2023 to 46,229 tons against 41,896 tons in the same period in 2022, with average prices dropping from €2812.5 per ton last year to €2419.8 in 2023. The leading supplier to the Czech market was Belgium which shipped 13,706 tons in the period January to December 2023 against 11,099 tons in 2022, followed by Germany which exported 8,719 tons which was up from 8,333 tons. Hungary imported 28,049 tons of polyols in the first eleven months this year against 21,617 tons in the same period in 2022. The largest source of imports came from Belgium in the first eleven months, amounting to 12,388 tons against 1,345 tons in the same period in 2022.

Czech Polyol Imports (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Belgium	13.706	11.099
Germany	8.719	8.333
France	6.968	5.674
Netherlands	4.135	4.273
Romania	2.452	2.313
Slovakia	4.652	4.517
Others	4.989	5.687
Total	46.229	41.896
Av € per ton	2419.9	2812.5

Polish polyol trade Jan-Dec 2023

Polish polyol imports amounted to 145,292 tons in 2023 against 137,595 tons in 2022. The major sources of imports came from Belgium, Germany and the Netherlands. Polyol import prices dropped from €2140.1 per ton to €2593.5 per ton. The largest source of imports came from Germany 2023, amounting to 31,053 tons against 24,462 tons in 2022.

Polish Polyol Imports (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Belgium	19.202	22.806
China	6.435	3.459
France	4.701	0.000
Germany	31.992	24.462
Netherlands	31.053	12.515
Romania	15.978	32.732
Saudi Arabia	3.416	21.168
South Korea	17.081	0.000
Others	15.434	20.453
Total	145.292	137.595
Price	2140.1	2593.3

Exports of polyols from Poland in 2023 amounted to 55,717 tons against 59,177 tons in 2022. Destinations for deliveries were focused mostly on Europe in 2023, led by Germany taking 5,791 tons followed by Italy taking 5,579 tons. Due to lower prices this year export revenues dropped from €153.353 million to €123.215 million.

Polish Polyol Exports		
	Jan-Dec 23	***Jan-Dec 22***
Total volume (ktons)	55.717	59.177
Av € per ton	2212.2	2591.5

MOL polyol plant start-up

MOL claims that it wants to start the new polyol plant at Tiszaujvaros in the first half of 2024; similar references have been made previously but have not been carried through due to market concerns. There are suggestions that MOL has been waiting for European markets to revive before starting production. Start-up would clearly have a negative impact on pricing which remains under pressure from weak market activity.

MOL's original goal was to complete the polyol plant worth $1.3 billion with a production capacity of 200,000 tpa by the second half of 2021, but due to Covid the plans had to be modified. By March 2021, the project was 79% complete and thus it took to the end of 2023 to raise that level to 98%.

Hungarian Polyol Imports (unit-kilo tons)		
Country	***Jan-Nov 23***	***Jan-Nov 22***
Belgium	12.833	2.598
China	9.310	10.618
Netherlands	4.475	6.039
Poland	1.588	2.955
Others	1.741	0.944
Total	35.418	30.806

Hungarian polyol imports amounted to 35,418 tons in the first eleven months last year against 30,806 tons in the same period in 2022. Belgium was the largest supplier last year, shipping 12,833 tons, followed by China with 9,310 tons. Other polyol suppliers to Hungary included the Netherlands, Poland and Romania.

Central European organic chemical trade

Hungarian maleic anhydride exports Jan-Nov 2023

Hungary exported 18,027 tons of maleic anhydride in the first eleven months last year against 19,016 tons in the same period in 2022, with average prices dropping from €2071.0 per ton to €1164.0 per ton. Export shipments to Italy and Austria amounted to 2,692 tons and 2,012 tons in the first eleven months this year. Exports to Poland from Hungary dropped from 4,657 tons in January to November 2022 to 2,647 tons. Expansion of the maleic anhydride plant at Szazhalombatta represents one of MOL's current investment priorities.

Hungarian maleic anhydride exports (unit-kilo tons)		
Country	***Jan-Nov 23***	***Jan-Nov 22***
Austria	2.703	4.023
Germany	1.680	1.107
Italy	2.692	2.535
Poland	2.647	4.657
Slovenia	1.869	1.893
Others	6.436	4.802
Total	18.027	19.016
Av € per ton	1164.0	2071.0

Hungarian acrylonitrile imports Jan-Nov 2023

Hungary imported 17,003 tons of acrylonitrile in the first eleven months in 2023 which was significantly lower that the 54,812 tons in the same period in 2022. The Netherlands was the main source of imports in both years, shipping 10,266 tons in January to November 2023 versus 28,584 tons in the same period in 2022. Acrylonitrile prices dropped on average from €2303.8 per ton in the first eleven months last year to €2077.5 per ton in 2023.

Hungarian imports of acrylonitrile (unit-kilo tons)		
Country	***Jan-Nov 23***	***Jan-Nov 22***
Germany	2.472	5.436
France	0.891	10.275
Netherlands	10.266	35.653
Russia	0.000	1.488
Others	3.374	1.960
Total	17.003	54.812
Av € per ton	2077.5	2303.8

Hungarian aniline imports Jan-Nov 2023

Aniline imports into Hungary dropped from 161,148 tons in the first eleven months in 2022 to 94,123 tons in the same period in 2023. Inward shipments from BorsodChem-MCHZ in the Czech Republic amounted to 56,479 tons against 138,784 tons in the same period in 2022. Belgium supplied 24,545 tons in the first eleven months last year against 14,898 tons in the same period in 2022. Cost prices of aniline imports dropped from €1842.0 per ton to €1421.7 in 2023.

Hungarian aniline imports (unit-kilo tons)		
Country	***Jan-Nov 23***	***Jan-Nov 22***
Belgium	24.545	14.898
China	11.067	0.120
Czech Republic	56.479	138.784
Others	2.031	7.345
Total	94.123	161.148
Av € per ton	1421.7	1842.0

Polish organic chemical trade Jan-Dec 2023

Exports of organic chemicals from Poland fell from 2.160 million tons in January to December 2022 to 1.457 million tons in 2023, whilst imports dropped from 5.009 million tons to 3.912 million tons. High energy prices played a key role in driving up values last year which are still impacting on production and trade.

Polish Organic Chemical Trade		
Exports	***Jan-Dec 23***	***Jan-Dec 22***
Vol (kilo tons)	1,457.1	2,159.8
Value (€ million)	1,169.4	1,648.8
Imports	***Jan-Dec 23***	***Jan-Dec 22***
Vol (kilo tons)	3,911.6	5,008.5
Value (€ million)	2,658.2	3,035.3

Methanol imports into Poland totalled 637,531 tons in January to December last year against 932,863 tons in 2022. For other organic chemical imports Poland imported 37,537 tons of acetic acid in January to December against 45,451 tons in January to December 2022. The US was the leading supplier, shipping 17,414 tons followed by the UK with 9,820 tons. Imports from Germany dropped from 6,785 tons in 2022 to 2,062 tons whilst shipments from China dropped from 6,617 tons to 2,818 tons. Average prices for acetic acid imports into Poland declined from 2022 when they were €1164.8 per ton to €768 per ton in 2023.

Polish Imports of Acetic Acid (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Austria	1.607	1.547
China	2.818	6.617
Germany	2.062	6.785
Norway	0.851	0.951
Saudi A	1.793	0.000
UK	9.820	14.906
US	17.414	12.113
Others	1.172	2.533
Total	37.537	45.451

Ethyl acetate imports into Poland amounted to 20,765 tons in January to December 2023 against 15,839 tons in January to December 2022. Belgium provided the largest share of imports. Average prices for ethyl acetate dropped from €1556.6 per ton in 2022 to €1022.7 per ton. VAM imports amounted to 16,817 tons versus 17,056 tons in 2022. Average prices for VAM imports dropped from €2087.1 per ton to €1214.2 per ton.

Polish Organic Chemical Imports (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Acetic Acid	37.537	45.451
Butadiene	89.269	85.688
DINP/DOP	20.765	19.839
Ethyl Acetate	20.059	15.530
Isopropanol	11.359	12.587
Maleic Anhydride	10.145	12.264
Methanol	637.653	932.863
Propylene	114.703	120.138
VAM	16.817	17.056

Maleic anhydride imports into Poland amounted to 10,145 tons in 2023, down from 12,264 tons in the previous year. Imports were sourced in 2023 from Germany (4,492 tons), Hungary (2,836 tons) and South Korea (1,853 tons). Maleic anhydride was previously produced at Kedzierzyn-Kozle, using benzene as a feedstock.

Isopropanol imports into Poland amounted to 11,359 tons in 2023 against 12,587 tons in 2022. Aside Germany imports came last year from the Netherlands and South Africa. Orlen was considering the construction of an isopropanol plant at Plock to meet domestic demand, but this investment depends on the completion of the delayed phenol project.

Polish EO/PO Imports (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
DEG	30.343	27.949
Ethylene Glycol	106.293	52.315
Ethylene Oxide	21.769	11.504
Propylene Glycol	19.431	18.688

Ethylene oxide imports into Poland totalled 21,769 tons in January to December 2023 versus 11,504 tons in January to December 2022. Germany currently represents the main source of inward shipments.

Ethylene glycol imports increased in 2023 to 106,293 tons versus 52,315 tons in 2022. Belgium supplied the largest volume of glycols to the Polish market, shipping 91,405 in 2023. DEG imports increased in 2023 to 30,343 tons against 27,949 tons, whilst propylene glycol amounted to 19,431 tons against 18,688 tons in 2022. Poland also exports glycols, although in less volume than exports. Ethylene glycol exports totalled 20,423 tons in 2023 and propylene glycol 12,957 tons.

Polish Organic Chemical Exports (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Acetone	12.676	14.240
Ethylene Glycol	20.423	17.010
Formaldehyde	24.362	23.276
Methanol	264.268	425,483
Monochloroacetic Acid	37.883	16.405
Nonylphenol	4.198	6.864
N-Butyl Acetate	10.155	16.318
Phthalic Anhydride	3.337	2.461
Propylene	2.849	26.383
Propylene Glycol	12.957	11.009

Regarding export activity in organic chemicals, Polish shipments of monochloroacetic acid (MCAA) rose sharply in 2023 to 37,883 tons against 16,405 tons in 2022. MCAA production is undertaken by the PCC Group at Brzeg Dolny. The destinations for Polish MCAA exports are spread throughout Europe including Germany, Italy, France and Spain. Market prices for MCAA have been rising since the start of 2024 due to a rise in energy and feedstock costs.

Other organic chemical exports from Poland include acetone where shipments amounted to 12,676 tons in 2023 versus 14,240 tons in January to December 2022. The main markets for Polish acetone exports included Italy, Germany, Romania and Lithuania.

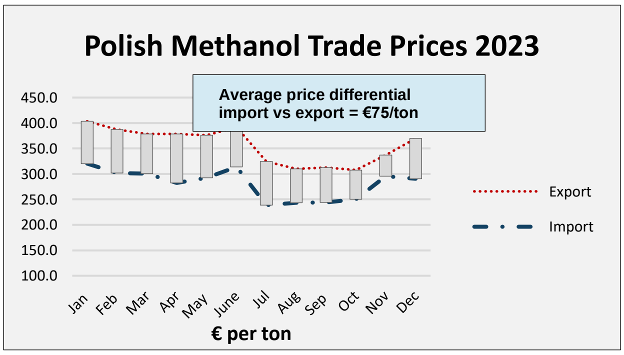
Normal butyl acetate exports dropped from 16,318 tons to 10,155 tons in January to December 2023. The largest destination for Polish butyl acetate exports is Germany, accounting for 4,252 tons in 2023 for a value of €5.998 million.

Methanol represents the largest organic chemical export commodity for Poland despite the lack of domestic production. Exports dropped in 2023 to 264,268 tons against 425,483 tons in 2022. Although export volumes are expected to be lower in 2024, Polish methanol traders play an important role in distributing product in Central Europe. The closure of the Ukrainian railways to Russian methanol shipments has meant that consumers particularly in South East Europe have been forced to seek out alternative sources with Poland in some cases acting as the transit hub.

Central European methanol markets

Czech Methanol Imports (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Germany	5.867	7.210
Norway	1.299	0.788
Russia	6.237	27.641
Poland	57.175	41.514
Others	6.562	1.621
Total	77.139	78.773
Av € per ton	373.6	462.7

Polish Methanol Imports (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Azerbaijan	5.104	1.138
Belgium	91.463	0.044
Finland	0.000	50.816
Germany	74.864	100.931
Netherlands	39.322	0.650
Norway	102.928	30.160
Russia	188.185	731.655
US	22.382	0.000
Trinidad	43.348	0.000
Venezuela	66.759	0.000
Others	3.297	16.495
Total	637.653	933.837
Av € per ton	306.7	380.4



Poland Methanol Exports (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Austria	30.860	69.587
Czech	54.802	72.584
Germany	79.930	107.709
Romania	18.927	45.384
Slovakia	41.925	49.389
Ukraine	25.175	18.484
Hungary	12.401	48.343
Others	0.268	14.004
Total	264.289	425.483
Av € per ton	356.4	422.3

Central European methanol trade Jan-Dec 2023

Czech imports of methanol amounted to 77,139 tons in 2023 against 78,773 tons in 2022. Russia accounted for 6,237 tons against 27,641 tons in January to December 2022 whilst imports from Poland increased from 41,514 tons to 57,175 tons. Prices per ton for methanol imports into the Czech Republic dropped from €462.7 in 2022 to €373.6 in January to December 2023.

Methanol imports into Poland totalled 637,653 tons in January to December last year against 932,863 tons in 2022. Average prices amounted to €306.7 per ton against €380.4 per ton last year. Poland has been developing alternative sources to Russian methanol before the full embargo took full effect in June. Apart from Venezuela and Belgium, other new sources arrived last year from the US and Trinidad.

Norway supplied 102,928 tons of methanol to Poland in 2023 versus 30,160 tons in 2022, whilst imports into Poland from Russia dropped from 731,655 tons to 188,185 tons. Trinidad supplied 43,348 tons in 2023 and Venezuela 66,759 tons of which 28,000 tons were shipped in December 2023.

Exports of methanol from Poland amounted to 264,289 tons in January to December against 425,483 tons in January to December 2022. Exports declined in 2023 due to lower imported volumes after the sanctions imposed on Russia took full effect after 18 June. Although Poland does not produce methanol it does export part of the imported product it receives and makes a profitable return from its sales to European customers. The price differential between imported methanol into Poland and exported from Poland amounted to an average of €75 per ton in 2023.

The largest destination for Polish exports in 2023 was Germany which took 79,930 tons against 107,709 tons in 2022. Ukraine imported 25,175 tons of methanol from Poland in 2023 against 18,484 tons in 2022.

Revenues from Polish exports of methanol dropped from €180.176 million to €96.269 million in January to December 2023, with average export prices declining from €422.3 per ton to €356.4 per ton.

Methanol imports into Hungary in the first eleven months in 2023 dropped to 80,977 tons against 103,823 tons in the same period in 2022. Imports from Russia dropped from 21,526 tons to zero and from Slovakia from 21,835 tons to 4,591 tons. Imports from Poland declined due to the embargo on Russian methanol, but still amounted to 10,311 tons. The largest suppliers to the

Hungarian market last year include Germany which provided 30,223 tons and the Netherlands which supplied 23,457 tons.

Hungarian methanol imports (unit-kilo tons)		
Country	***Jan-Nov 23***	***Jan-Nov 22***
Austria	2.137	2.570
Germany	30.223	13.866
Netherlands	23.457	12.464
Poland	10.311	23.199
Russia	0.000	21.526
Slovenia	6.199	3.635
Slovakia	4.591	21.835
Others	4.058	4.728
Total	80.977	103.823
Av € per ton	420.4	532.2

Azerbaijan has replaced some of Russia's previous market share in Europe. The top five importers of methanol from Azerbaijan include Romania, Italy, the Netherlands, Spain and Lithuania. Exports to the EU from Azerbaijan's SOCAR plant amounted to 260,700 tons in 2023 which was 0.4% down from 2022.

Romania imported 82,300 tons of methanol from Azerbaijan in 2023 against 60,100 tons in 2022, whilst the Netherlands reduced imported from 105,800 tons in 2022 to 71,300 tons.

Methanol Exports from Azerbaijan to EU (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Italy	75.7	47.3
Netherlands	71.3	105.8
Lithuania	9.9	6.5
Spain	16.4	6.1
Romania	82.3	60.1
Others	5.1	34.0
Total	260.7	259.7

Grupa Azoty

Grupa Azoty melamine restart

Grupa Azoty resumed the Melamine 111 unit at Pulawy at the end of January. The maximum production capacity of the Melamine III unit, 90 tons per day, represents approximately one third of the rated capacity of all melamine units at the subsidiary.

Grupa Azoty energy costs

Production of fertilisers, plastics and chemicals all recorded lower volumes in 2023 against 2022. Grupa Azoty's energy costs have been the main factor behind the group's losses and reduced production volumes. Losses had been restricted through lower production last year, but this represents only a short-term solution. Raw material costs were less of a problem than in 2022 and actually dropped in numerous sectors but energy costs recorded an almost twofold increase.

Grupa Azoty financial issues from Polimery Project

In addition to energy costs from 2023 the complicated issue of unexpected higher costs for the Polimery Police project may mean that Grupa Azoty has to write off a loss of zl 300 million due to the impairment of the assets of GA Polyolefins. The reason for the impairment is the delays incurred by the contractor Hyundai combined with weaker shorter term and medium-term prospects of the polypropylene market.

Grupa Azoty Production (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Nitrogen Fertilisers	2580	3006
Compound Fertilisers	616	834
Speciality Fertilisers	247	265
Pigments	19	26
Urea	870	1194
Oxo alcohols	90	158
Caprolactam	91	133
Polyamide	93	164

After submitting a request for revised project costs in November last year Hyundai Engineering submitted another proposal in February to postpone the completion date of the project by an additional 95 days. A proposal was also made to increase the remuneration for the EPC contract by €39.8 million. Grupa Azoty Polyolefins is still analysing the request from November

Grupa Azoty Financial Challenges

- *Extra costs from Polimery Project create liquidity problems*
- *This follows 18 months of difficult market conditions*
- Fertiliser, chemical and plastics sectors have all been affected
- Group's new management currently looking to stabilise the business

As of 31 January 2024, the material progress of the Polimery Police project was 99.86%. The last phase of the project is the most time-consuming. After passing the integrity test for 72 hours and achieving all guaranteed parameters, the general contractor will proceed with the complete handover of the unit to Grupa Azoty Polyolefins, i.e. the completion of the Polimery Police project. Until then, Hyundai Engineering will be responsible for the implementation of the project and all existing infrastructure.

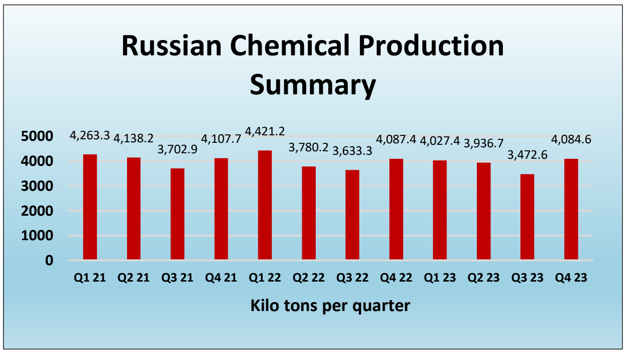
RUSSIA

Russian Chemical Production (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Ethylene	4425.8	4373.8
Propylene	2582.8	2458.9
Benzene	1311.7	1301.0
Toluene	370.3	330.7
Xylenes	428.9	425.7
Orthoxylene	129.0	110.7
Paraxylene	185.7	198.3
Styrene	687.9	714.9
Ethylbenzene	769.8	794.4
Methanol	3890.5	4505.5
Isopropanol	68.4	51.2
Butanols	146.5	161.7
Phenol	252.7	232.9
Acetic Acid	195.3	205.7
Phthalic Anhydride	90.3	61.9

Russian base chemical production Jan-Dec 2023

Chemical production in Russia showed marginal gains in 2023 over 2022, with the exception of several products. Of the larger scale commodities methanol experienced the biggest fall last year dropping from 4.506 million tons in 2022 to 3.891 million tons. Overall, the industry held up better than Russian producers had expected at the start of the year. On the surface at least most plants are running relatively normally, although sanctions are impacting on investment.

Prices for chemicals and chemical products dropped by 10.9% against 2022, mirroring chemical prices in Europe and Asia. During 2023, the cost of finished rubber and plastic products either slightly decreased or remained at the same level for a fairly long period.



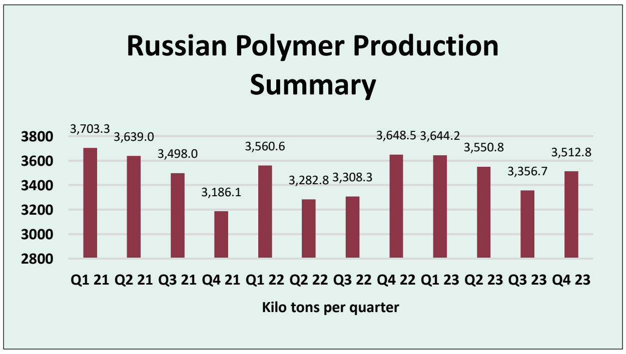
Based on the cross-section of products listed in the table, which covers a broad spectrum of the chemical industry, by quarter production has not changed significantly since the Russian invasion stared in February 2022 followed by sanctions. The worst period in the period 2021-2023 was recorded in the third quarter last year when methanol production dropped, and this was coupled with downtime at several ethylene plants.

The main challenges currently facing chemical producers in Russia consist of logistics, infrastructure and freight costs. One of the main causes of lower profits recorded in the first three quarters in 2023 for many producers included higher transport costs for shipments to China. Longer term acquiring technology represents a key question for many companies who are unable to replace Western licensors.

Russian Polymer Production (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Polyethylene	3,496.0	3,483.0
Polystyrene	572.1	579.0
PVC	976.7	970.0
Polypropylene	2,055.2	1,994.0
Polyamide	132.4	163.0
Synthetic Rubber	1,410.9	1,511.0
Synthetic Fibres	170.1	186.9

Russian polymer production Jan-Dec 2023

The production of plastics in Russia totalled 10.696 million tons in 2023 against 10.248 million tons in 2022. Russian production of polyethylene rose from 3.483 million tons to 3.496 million tons in 2023. Polypropylene production increased from 1.994 million tons to 2.055 million tons in 2023.



Polystyrene production in Russia amounted to 571,100 tons in January to December against 579,000 tons in the same period in 2022. PVC production increased from 970,000 tons in 2022 to 976,700 tons in 2023.

The production of polyamide in Russia fell from 163,000 tons in 2022 to 132,400 tons. Russian production of synthetic rubbers amounted to 1.411 million tons in 2023 compared to 1.511 million tons in 2022.

Russian Monomers

Russian Ethylene Production (unit-kilo tons)		
Producer	***Jan-Dec 23***	***Jan-Dec 22***
Angarsk Polymer Plant	152.383	210.483
Kazanorgsintez	588.789	623.014
Stavrolen	313.544	324.855
Nizhnekamskneftekhim	638.708	656.435
Novokuibyshevsk	33.042	41.197
Gazprom N Salavat	292.651	328.158
SIBUR-Kstovo	391.507	356.355
SIBUR-Khimprom	51.816	56.064
Tomskneftekhim	283.883	268.364
Ufaorgsintez	106.336	96.763
ZapSibNeftekhim	1579.113	1408.653
Total	4431.772	4370.341

Russian Propylene Production (unit-kilo tons)		
Producer	***Jan-Dec 23***	***Jan-Dec 22***
Angarsk Polymer Plant	78.208	113.882
Kazanorgsintez	43.028	50.518
Lukoil-NNOS	241.144	273.393
Stavrolen	120.729	144.064
Nizhnekamskneftekhim	315.223	323.401
Novokuibyshevsk	30.652	30.636
Omsk Kaucuk	64.941	53.392
Polyom	166.005	180.513
Gazprom neftekhim Salavat	112.398	147.092
SIBUR Kstovo	165.330	154.220
SIBUR-Khimprom	73.946	82.015
Tomskneftekhim	154.173	140.077
Ufaorgsintez	172.700	147.765
ZapSibNeftekhim	1057.455	925.652
Total	2795.931	2766.618

Russian Propylene Domestic Sales (unit-kilo tons)		
Producer	***Jan-Dec 23***	***Jan-Dec 22***
Angarsk Polymer Plant	30.823	25.002
Omsk Kaucuk	0.213	0.194
SIBUR-Kstovo	163.044	134.561
Akrilat	6.644	13.216
LUKoil-NNOS	218.221	191.922
Tomskneftekhim	1.947	1.465
Gazprom neftekhim Salavat	0.252	3.963
Nizhnekamskneftekhim	0.805	0.000
SIBUR-Khimprom	0.366	9.245
Stavrolen	3.302	30.532
Kazanorgsintez	1.151	3.301
Others	5.656	2.595
Total	432.424	415.996

Russian ethylene production Jan-Dec 2023
Russian ethylene production totalled 4.432 million tons in 2023 against 4.370 million tons in 2022. Regarding individual producers ZapSibNeftekhim at Tobolsk produced 1.579 million tons in January to December 2023, up from 1.409 million tons from January to December 2022. Nizhnekamskneftekhim produced 638,708 tons of ethylene in 2023 against 656,435 tons, whilst Kazanorgsintez dropped from 623,014 tons to 588,789 tons. Kazanorgsintez reduced production due to extended downtime in 2023.

Other important ethylene producers included SIBUR-Kstovo in the Nizhniy Novgorod region which produced 391,507 tons in 2023 versus 356,355 tons in 2022. SIBUR-Kstovo does not consume ethylene internally but sells to RusVinyl for PVC production and SIBUR-Neftekhim for ethylene oxide and ethylene glycol production.

In Bashkortostan Gazprom neftekhim Salavat produced 292,651 tons against 328,158 tons, whilst Ufaorgsintez increased production from 96,763 tons to 106,336 tons. IN southern Russia Stavrolen at Budyennovsk reduced ethylene production from 324,855 tons in 2022 to 313,544 tons in 2023.

Russian propylene production Jan-Dec 2023
Russian propylene production amounted to 2.796 million tons in 2023 against 2.767 million tons in 2022. ZapSibNeftekhim at Tobolsk raised production from 925,652 tons in 2022 to 1.057 million tons. In Tatarstan Nizhnekamskneftekhim produced 315,223 tons of propylene against 323,401 tons in 2022 whilst Kazanorgsintez reduced production to 43,028 tons from 50,518 tons.

Russian propylene domestic sales and exports Jan-Dec 2023
Russian sales of propylene on the domestic merchant market amounted 432,424 tons in 2023 against 415,996 tons in 2022. The largest propylene supplier to the domestic market was Lukoil-NNOS, shipping 218,221 tons against 191,922 tons in January to December 2022. SIBUR Kstovo increased domestic sales in 2022 to 163,044 tons versus 134,561 tons in 2022.

ZapSibNeftekhim purchased 72,823 tons of propylene in 2023 on the merchant market against 99,203 tons in 2022. Russia's largest merchant consumer Saratovorgsintez increased purchases of merchant propylene from 171,349 tons in 2022 to 181,247 tons SIBUR-Khimprom at Perm increased purchases from 39,855 tons to 42,558 tons whilst Omsk Kaucuk increased purchases from 10,681 tons 33,637 tons. The increase in propylene purchases by Omsk Kaucuk was required to provide feedstock for the production of isopropanol. The Plant of Synthetic Alcohol at Orsk reduced purchases to 7,882 tons in 2022, all used in the production of isopropanol.

Russian Major Propylene Domestic Buyers (unit-kilo tons)		
Consumer	***Jan-Dec 23***	***Jan-Dec 22***
Saratovorgsintez	181.247	171.349
Volzhskiy Orgsintez	9.824	11.929
Akrilat	24.346	20.402
SIBUR-Khimprom	42.558	39.855
Omsk-Kaucuk	33.637	10.681
SIBUR Tobolsk	72.823	99.203

Propylene exports from Russia amounted to 55,934 tons in 2023 against 115,392 tons in 2022 and 156,400 tons in 2021. Lukoil-NNOS reduced export shipments from 65,861 tons to 26,345 tons whilst SIBUR-Kstovo shipped only 483 tons in 2023 versus 10,552 tons in 2022 and 17,900 tons in January-December 2021. Exports to Europe dropped in the second half of 2022, and by the end of the year China was almost the only destination for Russian shipments.

Russian Propylene Exports (unit-kilo tons)		
Consumer	***Jan-Dec 23***	***Jan-Dec 22***
Lukoil-NNOS	26.345	65.861
SIBUR-Kstovo	0.483	10.552
Omsk Kaucuk	0.000	17.260
Angarsk Polymer Plant	29.106	21.719
Total	55.934	115.392

Nizhnekamskneftekhim EP-600 cracker commissioning

Nizhnekamskneftekhim is aiming to start the commissioning its new EP-600 cracker in the first half of 2024, with a start-up of production by 2025. Tasks remain to be undertaken include the commissioning of compressors, pyrolysis furnaces and a steam turbine. The project configuration for the EP-600 cracker has altered since Nizhnekamskneftekhim was taken over by SIBUR from TAIF. Previously Nizhnekamskneftekhim wanted to make polypropylene from propylene at the PP-400 unit, but this part of the project appears to have been scrapped by SIBUR. One objective of the new cracker might be to supply more ethylene to Kazanorgsintez which requires further feedstock beyond its own production.

Kazanorgsintez Production Facilities (unit-kilo tons per annum)	
Product	**Capacity**
Ethylene	654
Ethylene consumption (LDPE, LLDPE and HDPE)	765
Ethylene deficit	111

Kazanorgsintez-ethylene deficit

The current capacity of the pyrolysis furnaces for the production of ethylene for Kazanorgsintez is 654,000 tpa. The polyethylene capacities of the HDPE and LDPE plants exceed the capabilities of the furnaces and can already produce 765,000 tpa. The difference of 111,000 tons of ethylene has always been covered by pipeline deliveries from NKNH and the Bashkir companies Ufaorgsintez and Gazprom neftekhim Salavat. In 2025 Kazanorgsintez aims to complete the modernisation of the reactor B of the HDPE plant, increasing capacity from 70,000 tpa to 220,000 tpa.

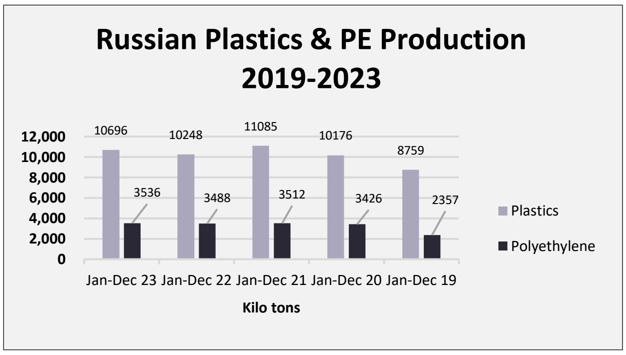
Kazanorgsintez Feedstock Configuration (unit-kilo tons per annum)	
Product	***Capacity***
Maximum ethane consumption	817.5
Ethane capacity Orenburg	420
Ethane capacity Minnibayevo	180
Ethane provided by Gazprom and Tatneft	540
Ethane deficit	277.5
Propane-butane replacement	444

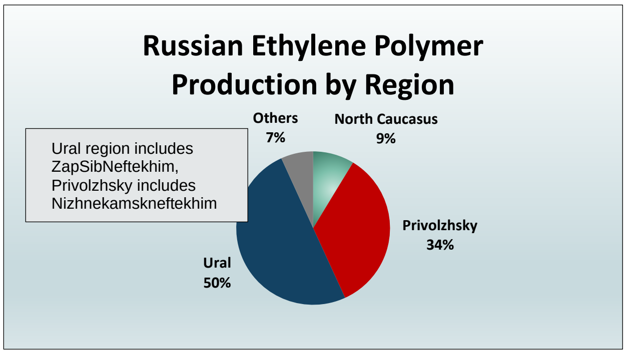
Overall, the capacity for HDPE will increase from 540,000 tpa to 690,000 tpa, and the total polyethylene capacity will jump from the current 765,000 tpa to 1 million tpa. The extra ethylene could be supplied from the new EP-600 cracker at Nizhnekamskneftekhim which could be on stream by 2025.

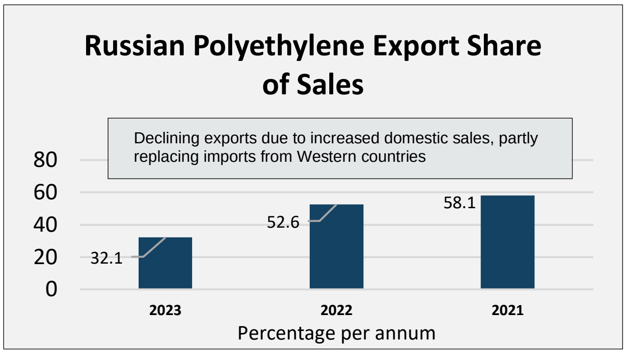
Amur Gas Chemical Complex-financing

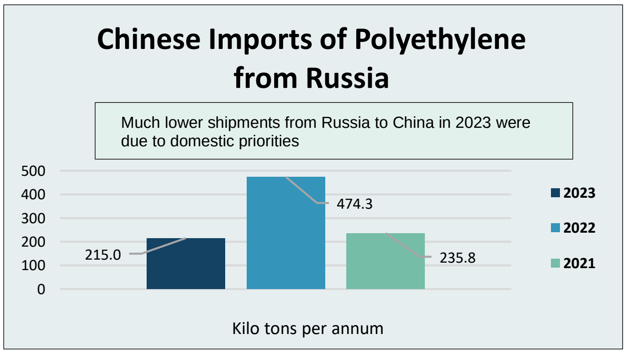
Following the withdrawal of Western banks from Russia, and the refusal of Chinese banks to lend money to Russia for the Amur Gas Chemical Project SIBUR as the majority shareholder has been forced to secure long-term project financing from Russian state funds. Chinese banks do not want to finance the project due to fears over secondary sanctions.

Russian bulk polymers









Russian plastics production Jan-Dec 2023
Russian bulk plastics production amounted to 10.696 million tons in January to December in 2023 against 10.248 million tons in 2022 and 11.085 million tons in 2021.

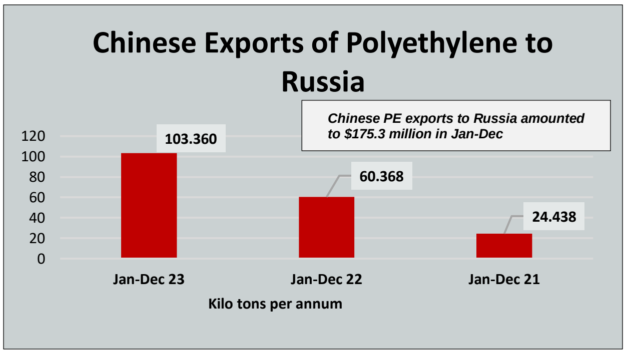
Polyethylene has been the leading product, whilst polyamide production has been affected by lower tyre consumption and also exports. PVC production has been affected lower construction in the domestic market but saw a recovery in the latter part of 2023.

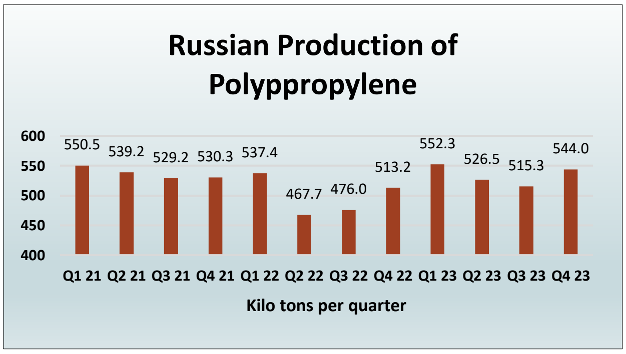
Polyethylene production amounted to 3.536 million tons in 2023 up from 3.488 million tons in 2022. Last year the polyethylene market recovered in 2023 after recording a decline in sales of 8.2% in 2022 over 2021. Deliveries of Russian-made polyethylene to the domestic market exceeded export sales for the first time. The shipment of polyethylene in 2023 amounted to 3.382 million tons, whilst at the same time only 1.106 million tons were exported. The share of export supplies of Russian-made polyethylene has declined over the past three years from 58.1% in 2021, 51.8% in 2022, and 32.6% in 2023.

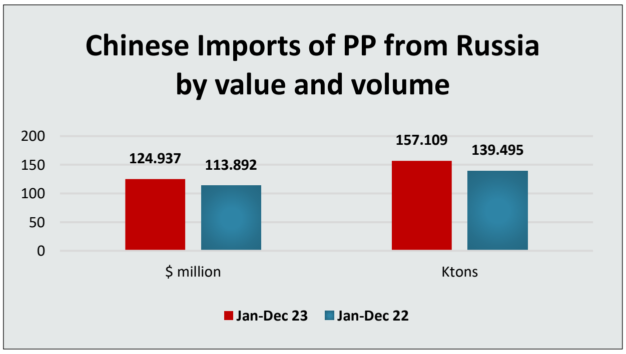
Russian polyethylene trade Jan-Dec 2023
Russian polyethylene exports to China dropped from 474,254 tons in January to December in 2022 to 215,033 tons in 2023, with values dropping from $388.0 million to $270.2 million. Export grades from Russia to China comprise mostly HDPE and LDPE. Export shipments peaked in August and September 2022 when a combined total of 165,800 tons were delivered to China. By contrast, exports dropped to 31,000 tons in the same two months in 2023.

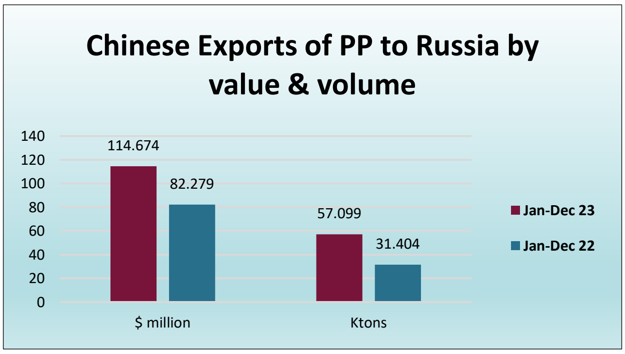
Inward shipments of polyethylene from China into Russia increased by value in 2023 to 103,360 tons versus 60,368 tons in 2022 and 24,438 tons in 2021. The most expensive grades of polyethylene included ethylene-vinyl acetate and ethylene-hexene copolymers. Average prices fell in 2023 to $1177.1 from $1675.9 in 2022 and $1542.4 in 2021.

In terms of trade balance Russia is still a net exporter of polyethylene to China both in volume and value, but the gap is narrowing. Imports from China amounted to $175.3 million in 2023 versus $86.9 million in 2022, reducing the positive trade balance from $301.1 million to $94.4 million. Overall, since the start of the war polyethylene trade has been adversely affected by sanctions and isolation from European markets. In 2022, total polyethylene exports from Russia decreased by 17.6%, following the sanctions on the import of ethylene polymers from Russia to the EU countries.









Hexene plant installation at Nizhnekamskneftekhim

Russia currently relies on imports of ethylene hexene copolymers, but this position could change after the completion of the new hexene plant under construction at Nizhnekamskneftekhim. The construction of the hexene unit is being carried out using SIBUR's own technology with 90% of the equipment produced in Russia.

The hexene-1 product produced will be used at SIBUR's production sites in the future as a comonomer to produce premium quality polyethylene. The capacity of the new hexene unit is 50,000 tpa. The overall progress of the project at the end of January was rated at 51.1%.

Russian polypropylene production Jan-Dec 2023

Russian polypropylene production totalled 2.175 million tons in 2023 versus 2.025 million tons in 2022. The forecast for 2023 had been established at 2.167 million tons. By quarter production of polypropylene in Russia performed relatively well in 2023, producing 544,000 tons in the fourth quarter against 513,200 tons in the same quarter in 2022. The second and third quarters in 2022 saw production drop to 467,700 tons and 476,000 tons respectively following the initial impact of war and sanctions on Russian producers. By producer ZapSibNeftekhim accounted for 52.1% of polypropylene production in 2023, whilst Nizhnekamskneftekhim took 17.9%.

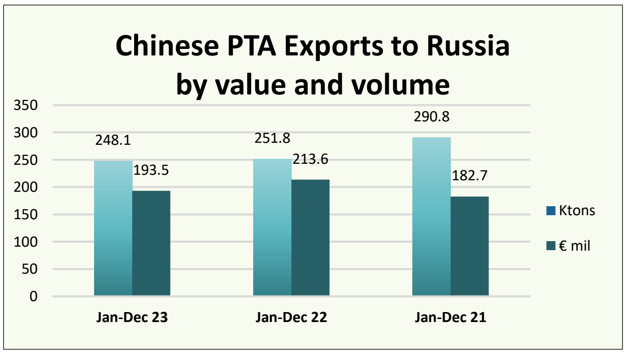
Russian-Chinese polypropylene trade Jan-Dec 2023

China increased export sales of polypropylene to Russia to 57,099 tons in 2023 against 31,404 tons in the same period in 2022. Import costs for Russia increased from $82.279 million to $114.674 million. Average prices amounted to $1898.5 per ton against $2045.6 in the corresponding period in 2022 and $1675.7 in 2021.

Exports of polypropylene from Russia to China amounted to 157,109 tons in 2023 against 70,054 tons in 2022. Average prices fell from $1158.4 per ton to $813.8 per ton. Despite the lower prices in 2023 the more than doubling of volumes meant that revenues for Russian exports increased from $82.279 million to $114.674 million.

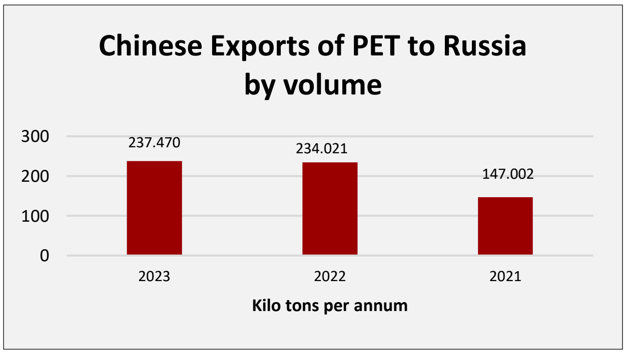
In 2022, polypropylene exports decreased by 12.4% under the influence of the imposed ban on the import of Russian polypropylene to the EU region. In 2022, supplies to Poland and Ukraine, as well as to Vietnam, decreased by the largest amount. At the same time an increase in supplies to Turkey, China and Uzbekistan helped to avoid a more significant drop in exports.

Russian PTA-PET



Russian PTA imports Jan-Dec 23
Russian PTA imports from China in 2023 amounted to 248,117 tons versus 251,817 tons in 2022 and 290,756 tons in 2021. Last year values of imports amounted to $193.5 million in against $213.6 million in 2022 and $182.7 million in 2021. Nearly all of the PTA imports from China were shipped to Ekopet at Kaliningrad by rail. PTA import prices averaged $779.8 2023, down from $848.2 in 2022 and up from $628.3 in 2021.

Russian PET trade Jan-Dec 23
Russian import costs of PET from China amounted to $217.293 million in 2023 against $237.128 million in 2022 and $135.609 million in 2021. By volume imports increased from 234,021 tons to 237,470 tons in January to December 2023. Average prices dropped last year in line with lower feedstocks costs, amounting to $914.4 per ton against $1114.9 per ton. However, they were higher than in 2021 when numbers amounted to $907.2 per ton.



Russian PET imports from China in the whole of 2022 amounted to a total of 238,000 tons, which is 34.7% more than in 2021. As a result, the share of Chinese PET in total Russian imports increased from 84% to 95%. Russia imported 194,260 tons of PET from China in 2021 for $194.690 million, whilst Import values rose to $296.478 million.

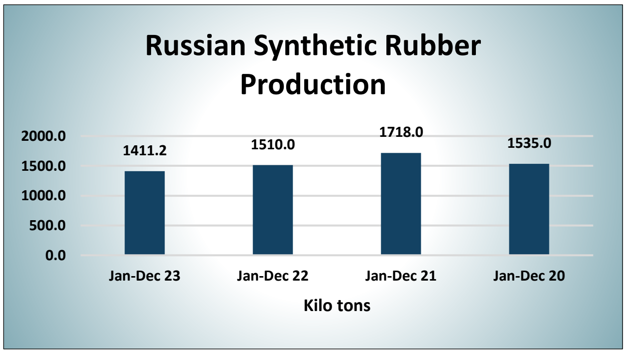
Titan-Polymer opens second line for BOPET
The Titan-Polymer plant in the Moglino special economic zone has completed commissioning work on the second line for the production of BOPET films. The company has already received orders for various film thicknesses from 8 to 35 microns. The launch of the second line is an important production stage for the plant, which makes it possible to reach the maximum design capacity for BOPET film of 72,000 tpa.

Tatneft-PTA project
The Investment Council of Tatarstan has approved the project for the production of PTA at Nizhnekamsk. The total investment will amount to about 91.2 billion roubles ($1.031 billion at current exchange rates), with a project construction period lasting five years. At the moment, there is only one PTA production facility in Russia at the Polief plant (part of SIBUR). In December 2022, Taneko launched the production of aromatic hydrocarbons in the mode of comprehensive testing.

PTA project for Tatarstan
- PTA plant to be constructed at Nizhnekamsk.
- Project capacity was previously 600,000 tpa
- Capacity is now expected to be much lower
- PX capacity at Taneko refinery 150,000 tpa
- PTA intended for Ekopet at Kaliningrad

Previous plans to construct PTA and PET facilities in Tatarstan were considered in 2016 under SafPet but were cancelled due to a lack of financial backing. Tatneft revived the concept in 2021 with plans to construct a plant with a capacity of 600,000 tpa. in 2022 the project appeared to have stalled but this year it has returned to the investment table. In addition to meeting Ekopet's demand for PTA Tatneft wants to use PTA for producing polyester fibre in Tatarstan. In June 2023 a Russian polyester fibre plant started at Shakhty near Rostov with a capacity of 72,000 tpa. This plant has already started using PTA and MEG. Despite the ambitious plans there are still big challenges in relation to technology and financing.

Synthetic rubber



Russian synthetic rubber production Jan-Dec 2023

Synthetic rubber production in Russia amounted to 1.411 million tons in January to December 2023 against 1.510 million tons in 2022 and 1.718 million tons in 2021. Production tended to stabilise in the latter part of 2023 but is still much lower than prior to the Russian invasion of Ukraine.

Russian C4s Jan-Dec 2023

Regarding C4 supplies, Togliattikaucuk reduced purchases from 177,800 tons in 2023 to 160,200 tons 2023 whilst Nizhnekamskneftekhim increased purchases from 96,100 tons to 136,400 tons.

Russian C4 Purchases (unit-kilo tons)		
Consumer	***Jan-Dec 23***	***Jan-Dec 22***
Omsk Kaucuk	99.0	101.6
Nizhnekamskneftekhim	136.4	96.1
Togliattikaucuk	160.2	177.8
Sterlitamak Petrochemical Plant	5.1	11.8
Total	400.7	387.3

Overall merchant sales of C4s on the Russian domestic market amounted to 400,700 tons in 2023 against 387,300 tons in January to December 2022. SIBUR-Kstovo increased shipments from 84,800 tons to 105,800 tons whilst Gazprom neftekhim Salavat reduced shipments from 65,600 tons to 11,700 tons. Tomskneftekhim increased shipments of C4s in 2023 to 91,400 tons against 78,600 tons in 2022.

Russian Butadiene Production (unit-kilo tons)		
Producer	***Jan-Dec 23***	***Jan-Dec 22***
ZapSibNeftekhim	258.704	278.290
Nizhnekamskneftekhim	189.344	225.020
Togliattikaucuk	43.361	48.095
Sterlitamak Petrochemical Plant	21.632	25.618
Omsk Kaucuk	37.885	37.245
Total	550.926	614.267

Russian butadiene production Jan-Dec 2023

Russian butadiene production totalled 550,926 tons in 2023 against 614,267 tons in 2022. The largest producers ZapSibNeftekhim and Nizhnekamskneftekhim both showed lower production as 2022 progressed. ZapSibNeftekhim produces butadiene only for merchant market sales whilst Nizhnekamskneftekhim processes most of its butadiene into rubber SKD-N and SKD-L are butadiene rubbers based on neodymium and lithium catalysts.

Russian synthetic rubber production by region

The most important region for synthetic rubber production in Russia is the Privolzhsky or Volga region where Nizhnekamskneftekhim and Togliattikaucuk are based. Production for these two producers totalled 1.017 million tons in 2023 against 1.115 million tons in 2022 and 1.260 million tons in 2021.

Russian Synthetic Rubber Production by Region (unit-kilo tons)			
Region	***2023***	***2022***	***2021***
Central	284.4	289.9	346.8
Privolzhsky	1016.8	1114.8	1259.6
Siberia	109.2	105.932	110.5
Others	0.836	0.059	1.254
Total	1411.2	1510.8	1718.2

Nizhnekamskneftekhim had set a target of raising synthetic rubber capacity by 2025 to 1 million tpa, but due to external events such as the pandemic and now sanctions capacity remains around the current 800,000 tpa. Rubbers have traditionally provided 35-40% of all proceeds for Nizhnekamskneftekhim and 80% of the company's foreign exchange earnings.

Voronezhsintezkaucuk, located in Central Russia, produced a total of 284,430 tons of synthetic rubber in 2023 against 289,948 tons in 2022. Omsk Kaucuk in Siberia increased production of synthetic rubber from 105,932 tons to 109,163 tons although this figure was slightly lower than the 110,479 tons achieved in 2021.

Russian synthetic rubber market 2023

The market is still under pressure from the unstable situation in one of the main segments of rubber consumption which is the production of tyres. Rubber consumption in tyre production amounted to 305,600 tons in 2023 against 334,600 tons in 2022 and 443,500 tons in 2021.

Russian Tyre Production (unit-kilo tons)			
Product	***Jan-Dec 23***	***Jan-Dec 22***	***Jan-Dec 21***
Car Tyres	242.2	273.8	374.6
Lorry tyres	53.2	50.3	55.5
Agricultural tyres	10.3	10.5	13.3
Total	305.6	334.6	443.5

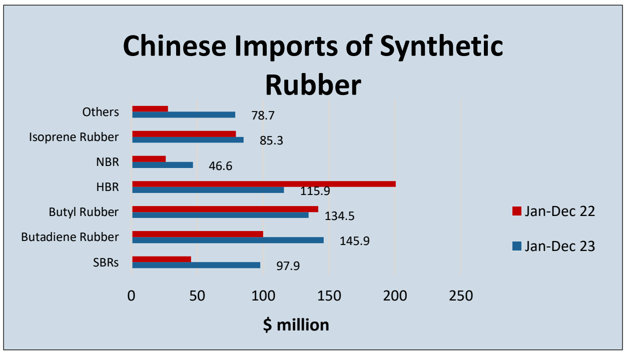
The decline in tyre production over the past two years has been not only to the failure of the Russian car market, but also to the withdrawal of international tyre manufacturers from Russia. Products manufactured at Russian factories also went to the European market. After the shutdown of production and the withdrawal of international companies, exports also stopped. The new owners of the plants announce the resumption of production and entry into new markets, but the results of this work may only be noticeable only by the end of 2024.

Russian Chinese rubber trade Jan-Dec 2023

Russian exports of synthetic rubber to China totalled $519.68 million in the period January to December 2023 against $423.611 million in 2022. By volume Russian shipments amounted to 371,043 tons in 2023 versus 239,519 tons in 2022.

Chinese Synthetic Rubber Imports from Russia (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
SBRs	65.726	19.975
Butadiene Rubber	78.887	32.523
Butyl Rubber	71.267	65.167
HBR	41.741	53.193
NBR	24.290	9.084
Isoprene Rubber	42.292	43.307
Others	46.839	16.269
Total	371.043	239.519

By volume butyl rubber exports from Russia to China increased from 65,187 tons in January to December 2022 to 71,267 tons in the same period this year. Butadiene rubber exports increased from 32,523 tons to 78,887 tons whilst SBS grade SBRs increased from 19,975 tons to 65,726 tons. Only halogenated butyl rubber exports recorded a significant fall, dropping from 53,193 tons to 41,741 tons. Nitrile-butadiene rubber shipments increased from 9,084 tons to 24,290 tons.



By value butyl rubber exports from Russia to China dropped slightly from $109.303 million in January to December 2022 to $108.097 million in the same period this year. Butadiene rubber exports increased from $55.376 million to $99.247 million whilst SBS grade SBRs increased from $29.070 million to $77.529 million. Halogenated butyl rubber exports recorded a significant fall, dropping from $130.137 million to $84.093 million. Nitrile-butadiene rubber shipments increased from $9,359 million to $34.161 million.

Roskhim completes reorganisation of Sterlitamak rubber plants

Roskhim has completed the reorganisation of the Sintez-Kaucuk by merging it with the Sterlitamak Petrochemical Plant (SNHZ). From 1 February 2024 all the rights and obligations of Sintez-Kaucuk were transferred to SNHZ by way of universal succession. All products manufactured by Sintez-Kaucuk will be produced under the SNHZ brand. The process of reorganisation of two industrial giants specializing in the production of products for the petrochemical and rubber industries was launched in September 2023.

The merger of the enterprises will provide an opportunity to build a full production cycle for the production of products for petrochemicals and rubber goods. It is implied that the unified strategy of the enterprises will ensure the compliance of the products of the SNHZ enterprises with the high requirements of the petrochemical and tyre industries and will allow for a quicker response to changes in market conditions.

Methanol

Russian Methanol Production (unit-kilo tons)		
Producer	***Jan-Dec 23***	***Jan-Dec 22***
Shchekinoazot	1249.156	1512.827
Gazprom Methanol	646.430	722.470
Metafrax Chemicals	1126.854	1182.025
Akron	92.078	95.175
Azot Novomoskovsk	9.320	191.670
Angarsk Petrochemical	24.882	31.456
Azot Nevinnomyssk	116.670	113.533
Tomet	475.962	469.560
Ammoni	82.936	92.378
Ural/Novatek	66.190	65.620
Totals	3890.477	4476.714

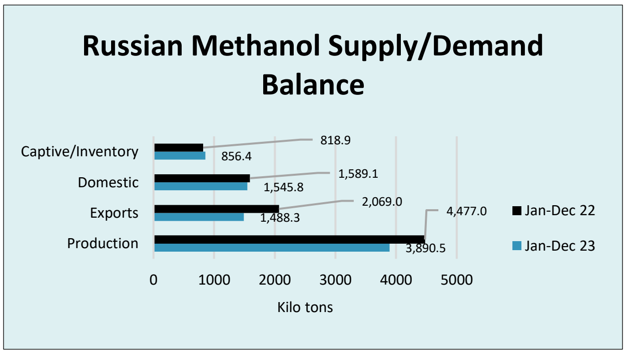
Russian methanol production Jan-Dec 2023

Russia produced 3.890 million tons of methanol in 2023 against 4.477 million tons in the same period in 2022. With some minor exceptions producers reported lower production volumes in 2023.

Exports were down significantly last year against 2022, whilst domestic merchant market sales also declined despite the recovery in the second half of 2023.

The decline in merchant market sales was offset by an increase in internal processing at several producers, mainly driven by a recovery in formaldehyde production.

Russia's largest producer Shchekinoazot reduced production from 1.513 million tons to 1.249 million tons. At Togliatti Tomet produced 475,962 tons of methanol in January to December 2023 versus 469,560 tons in 2022. Gazprom Methanol reduced production from 722,470 tons in the period January to December 2022 to 646,430 tons whilst Metafrax reported a fall from 1.182 million tons to 1.127 million tons.



Regarding the smaller producers Azot at Nevinnomyssk increased production from 113,533 tons whilst Azot at Novomoskovsk was idle for most of the year and production fell from 191,670 tons to 9,320 tons. Azot at Nevinnomyssk uses methanol mostly for internal consumption, whilst Azot at Novomoskovsk is dependent solely on the merchant market. Both companies belong to the Evrokhim Group. Other plants where methanol is consumed internally include Akron, Angarsk Petrochemical and Novatek. Akron uses methanol for formaldehyde production, Angarsk Petrochemical uses methanol for MTBE and Novatek uses methanol for gas processing.

Russian Methanol Exports by Producer (unit-kilo tons)		
Producer	***Jan-Dec 23***	***Jan-Dec 22***
Azot Nevinnomyssk	9.877	4.511
Azot Novomoskovsk	64.112	72.834
Akron	0.000	4.885
Metafrax Chemicals	348.839	467.943
Gazprom Methanol	347.131	311.655
Tomet	122.573	121.498
Shchekinoazot	595.854	1084.171
Ammoni	0.000	1.470
Total	1488.387	2068.967

Russian methanol exports Jan-Dec 2023

Russian methanol exports amounted to 1.488 million tons in 2023 versus 2.069 million tons in 2022. Shchekinoazot reduced exports from 1.084 million tons to 595,854 tons whilst Metafrax Chemicals reduced shipments from 467,943 tons to 348,839 tons. Tomet exported 122,573 tons versus 121,458 tons in 2022. Gazprom Methanol increased exports in 2023 to 347,131 tons from 311,655 tons.

China accounted for 52.23% of Russian exports in January to December last year, amounting to a total of 781,917 tons versus 164,302 tons in 2022. Prior to 2022 Russian export trade to China was non-existent due to such a range of factors as distances, terminal facilities, and profit margins.

By contrast to China in 2023 exports to Finland declined from 702,518 tons in 2022 to 106,441 tons. After the introduction of sanctions on 7 October 2022 no shipments to the EU were allowed after 24 June 2023. Exports to Poland, either by rail or ship, fell from 450,759 tons in 2022 to 126,002 tons.

Rail deliveries to Central-East Europe to traditional markets such as Hungary, Slovakia and Romania have obviously been not possible since the Russian invasion of Ukraine.

Russian Methanol Exports to China by Producer 2023			
Exporter	***Total***	***China***	***%***
Azot Nevinnomyssk	9.877	0.000	0.0
Azot Novomoskovsk	64.112	0.000	0.0
Metafrax	348.839	209.122	59.9
Gazprom Methanol	347.131	345.242	99.5
Tomet	122.573	93.219	76.1
Shchekinoazot	595.854	134.334	22.5
Total	1488.387	781.917	52.5

Although China has replaced Finland as Russia's main export destination for methanol exports, most of the Russian methanol plants are located in the western parts of the country which means that the freight distances are much larger and costlier than to the EU markets. In addition, Chinese consumers are paying relatively low prices for Russian product, and thus any advantage of low domestic gas prices is quickly eroded for Russian methanol producers. Even with the mostly easterly of the Russian plants at Tomsk in Siberia freight costs to the Russian Far East ports raise questions about profitability. As with many aspects of the rise in Sino-Russian trade in the past two years, China buys from Russia because of price advantage whilst Russia sells to China because it has limited alternatives

By quarters in 2023 the fourth saw the lowest volumes, amounting to 282,549 tons compared to 314,162 tons in the third, 444,089 tons in the second and 447,587 tons in the first. In summary, 60% of the full year's total exports were transhipped in the first half of 2023.

Russian methanol exports to Belarus decreased to 128,495 tons in January to December 2023 against 238,548 tons in January to December 2022. Exports to Kazakhstan in 2023 increased to 53,301 tons from 38,629 tons in 2022 whilst more significantly shipments to Poland dropped from 450,759 tons to 126,002 tons.

China's imports from Russia were valued at $159.165 million for shipments in the whole of 2023. In terms of product pricing Russian shipments to China averaged $276.914 per ton over the period January to December 2023. These prices test profit margins for Russian producers which are facing much higher logistics costs to China than to European markets.

Russian Methanol Exports by Destination (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Belarus	128.495	238.548
China	781.917	164.302
Finland	106.441	702.518
Germany	5.265	5.145
Kazakhstan	53.301	38.629
Latvia	1.230	62.693
Lithuania	9.019	60.299
Netherlands	20.814	137.072
Poland	126.002	450.759
Romania	0.000	26.488
Slovakia	0.000	49.035
Turkey	245.673	111.365
UK	0.000	8.398
Ukraine	0.000	11.916
Others	0.004	1.727
Total	1488.387	2068.896

Gazprom Methanol at Tomsk showed the greatest dependency on the Chinese marker for exports in 2023, accounting for 99.5% of all shipments. Tomet was the second placed exporter in terms of percentage shipments going to China, which amounted to 76% of the company's total exports, followed by Metafrax Chemicals which shipped 59.9% of its exports.

The two Azot plants at Nevinnomyssk and Novomoskovsk, which belong to the Evrokhim group, did not export to China in 2023 and will concentrate on shipments to Turkey through the ports of Kavkaz and Temyruk. Most of the exports to China are conducted through the port of Nakhodka-Vostochny, accounting for 96% of shipments in 2023. The other route used by Russian producers is Zabaikalsk which is located on the border with China.

Russian methanol domestic sales, Jan-Dec 2023

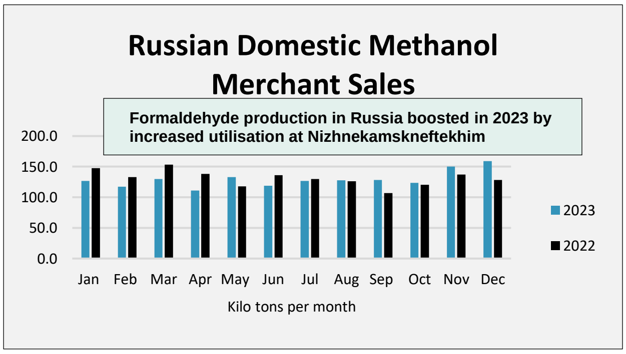
Domestic merchant sales dropped only slightly in 2023 from 2022, amounting to 1.553 million tons versus 1.589 million tons. Up until August merchant sales were consistently lower on a monthly basis compared to 2022, but from September onwards sales increased. Domestic shipments were quite strong in November and December against the same months in 2022.

Russian Methanol Domestic Sales (unit-kilo tons)		
Producer	***Jan-Dec 23***	***Jan-Dec 22***
Azot Nevinnomyssk	7.010	16.510
Azot Novomoskovsk	16.122	124.066
Metafrax Chemicals	502.957	419.557
Gazprom Methanol	291.351	354.260
Tomet	311.440	322.500
Shchekinoazot	391.683	303.092
Ammoni (Mendeleevsk)	32.087	49.152
Total	1552.650	1589.136

Domestic merchant sales helped methanol producers offset lower exports enabling plants to operate at reasonable levels of utilisation.

Metafrax Chemicals increased domestic merchant sales to 502,957 tons in 2023 against 419,557 tons in 2022, whilst Gazprom Methanol reduced domestic shipments from 354,260 tons in January to December 2022 to 291,351 tons in 2023. Previously formaldehyde was produced by Gazprom Methanol, but the assets were sold in 2021. From 1 February 2024 Metafrax became part of the Roskhim state holding which manages a number of chemical companies where assets have been stripped from the owners.

Sales for Tomet on the domestic market fell from 322,500 tons in 2022 to 311,440 tons in 2023. The largest domestic consumer for Tomet is Togliattiazot where methanol is used for the production of urea-formaldehyde concentrate. Togliattiazot produced 63,750 tons of urea-formaldehyde concentrate in 2023 against 37,548 tons in 2022.



Shchekinoazot increased domestic methanol sales from 303,092 tons in 2022 to 391,683 tons in January to December 2023. The increase only partly offset the loss of export volumes. Overall, the company faces the largest challenges amongst the Russian producers having expanded its capacity to 1.45 million tpa in September 2021.

Russian formaldehyde production 2023

Shchekinoazot increased the production of formaldehyde in 2023 to 32,654 tons against 31,260 tons in 2022. Overall Russian formaldehyde production increased from 753,519 tons to 844,927 tons. The rise can be attributed mostly to the increase in production at Nizhnekamskneftekhim, amounting to 179,404 tons against 73,393 tons in 2022. Capacity for formaldehyde production was increased at Nizhnekamsk to 250,000 tpa in 2021. Nizhnekamskneftekhim uses formaldehyde internally for the production of isoprene monomer.

Russian Formaldehyde Production (unit-kilo tons)		
Producer	***Jan-Dec 23***	***Jan-Dec 22***
Pigment	36.572	36.245
Shchekinoazot	32.654	31.260
Akron	133.063	129.056
Metafrax	320.497	352.683
Sverdlov Plant	3.596	13.691
Khimsintez	54.764	39.091
Uralkhimplast	49.918	43.265
Nizhnekamskneftekhim	179.404	73.393
Metadynea	34.460	34.835
Total	844.927	753.519

Other producers showed either minor declines or increase in 2023, and mostly markets tended to stabilise after the volatility in 2022. Besides Shchekinoazot the other methanol producers producing formaldehyde include Metafrax Chemicals and Akron.

The production of urea formaldehyde resins totalled 1.080 million tons against 1.022 million tons in 2022, although that does compare against 1.344 million tons in 2021. The production of phenol-formaldehyde resins increased from 413,564 tons in 2022 to 415,134 tons in 2023 which compares against 509,485 tons in 2021.

Organic chemicals

Russian N-Butanol Production (unit-kilo tons)		
Producer	***Jan-Dec 23***	***Jan-Dec 22***
Angarsk Petrochemical company	29.220	32.345
Azot Nevinnomyssk	19.726	18.245
Gazprom neftekhim Salavat	68.621	72.743
SIBUR-Khimprom, Perm	31.030	30.823
Total	148.596	154.156

Russian Isobutanol Production (unit-kilo tons)		
Producer	***Jan-Dec 23***	***Jan-Dec 22***
Angarsk Petrochemical Company	23.545	22.216
Gazprom neftekhim Salavat	37.599	35.345
SIBUR-Khimprom, Perm	75.180	57.468
Total	136.323	115.029

Russian butanol production Jan-Nov 2023

Russian normal butanol production dropped from 154,156 tons in January to December 2022 to 137,243 tons in January to December 2023. Gazprom neftekhim Salavat was the largest Russian producer, reducing volumes to 68,621 tons from 72,743 tons in 2022.

Isobutanol production in Russia increased from 115,029 tons to 136,323 tons in January to December 2023. Gazprom neftekhim Salavat increased production from 35,345 tons to 37,599 tons, whilst SIBUR-Khimprom increased production from 57,468 tons to 75,180 tons.

Russian Butanol Exports (unit-kilo tons)		
N-Butanol	***Jan-Dec 23***	***Jan-Dec 22***
Gazprom neftekhim Salavat	9.239	2.603
SIBUR-Khimprom	0.000	0.746
Angarsk Petrochemical	7.110	2.076
Azot Nevinnomyssk	1.131	1.819
Dmitrievsky Chemical Plant	0.000	2.068
Total	17.480	9.312
Russian Butanol Exports (unit-kilo tons)		
Isobutanols	***Jan-Dec 23***	***Jan-Dec 22***
Gazprom Neftekhim Salavat	6.496	28.331
SIBUR-Khimprom	16.130	16.593
Angarsk Petrochemical	0.118	2.770
Dmitrievsky Chemical Plant	1.877	0.498
Total	24.621	48.191

Normal butanol exports from Russia rose from 9,312 tons in 2022 to 17,480 tons in 2023, including an increase in shipments by Gazprom neftekhim Salavat from 2,603 tons to 9,239 tons.

Isobutanol exports fell from 48,191 tons in January to December 2022 to 24,621 tons in 2023. Gazprom neftekhim Salavat reduced shipments from 28,331 tons to 6,496 tons whilst SIBUR-Khimprom reduced shipments from 16,593 tons to 16,130 tons.

Russian solvent production Jan-Nov 2023

Russian acetone production increased from 144,467 tons in in 2022 to 158,232 tons in 2023. Omsk Kaucuk produced 37,101 tons of acetone against 27,379 tons in the previous year whilst Kazanorgsintez produced 51,259 tons against 55,543 tons. The other two producers Ufaorgsintez and Novokuibyshevsk Petrochemical Combine both increased production in 2023. Whilst increases have been recorded in production exports fell from 56,620 tons in 2022 to 7,118 tons in 2023.

Russian Acetone Production (unit-kilo tons)		
Producer	***Jan-Dec 23***	***Jan-Dec 22***
Ufaorgsintez	34.426	33.470
Kazanorgsintez	55.543	51.259
Novokuibyshevsk Petrochemical	31.162	32.359
Omsk Kaucuk	37.101	27.379
Total	158.232	144.467

Russian acetic acid production amounted to 195,285 tons in January to December 2023 against 205,715 tons in 2022. The largest producer in Russia Azot at Nevinnomyssk reduced production from 164,934 tons to 158,661 tons. Aside using acetic acid for the production of butyl acetate and methyl acetate Azot supplies merchant acetic to the Russian domestic market. The two largest customers include Polief which purchases acetic acid for PTA and Stavrolen which uses acetic acid in the production of vinyl acetate monomer (VAM).

Russian Acetic Acid Production (unit-kilo tons)		
Producer	***Jan-Dec 23***	***Jan-Dec 22***
Azot Nevinnomyssk	158.681	164.934
Others	36.604	40.778
Total	195.285	205.712

VAM is exported from Stavrolen in quantities of around 2,000 tons per month, most of which goes to Turkey. Some shipments were previously sent to Finland which has now stopped.

Russian Isopropanol Production (unit-kilo tons)		
Producer	***Jan-Dec 23***	***Jan-Dec 22***
Sintez-Acetone	0.000	0.057
Plant of Synthetic Alcohol	32.454	16.169
Omsk Kaucuk	35.917	29.54
Total	68.371	45.765

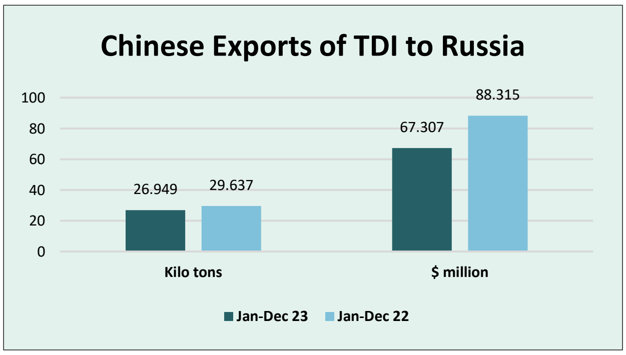
Isopropanol production in Russia amounted to 68,371 tons in 2023 against 45,765 tons in January to December 2022. Omsk Kaucuk increased production from 29,540 tons to 35,917 tons whilst the Plant at Synthetic Alcohol at Orsk increased from 16,169 tons to 32,454 tons. Omsk Kaucuk only started isopropanol production in 2020 and only achieved high utilisation rates in 2023. Regarding other producers Sintez-Acetone's isopropanol unit at Dzerzhinsk was largely idle in 2023, although other parts of the company had been operating normally. An explosion at Sintez-Acetone took place in the middle of December during the process of trying to restart the isopropanol plant.

Russian Exports of Organic Chemicals to China (unit-kilo tons)		
Product	***Jan-Dec 23***	***Jan-Dec 22***
Propylene	40.264	48.558
Methanol	759.624	137.315
N-Butanol	6.956	9.007
Isobutanol	11.683	3.824
Methyl Acrylate	3.837	0.400
Butyl Acrylate	6.977	4.960
Caprolactam	149.722	71.818

Russian exports of organic chemicals to China Jan-Dec 2023

Russian exports of commodity chemicals to China increased for both methanol and caprolactam but saw falls in normal butanol shipments and propylene. Methanol saw the largest volumes, rising from 137,315 tons to 759,624 tons whilst caprolactam exports from Russia increased from 71,818 tons to 149,722 tons. The loss of EU markets has been a major factor in leading to more Sino-Russian trade in chemicals, despite the high logistics costs.

Russian polyurethane raw materials



Isocyanate/polyol imports from China into Russia

TDI imports from China into Russia decreased from 29,637 tons in January to December 2022 to 21,184 tons in the same period in 2023 whilst MDI imports increased from 54,331 tons to 95,940 tons.

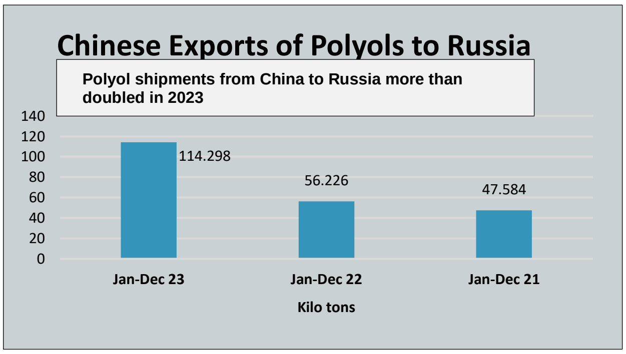
TDI prices fell from $2979.9 per ton in January to December 2022 to $2497.6 per ton in 2023 whilst MDI prices fell from $2162.4 per ton to $1975.7. Due to lower prices costs and lower volumes the costs of TDI imports dropped from $88.315 million to $26.949 million.

MDI costs from imports from China into Russia increased from $166.391 million in 2022 to $228.069 million in 2023 as volumes increased from 65,320 tons to 117,324 tons. Almost all polyurethane production in Russia is based on imported material, and industrial facilities are located in general production facilities and in Russian factories.

Polyol imports into Russia from China increased from 59,226 tons in 2022 to 114,298 tons in 2023. Import costs rose from $94.504 million in 2022 to $173.167 million. Average prices fell from $1680.8 per ton to $1515.1 in 2023. The general perception of instability in the industry remains, but although market participants are gradually returning to discussing prospects and investment projects.

Roskhim takes control of Volzhsky Orgsintez

State controlled chemical holding Roskhim has taken over management of Volzhsky Orgsintez which was nationalised in September 2023. The entry in the Unified State Register of Legal Entities was made on 30 January. Last year Russian courts ensured that the privatisation of assets in the 1990s was re-examined for Volzhsky Orgsintez, from which it was decided that some degree of nefarious activity had been involved thus rendering ownership void. Volzhsky Orgsintez produces a range of organic chemicals including methionine, N-methylaniline, carbon disulphide, aniline, flotation reagents, and sodium sulphate.



Over the past few months SNHZ has been merged with Sintez-Kaucuk into one entity. Sterlitamak Petrochemical Plant and Sintez-Kaucuk produce diversified products of low-tonnage chemicals, including phenolic antioxidants under the trademark Agidol, neodymium polyisoprene rubbers of the SKI-5 and SKI-5PM brands. After the merger, all products manufactured at industrial sites will be marked with the production of SNHZ.

Roskhim Holding-Assets and Product Range		
Product	***Location***	***Product range***
Titanium Investments	Crimea	Titanium Dioxide
Bashkir Soda	Sterlitamak	Soda Ash, PVC
Kuchuksulphate	Blagoveshchensk	Sodium Sulphate
Metafrax Chemicals	Gubakha	Methanol
SNHZ	Sterlitamak	Rubber, antioxidants
Volzhsky Orgsintez	Volzhsky	Organic Chemicals

Roskhim take control of Metafrax Chemicals

Roskhim was appointed as the managing organisation of Metafrax Chemicals, 95.88% of the shares of which were transferred to the Federal Agency for State Property Management by the decision of the Arbitration Court of the Perm Territory. Metafrax Chemicals will retain the powers of the management organisation in relation to its subsidiaries.

From 1 February 2024, Roskhim was appointed as the management organisation of Metafrax Chemicals. The corresponding decision was made at the extraordinary general meeting of shareholders of Metafrax Chemicals. Metafrax Chemicals came under the control of the state in October 2024 by a court decision at the request of the Prosecutor General's Office.

The latter challenged the results of the privatisation of the enterprise through the court, which, according to the department, was carried out illegally.

Sterlitamak Petrochemical Plant-new antioxidants

The Sterlitamak Petrochemical Plant (SNHZ) has undertaken research and development work on the development of a technology for producing a new phenolic antioxidant which has been named Agidol-110. This new product is particularly effective against product degradation during long-term aging and as a stabilizer of the high-temperature processing process. Agidol-110 is used as a highly effective antioxidant and non-staining heat stabilizer for rubbers and latex; polymers (polyolefins and olefins, such as HDPE, LLDPE, polypropylene, as well as polycarbonates, and ABS plastics.

Kazakhstan-Central Asia

Atyrau refinery to restart aromatics production

The Atyrau Oil Refinery plans to restart production of paraxylene and benzene in the first quarter this year, after stopping last year due to disadvantageous pricing.

Kazakh Aromatics Production (unit-tons)		
Product	***2023***	***2022***
Paraxylene	18.0	76.0
Benzene	1.2	6.452

Paraxylene production at the Atyrau refinery in 2023 amounted only to 18,000 tons against a planned target of 208,391 tons. Production amounted to 76,000 tons in 2022, and benzene 6,452 tons. Traders note that the restart of the aromatics plant will improve the profitability of oil refining for the Atyrau refinery. Paraxylene from the Atyrau refinery is exported through a terminal in Kulevi on Georgia's Black Sea coast with subsequent delivery by sea to China.

Kazakh Exports of PP to China		
	Jan-Dec 23	***Jan-Dec 22***
Kilo tons	106.326	3.218
$ million	82.639	2.457

The discount for Kazakh paraxylene on the basis of the Parto-Tskali railway station near Kulevi to the CFR Taiwan/China quotation in January is about $300-$320 per ton, according to traders. Quotations in Asia on a FOB Korea basis are $1,000 per ton in mid-January.

Chinese Exports of PET to Uzbekistan and Kazakhstan (unit-kilo tons)		
Country	***Jan-Dec 23***	***Jan-Dec 22***
Kazakhstan	68.968	63.013
Uzbekistan	111.408	96.125

Central Asian PET projects

Regarding PET projects in Central Asia KazMunaiGaz (KMG) and Sinopec signed an agreement in 2023 to develop a pre-feasibility study for a project for the production of PTA and PET at Atyrau with a production capacity of up to 735,000 tpa.

The Methanol to Olefins (MTO) project under construction in Uzbekistan also includes a plant for 300,000 tpa of PET. Ethylene glycol will also be produced at the new complex, with PTA probably to be sourced from Kazakhstan. The PET project is based on an agreement with Chemtex from North America which is building a plant for textile and bottle grade polymer.

PET projects in Kazakhstan and Uzbekistan are aimed at meeting domestic demand which has been increasing in recent years. Kazakhstan increased imports of PET from China in 2023 to 68,968 tons against 63,013 tons in 2022, whilst Uzbekistan increased imports from 96,125 tons to 111,408 tons.

Linde could undertake construction Kazakh polyethylene project plus financing

Kazakhstan has engaged Linde to construct the polyethylene of 1.25 million tpa, consisting of two units of 625,000 tpa. In accordance with previous agreements, Linde is developing an advanced basic design for ethane cracking and air separation plants (nitrogen, process air) used in the production of polyethylene on the basis of its own technology. The two polyethylene units have been licensed to Chevron Phillips and Univation.

KazMunayGaz (KMG) and Germany's Euler Hermes have agreed to cooperate in raising financing for the construction of a polyethylene plant. German contractors are involved in the project which could complicate the involvement of SIBUR. The polyethylene complex with a capacity of 1.25 million tpa is planned to be located next to the polypropylene plant in the Karabatan special economic zone of the Atyrau region. Finished products are planned to be sent to the domestic market and for export. The capacity of the domestic market amounts to around 180,000 tpa with an annual growth rate of roughly 4%. The remaining volumes will be exported, including the CIS countries and China.

Kazakhstan plans to attract more than $8 billion of investments in large petrochemical projects. The main project currently under construction involves the plant for the production of butadiene and its derivatives with a capacity of up to 340,000 tpa. The bigger project, which has still not started, consists of the 1.25 million tpa polyethylene plant. Investments in the amount of about $8.6 billion will be attracted, of which $7.7 million will be allocated to the polyethylene plant, and $900 million to the butadiene plant.

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