

CIREC

MONTHLY NEWS

Chemical Industry News for Central Europe, South East Europe and Eurasia

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Key points from this month's issue

Central European petrochemical markets

- PKN Orlen has launched its metathesis installation at Plock, consisting of a capacity of 100,000 tpa, raising total propylene capacity to 550,000 tpa.
- Basell Orlen Polyolefins (BOP) at Plock has completed the expansion of its polypropylene plant, representing the largest investment project at BOP since Orlen and Basell launched its joint venture in September 2005.
- Orlen Group's net profit in the first quarter of 2019 amounted to zł 849 million, dropping from zł 1.044 billion in the same period in 2018.
- Grupa Lotos has signed a letter of intent with Grupa Azoty regarding the possible investment of up to zł 500 million in the Polimery Police project.

Russian chemical production

- Russia's output of chemical products rose increased by 1.6% in the first three months of 2019, although March showed a rise of 2.9%. The largest increase in production in monthly terms accounted for ethylene. 276,000 tons of ethylene were produced in March, compared to 242,000 tons in February.
- Kazanorgsintez produced 165,400 tons of ethylene in January to March 2019 against 160,100 tons in the same month last year whilst Nizhnekamskneftekhim produced 162,200 tons against 158,700 tons.
- Russian propylene production amounted to 582,000 tons in the first quarter in 2019 against 616,000 tons in the same period last year

Russian chemical trade

- Russian foreign trade balances in the first two months in 2019 reflected similar patterns to 2018, although changes in plastics trade could change in the second half of the year.
- Russian exports of 2-EH dropped to 600 tons in the first two months in 2019 against 2,700 tons in the same period in 2018, whilst n-butanol and isobutanol exports remained unchanged.
- Russian exports of synthetic rubber amounted to 177,200 tons in the first two months in 2019 versus 174,400 tons in 2018.
- Export shipments of methanol from Russia in January-March increased to 536,000 tons compared to 467,400 in the same period in 2018.

Russian & regional chemical projects

- Metafrax and Dynea AS signed a contract in April 2019 for the construction of a 55% formaldehyde production unit at Gubakha, which will be integrated with the paraformaldehyde unit.
- Uzbekistan has started work on a new gas-chemical complex based at Baysun
- The development of the gas chemical industry in Turkmenistan currently includes plans for synthetic rubber production at Kiyanly and other sites.
- SOCAR plans to commission the Ethylene-Polyethylene plant at Sumgait in the second quarter of 2020.
- Preparations are drawing closer for the full start-up of ZapSibNeftekhim

CENTRAL & SOUTH EAST EUROPE

DRUZHBA PIPELINE



Crude supply from Russia

Crude supplies from Russia to Central European refiners are in the process of being restored following the pipeline contamination problems that emerged in April and resulted in deliveries being halted. Besides Poland the delivery of crude oil to the Orlen-owned refinery in Litvinov in Czech Republic was halted in April due to a significant deterioration of the raw material supplied by Przyjaźń.

Some countries have made reserve stocks available if required by the refinery producers, principally as a backup. Clean oil started delivery on the Druzhba in early May, although it could take several months before the problems of contamination are resolved. The Russian authorities claim that the problem has been resolved, or at least the cause of the problem, but that still leaves the issue of chlorides in the pipeline

system.

On the southern branch of the Druzhba MOL initially stated that there were no quality problems but then later suspended deliveries. Moreover, the Slovak company Transpetrol issued a temporary halt on the import of Russian oil, after Slovnaft refused to accept crude oil of a differing quality. Thus, Slovakia joined the countries who temporarily

Central European Refining Volumes (unit-mil tons)		
Company	Q1 19	Q1 18
INA	0.9	0.8
Lotos	2.6	2.6
Lukoil Bourgas	1.1	1.4
Lukoil Ploiesti	0.6	0.7
MOL	2.3	2.4
NIS	0.6	0.9
Orlen-Lietuva	2.2	2.4
Orlen-Plock	4.2	4.2
Petrom	1.2	1.1
Rompetrol	1.4	2.0
Slovnaft	0.9	1.2
Unipetrol	1.8	1.9
Total	19.9	21.6

halted the import of oil from Russia via a major pipeline due to chloride contamination concerns. Refined volumes in Central Europe were down slightly in the first quarter due to maintenance, and there is no indication at this stage that second quarter production will be affected by the supply problems from Russia.

PKN Orlen launches metathesis unit for propylene production

PKN Orlen has launched its metathesis installation at Plock, consisting of a capacity of 100,000 tpa and raising total propylene capacity to 550,000 tpa. Due to the new metathesis installation, Orlen is increasing production as well as the quality of the product offered. The metathesis process is not common in Europe where propylene is normally obtained through steam cracking or catalytic cracking in the refinery section. PKN Orlen also expects to start propylene production in Lithuania in the near future. 80,000 tpa of propylene.

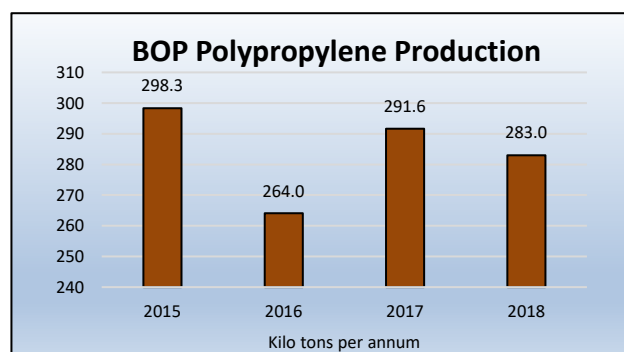
The PPF Splitter installation will be put into service at the Mazeikiiai refinery by mid-2019, which will produce another

Central European Propylene Capacities 2019			
Producer	Location	Technology	Capacity
MOL	Tiszaújváros	Cracker	220
Slovnaft	Bratislava	Cracker	73
Petrohemija	Pancevo	Cracker	85
Rompetrol Rafinare	Navodari	Cracker	100
PKN Orlen	Plock	Cracker	450
PKN Orlen	Plock	Metathesis	100
Unipetrol	Litvinov	Cracker	250
Unipetrol	Kralupy	FCC	60
Lukoil	Bourgas	FCC	60

The metathesis installation was created on the basis of a license from Lummus Technology. The budget of the entire project was about zł 400 million. Polish company Elektrobudowa was responsible for the design and construction of the turnkey system.

Basell Orlen Polyolefins, polypropylene expansion

Basell Orlen Polyolefins (BOP) at Plock has completed the expansion of the polypropylene installation, representing the largest investment project at BOP since Orlen and Basell launched a joint venture in September 2005. This



investment was also associated with the expansion of the BOP Logistic Platform to provide adequate storage space. As a result of the expansion the PP Spheripol installation at Plock has become the largest production line of this type in Europe, raising capacity by 20% to 480,000 tpa.

In addition to the PP Spheripol installation, BOP includes a Hostalen installation for HDPE with a capacity of 320,000 and a smaller LDPE unit with a capacity of 100,000 tpa. The increase in PP production capacity by BOP is closely related to the investment of PKN Orlen in the start-up of the metathesis installation.

PKN Orlen Petrochemical Margins (€/ton)					
Product	Q1 18	Q2 18	Q3 18	Q4 18	Q1 19
Polyethylene ⁶	286	263	282	288	311
Polypropylene ⁶	447	414	392	392	421
Ethylene	652	630	644	640	578
Propylene	510	503	552	568	516
Toluene	166	192	213	195	172
Benzene	335	255	262	189	103
Butadiene	415	583	657	571	453
Paraxylene	387	362	431	628	534

PKN Orlen, Q1 2019

PKN Orlen's net profit in the first quarter in 2019 amounted to zł 849 million, down from zł 1.044 billion in the same period in 2018. In the first quarter of 2019 Orlen continued the diversification of supply directions by signing a contract with Saudi Aramco for supplies of Saudi oil.

In the downstream division the company achieved a stable EBITDA of nearly zł 1.4 billion despite weak margins. Benzene margins for the first quarter dropped to €103 per ton in the first quarter in 2019 against €335 per ton in the first quarter in 2018, since when there has been a steady decline. Ethylene margins for Orlen dropped from €652 per ton to €578 per ton, whilst propylene rose slightly from €510 to €516 per ton. Paraxylene margins saw the largest rise in the first quarter, jumping from €387 per ton in 2018 to €534. Group chemical sales, including the Unipetrol group, were largely similar in the first quarter this year to the same period in 2018.

PKN Orlen Group Chemical Sales (unit-kilo tons)		
	Q1 19	Q1 18
Monomers	259	252
Polymers	139	149
Aromatics	115	106
Fertilisers	280	251
Plastics	106	103
PTA	151	142

PKN Orlen produced 133,600 tons of ethylene in the first quarter in 2019 against 135,700 tons in the same period in 2018, whilst propylene rose from 92,800 tons to 102,100 tons. PTA production at Wloclawek totalled 158,000 tons in the period January to March 2019 against 149,000 tons, with sales rising to 151,000 tons from 142,000 tons.

Unipetrol Financial Performance (Kc thousand)		
	Q1 19	Q1 18
Revenues	28,906	27,172
EBITDA LIFO	883	1,495
EBITDA	973	1,366
EBIT	-150	587
Net profit	-65	322

Unipetrol-Q1 2019

Revenue for Unipetrol grew by 6% in the first quarter to Kc 28.906 billion, whilst the EBITDA LIFO dropped from Kc 1.495 billion to Kc 883 million. The financial results were affected by higher oil prices and the resulting lower margin in the refinery and petrochemical segments. The volume of processed oil for Unipetrol amounted to 1.8 million tons in the first quarter

Czech Petrochemical Exports (unit-kilo tons)		
Product	Jan-Mar 19	Jan-Mar 18
Ethylene	23.3	27.4
Propylene	1.9	7.3
Butadiene	1.7	0.2
Benzene	14.2	6.3
Toluene	3.8	4.2
Ethylbenzene	41.4	35.2

in 2019 versus 1.9 million tons in 2018. Unipetrol's refinery capacities were utilised to 86% and 88% in the petrochemical segment. Sales volumes of refinery products by Unipetrol amounted to 1.48 million tons whilst petrochemical product sales totalled 450,000 tons.

Czech petrochemical exports, Jan-Mar 2019

Czech ethylene exports amounted to 23,300 tons in the first quarter in 2019 against 27,400 tons in the same period in 2018.

Most of the ethylene is shipped from Litvinov to Germany by pipeline. Exports of ethylbenzene, produced at Kralupy, amounted to 41,400 tons in January to March versus 35,200 tons. Propylene exports amounted to 1,900 tons in January to March 2019 against 7,300 tons in 2018.

Czech polyethylene exports totalled 78,943 tons in the first three months in 2019 against 88,908 tons in the same period in 2018, whilst imports rose from 80,321 tons to 106,824 tons. Imports of polypropylene totalled 135,313 tons in the first quarter this year against 128,820 tons in January to March 2018, whilst exports slipped from 76,138 tons to 69,705 tons this year.

Polymery Police shares to raise capital

Grupa Azoty Zakłady Chemiczne Police plans to raise zł 1 billion under the offer to enable the implementation of investment plans related to the Polymery Police project. On 12 April, PDH Polska also received letters of intent from the Korean companies Hyundai Engineering and Korea Overseas Infrastructure & Urban Development Corporation potential financial involvement in the Polymer Police project worth up to \$130 million, i.e. also about zł 500 million. The parties are interested in subscribing for shares worth zł 80 and zł 50 million respectively.

Lotos-Azoty agreement on cooperation for Polymery Police

Grupa Lotos signed a letter of intent with Grupa Azoty in late April regarding the possible investment of up to zł 500 million in the implementation of the Polimery Police project. Two Korean companies have offered the same amount before. The talks with Lotos scheduled to run up to 31 October 2019, whilst the letters of intent signed with Korean companies remain valid until 12 October 2019.

Negotiations with Grupa Azoty are to consider the acquisition by Lotos of new shares in PDH Polska with a value of up to zł 500 million. The parties will conduct talks aimed at potential cooperation based on the participation of Lotos in financing the

Polymery Police project.

PDH Polska is responsible for Polymery Police includes facilities for the production of propylene, an installation for polypropylene production, a trans-shipment terminal (gas terminal), logistics infrastructure and appropriate auxiliary installations. A polypropylene project of 437,000 tpa is part of the complex. PDH Polska decided on 18 April to select Hyundai Engineering as a general contractor for the Polimery Police project for a price of €993 million. The contract was then signed on 13 May. According to the agreed schedule of proceedings, the project implementation is to end in the fourth quarter of 2022.

MOL's Olefin & Polyolefin Production (unit-kilo tons)		
Product	Q1 19	Q1 18
Ethylene	205	202
Propylene	106	109
Butadiene	22	11
Raffinate	37	18
Product	Q1 19	Q1 18
LDPE	59	61
HDPE	98	103
PP	132	132

MOL Q1 2019

MOL's combined crackers at Tiszaujvaros and Bratislava produced 205,000 tons of ethylene in the first quarter against 202,000 tons in the same period in 2018. Propylene dropped slightly from 109,000 tons to 106,000 tons. Butadiene and raffinate production at Tiszaujvaros increased from 11,000 tons to 22,000 tons and from 18,000 tons to 37,000 tons respectively. Most of the olefin production is used internally for polyolefins, although 62,000 tons was sold externally in the first quarter against 59,000 tons in the same period in 2018. Butadiene sales amounted to 23,000 tons in the first quarter against 11,000

tons whilst polyolefin sales increased from 295,000 tons to 300,000 tons.

MOL's total operating revenue rose 14% to Ft 1,145.7 billion in the first quarter, but total operating costs outpaced that rise increasing 16% to Ft 1,088.4 billion. Thus, the operating profit slipped 17% to Ft 57.3 billion. Earnings declined from a high base as refinery margins were substantially weaker and this was only partly mitigated by strong internal performance across all businesses. Petrochemical margins dropped from €438 per ton in the first quarter in 2018 to €415 in the same period this year. Downstream revenue for MOL rose 15% to Ft 998.9 billion, but the EBITDA dropped 35% to Ft 33.3 billion.

Serbian Chemical Exports (unit-kilo tons)		
Product	Jan-Feb 19	Jan-Feb 18
Polyethylene	15.6	24.8
Polypropylene	2.6	3.2
Styrene Butadiene Rubber	3.0	3.2
Methanol	16.1	18.0
Acetic Acid	13.0	17.2

Serbian propylene increase?

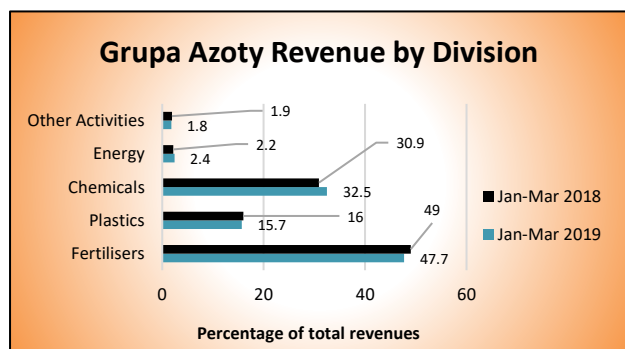
Serbian refiner NIS reported a sharp drop of net profit between January and March to 158 million dinars (\$1.49 million), down from 3.7 billion dinars in the first quarter of 2018. Financial results were influenced by lower average crude oil prices compared to

the first quarter of 2018, and capital overhaul of the oil refinery at Pancevo which affected output.

NIS is currently considering the production of propylene at the Pancevo refinery. One of the ideas is to switch the FCC into propylene mode as gasoline consumption in the country is not very large. Then possibly the refiner could

organise the company's own production of polypropylene. In March NIS started building a 200-megawatt (MW) gas-fired cogeneration plant which will be built by China's Shanghai Electric Group at an estimated cost of €180 million. The total value of the company's investments in exploration, production and capacity modernisation in the first quarter stood at 8.3 billion dinars, or 6% more than in the first quarter of 2018.

HIP Petrohemija restarted its cracker on 13 May after an extended shutdown. The steam cracker turnaround started 20 March and the plant was expected to come back online 25 April was delayed. The outages at the low-density polyethylene plant in Pancevo and the synthetic rubber plant in Elemir started on 8 March and 15 April respectively. HIP Petrohemija exported 113,500 tons of polyethylene in 2018 against 102,400 tons in 2017, whilst also exporting 14,500 tons of SBR.



Petrohemija includes the increase in production volumes in the HDPE plant which will be completed during the summer.

In 2018 the company's turnover amounted to €333.3 million, and gross profit €7.76 million. For capital investment projects in 2018, investments worth €9.1 million were contracted. Within its integrated petrochemical site in Pancevo, HIP Petrohemija's capacities include 600,000 tpa of petrochemicals, including 200,000 tpa of ethylene, 85,000 tpa of propylene, and 45,000 tpa of C4 fraction. Elemir plant's SBR capacity is 40,000 tpa.

Polish Chemical Production (unit-kilo tons)		
Product	Jan-Mar 19	Jan-Mar 18
Caustic Soda Liquid	89.9	95.7
Caustic Soda Solid	15.4	15.1
Ethylene	133.6	135.7
Propylene	102.1	91.8
Butadiene	16.8	14.7
Toluene	2.8	4.4
Phenol	12.4	12.3
Caprolactam	44.0	43.7
Acetic Acid	1.9	5.3
Polyethylene	100.1	100.7
Polystyrene	16.9	17.0
EPS	25.4	14.8
PVC	68.7	69.2
Polypropylene	82.5	75.8
Synthetic Rubber	72.0	72.4
Ammonia (Gaseous)	719.0	721.0
Ammonia (Liquid)	26.5	44.6
Pesticides	10.4	13.5
Nitric Acid	646.0	640.0
Nitrogen Fertilisers	560.0	530.0
Phosphate Fertilisers	124.9	105.6
Potassium Fertilisers	112.7	101.8

revenues and profits for Grupa Azoty.

Anwil-nitric acid project Thyssenkrupp

Anwil has concluded a contract for a new nitric acid plant with ThyssenKrupp Industrial Solutions. The contract includes the design, delivery and construction of a turnkey system by mid-2022 at Wloclawek. The project assumes an increase in production capacity of Anwil fertilisers by 495,000 tpa, or up to 1.461 million tpa and the estimated total investment cost is about zł 1.3 billion.

Grupa Azoty, Q1 2019

Grupa Azoty achieved a net profit of zł 323 million in the first quarter compared to zł 188 million in the same period of 2018. Grupa Azoty's revenues in the first quarter of 2019 amounted to zł 3.365 billion versus zł 2.497 billion, an EBITDA of zł 607 million versus zł 403 million and a net profit of zł 323 million versus zł 188 million. Grupa Azoty's financial result for 2018 was influenced by the fluctuation of gas prices in the previous year, whilst the costs of CO2 emissions, the increase of coal prices and electricity also had a significant impact. This meant that the group's costs rose by zł 902 million, whilst only zł 400 million was recouped from increasing prices.

Grupa Azoty's efforts to reduce dependency on the fertiliser sector to some extent depend on the important investment at PDH Polska and Polymery Police, involving propylene and polypropylene. The new polyamide plant at Tarnow has already started providing more processing capacity for caprolactam and increasing the share of plastics in the

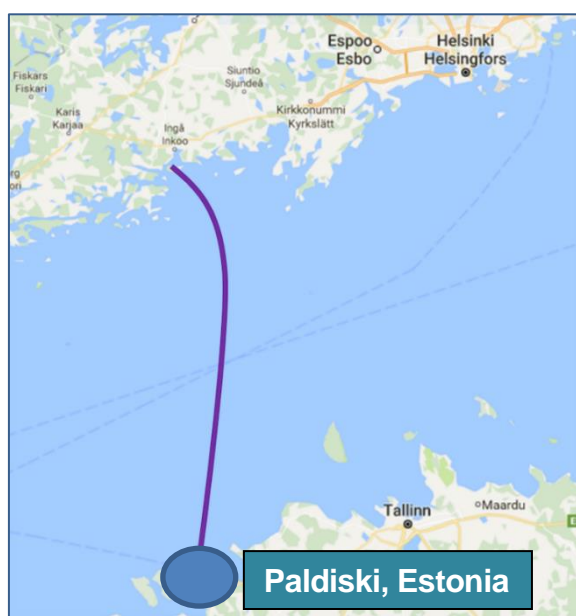
The main challenges for Grupa Azoty are concentrated on the procurement of raw materials and imports which can be affected by political considerations. Grupa Azoty buys gas via PGNiG from Russia, although other

sources of import are growing in significance such as from Qatar. Azoty buys methanol and propylene from Russia for convenience but prefers to buy other materials elsewhere if available at reasonable prices. For example, Grupa Azoty Police has signed a contract with Ameropa SA that gives it access to low-cadmium phosphate rock deposits until 2021. Low-cadmium phosphate rock is the main raw material used to manufacture compound fertilisers (including low-cadmium types).

Last year, the process of consolidation of the trade area was completed by Grupa Azoty, which allows the subsidiary divisions to operate as a single company. This significant reorganisation will bring many benefits to the Group, will enable effective marketing of products.

Estonian methanol project

Swiss industrial company Larkwater Group is examining plans to build a large methanol plant at Paldiski in Estonia. The project cost is estimated at about €1 billion. Larkwater has for several years considered the possibility of building a methanol plant in the Baltic States and Poland and has eventually decided upon Paldiski due to the forthcoming appearance of a terminal of liquefied natural gas and the Balticconnector gas pipeline and also proximity to a deep port.



Other advantages of Paldiski include the presence of railways and roads, and the convenient Estonian tax system, in which companies do not have income tax. If this project goes ahead it will provide a serious challenge to Russian methanol projects, particularly at Ust Luga and Vysotsk. The Paldiski plant would almost certainly not receive the same low gas prices as the prospective Russian projects in the Gulf of Finland, but it would have the huge advantage of being based inside the EU which would exclude sales from the trade procedures needed to be followed by non-EU producers.

The plant capacity being considered is 5,000 tons of methanol per day or 1.8 million tpa. The construction of the Balticconnector gas pipeline began on the Pakri Peninsula (the city of Paldiski), namely, that part of it that goes through Estonian territory. The construction of the gas pipeline in Finland started in 2018. By combining the gas infrastructure of Estonia and Finland with its help, the countries expect to enter a single gas market, which will also include Latvia.

Czech chemical trade, Jan-Mar 2019

Czech chemical imports were largely similar in the first quarter in 2019 against the same period in 2018. In the group of acyclic alcohols, imports dropped to 56,598 tons against 58,411 tons, although costs dropped from €42.175 million to €38.720 million. Exports for this group of products are not very significant, amounting to 6,078 tons in the first quarter this year for a value of €4.711 million. Methanol imports into the Czech Republic totalled 20,400 tons in the first quarter against 21,400 tons in the same period in 2018. Russia supplied 12,200 tons of methanol to the Czech market in the first quarter in 2019 for €3.780 million, whilst Germany supplied 4,736 tons for €1.548 million.

Czech Organic Chemical Imports (unit-kilo tons)		
Product	Jan-Mar 19	Jan-Mar 18
Methanol	20.4	21.4
Isopropanol	0.9	1.0
N-Butanol	2.6	3.9
2-EH	6.8	7.3
Ethylene glycol	3.4	1.4
Propylene glycol	1.1	1.3
Glycerol	10.0	10.9

TDI imports amounted to 2,321 tons in the first quarter in 2019 at a cost of €6.456 million, down from 3,387 tons in the same period in 2018 at a total cost €11.453 million. The largest source of supply in the first quarter was Germany with 1,033 tons at a cost of €2.010 million. Regarding

DINP and DOP plasticizers, imports of shipments totalled 3.113 million tons in the first quarter this year at a total cost of €3.912 million whilst exports were largely unchanged at 10,326 tons at a total cost of €12.421 million. Phthalic anhydride exports from the Czech Republic amounted to 3,833 tons in the first three months in 2019 for €3.576 million, down from 4,475 tons for €3.786 million. Caprolactam exports dropped slightly from 11,798 tons in the first quarter in 2018 to 11,074 tons.

Russia

Russian Chemical Production (unit-kilo tons)		
Product	Jan-Mar 19	Jan-Mar 18
Caustic Soda	325.0	329.0
Soda Ash	846.0	892.0
Ethylene	792.8	783.0
Propylene	582.0	616.0
Benzene	365.4	393.0
Xylenes	159.0	165.6
Styrene	200.7	182.0
Phenol	57.9	48.7
Ammonia	4,700.0	4,700.0
Nitrogen Fertilisers	2,779.0	2,863.0
Phosphate Fertilisers	1,051.0	1,029.0
Potash Fertilisers	2,230.0	2,101.0
Plastics in Bulk	2,079.0	2,047.0
Polyethylene	569.0	558.0
Polystyrene	132.9	135.4
PVC	266.1	255.9
Polypropylene	358.1	395.0
Polyamide	39.1	42.5
Synthetic Rubber	408.0	435.0

Russian chemical production, Jan-Mar 2019

Russia's output of chemical products rose increased by 1.6% in the first three months of 2019, although March showed a rise of 2.9%. The largest increase in production was recorded in ethylene where 276,000 tons of ethylene were produced in March, compared to 242,000 tons in February. Russian propylene production amounted to 582,000 tons in the first quarter in 2019 against 616,000 tons in the same period last year.

Benzene production amounted to 370,000 tons in the first three months of 2019, down by 4.6%. Russian xylene production totalled 159,000 tons in January to March 2019 against 165,600 tons in the same period in 2018. Production of caustic soda dropped to 325,000 tons in the first quarter versus 329,000 tons a year earlier. Russian polymer production in amounted to 2.079 million tons in Q1 2019, up 0.6%, although much larger rises are anticipated in the second half of the year after the start-up of the ZapSibNeftekhim complex.

Russia produced 1.194 million tons of methanol in January to March 2019 against 1.051 million tons in the same period in 2018. Russian butanol production amounted to 68,900 tons in January to March 2019 against 68,800 tons in the same period in 2018. Whilst n-butanol production dropped from 41,000 tons in the first three months in 2018 to 38,600 tons, isobutanol production rose from 27,800 tons to 30,100 tons.

SIBUR's Sales Volumes (unit-kilo tons)		
Product	Q1 19	Q1 18
Sales volumes		
Petrochemical products:	879	895
Polypropylene	130	143
PE (LDPE)	63	67
Elastomers	136	124
Plastics and organics	190	197
Intermediates	123	130
Midstream segment products:	1,763	1,506
LPG	1,465	1,305
Naphtha	298	202

Regarding trade patterns, the deficit in Russian chemical trade dropped slightly in the first quarter from \$4.8 billion last year to \$4.7 billion. This was due partly to lower imports of pharmaceuticals which still comprised 26% of total chemical imports into Russia, and a small rise in export values at constant volumes.

Russian petrochemical producer performance

SIBUR Q1 2019

SIBUR's revenue increased by 9.0% in the first quarter due to positive price developments in rouble terms in most product groups. The EBITDA increased by 4.5% mainly due to increases in the olefins & polyolefins and midstream segments. The group's net profit rose by 71.5% in the first quarter due to the revaluation of debt denominated in foreign currency.

SIBUR's monomer & Intermediate Production (unit-kilo tons)		
Product	Jan-Mar 19	Jan-Dec 18
Benzene	43.4	47.3
Styrene	47.9	42.3
PTA	28.7	66.7
Propylene	180.5	209.3
Ethylene Oxide	83.8	80.6
Butadiene	76.9	78.0
Isoprene	21.9	23.3
Isobutylene	44.0	52.0
Ethylene	170.7	175.9

In the first quarter this year significant progress was made by SIBUR on construction of the ZapSibNeftekhim complex, which was adjudged to have been 95% complete (including commissioning works) at 31 March 2019. Construction works on the polypropylene unit and the logistics platform have been completed and commissioning works are underway. Besides ZapSibNeftekhim, SIBUR has completed construction of the first phthalate-free DOTP plasticiser production facility in Russia at Perm. The plant has a capacity of 100,000 tpa and trial shipments to clients are under way.

In the first three months of 2019, SIBUR's gas processing plants (GPPs) processed 5.6 billion cubic metres of associated gas, an

increase of 2.4% over 2018. NGL fractionation volumes increased by 1.1% to 2.0 million tons, LPG sales volumes increased by 12.3% to 1.5 million tons whilst naphtha sales rose by 47.5% to 298,000 tons. Propylene production dropped in the first quarter to 180,500 tons against 209,300 tons in the same period in 2018 due to maintenance at Tobolsk, whilst PTA production dropped from 66,700 tons to 28,700 tons.

SIBUR's Financial Performance (billion roubles)		
Category	Q1 19	Q1 18
Revenue (net of VAT and export duties)	130,886	120,092
EBITDA	44,161	42,261
Adjusted EBITDA ⁽³⁾	47,672	43,701
<i>EBITDA profit margin</i>	33.7%	35.2%
EBITDA by segment:		
<i>Olefins & Polyolefins</i>	10,258	9,700
<i>Plastics, Elastomers & Intermediates</i>	5,616	6,526
<i>Midstream</i>	28,571	26,643
Net profit	46,020	26,834
Net cash from operating activities	23,257	32,532
Net cash used in investing activities, including:	(35,884)	(31,837)
<i>Capital investments ⁽⁴⁾</i>	(36,976)	(31,875)

SIBUR's EBITDA margin, Q1 2019

At 33.7%, there was little change in SIBUR's EBITDA margin in the first quarter in 2019 compared to the first quarter of 2018. The net profit for SIBUR increased sharply by 71.5% to 46.0 billion roubles, although this was mainly due to the revaluation of debts denominated in foreign currency rather than down purely to operational performance.

SIBUR's plastics, elastomers and intermediates external revenue increased by 5.1% in the first quarter. Elastomers sales rose 19.7% in value due to higher prices as well as higher sales volumes. Plastics and organic synthesis chemical revenues were almost flat as lower sales volumes of PET pending maintenance shutdown were compensated by higher sales of MEG and start of production at the new DOTP plasticiser unit.

SIBUR's financial results, Q1 2019

For the first three months of 2019, SIBUR's revenue increased by 9.0% to 131 billion roubles. Olefin and polyolefin revenue increased by 4.1% to 23.7 billion roubles mainly due to positive price dynamics in rouble terms for products in the segment due to the depreciation of the rouble. In turn, this growth was

offset by a slight decrease in revenue from sales of polyethylene due to a decrease in sales volumes.

Plastics, elastomers and intermediates revenue increased by 5.1% to 38.2 billion roubles largely due to positive price dynamics in rouble terms for most products and higher sales volumes of elastomers. Revenue from the midstream segment increased by 18.2% to 59.2 billion roubles due to growth in sales of LPG and naphtha, as well as positive price dynamics for LPG in rouble terms due to the

depreciation of the rouble compared to the same period in 2018.

SIBUR's EBITDA increased by 4.5% to 44.2 billion roubles as a result of a 5.8% increase in EBITDA in the olefins and polyolefins segment and a 7.2% increase in midstream segment due to positive dynamics in selling prices. This was partially offset by a decrease in EBITDA in the plastics, elastomers and intermediates segment as a result of the extended shutdown of PTA production for the capacity expansion started at Blagoveshchensk.

Nizhnekamskneftekhim Production (unit-kilo tons)		
Product	Jan-Mar 18	Jan-Mar 17
Ethylene	162.2	158.7
Propylene	81.6	82.5
Benzene	70.7	58.0
LLDPE	41.0	30.0
Polypropylene	53.6	51.4
Styrene	78.9	77.0

Nizhnekamskneftekhim, Jan-Mar 2019

Nizhnekamskneftekhim increased ethylene production in the first quarter in 2019 to 162,200 tons from 158,700 tons in the same period last year. Nizhnekamskneftekhim suffered significant losses in 2018, mainly from isoprene rubber (SKI) sales. In 2018 the company produced 716,000 tons of synthetic rubber, 2% up on 2017 and 732,000 tons of plastics up 2.8%. Butyl rubber - 221,000 tons, benzene - 223,000 tons, propylene 307,000 tons, isoprene from isobutane 201,000 tons, isoprene from isopentane 107,000 tons. The overall increase in production volumes compared to 2017 was 103.2%.

Together with Linde Nizhnekamskneftekhim has begun the design and development of documentation for a new ethylene complex with a capacity of 600,000 tpa. The cost of building an ethylene complex at the Nizhnekamskneftekhim plant with polymer production is estimated at 234.2 billion roubles. The project involves the construction of an EP-600 complex for the production of ethylene with the production of polymers with a total capacity of more than 700,000 tpa. For the construction of the first stage this year, the company attracted a syndicated loan of €807 million for a period up to the end of 2032, organized by Deutsche Bank (Deutsche Bank). This year NKNH also approved and registered a programme of exchange bonds for the amount of 40 billion roubles, which it has not yet begun to place.

Russian petrochemical markets

Russian Ethylene Production (unit-kilo tons)

Producer	Jan-Mar 19	Jan-Mar 18
Angarsk Polymer Plant	55.5	57.8
Kazanorgsintez	165.4	160.1
Stavrolen	80.0	83.5
Nizhnekamskneftekhim	162.2	158.7
Novokuibyshevsk Petrochemical	16.8	12.2
Gazprom n Salavat	95.0	94.5
SIBUR-Kstovo	102.3	104.3
SIBUR-Khimprom	13.4	12.1
Tomskneftekhim	68.4	70.9
Ufaorgsintez	32.4	31.9
Total	791.3	786.1

Russian ethylene & propylene production, Jan-Mar 2019

Russian ethylene production amounted to 791,300 tons in the first quarter in 2019 versus 786,100 tons in the same period in 2018. Kazanorgsintez produced 165,400 tons in January to March 2019 against 160,100 tons in the same period last year whilst Nizhnekamskneftekhim produced 162,200 tons against 158,700 tons. Other important producers included SIBUR-Kstovo which produced 102,300 tons versus 104,300 tons and Gazprom neftekhim Salavat which produced 95,000 tons against 94,500 tons. Kazanorgsintez expects to secure 172,000 tons of ethane from the Minnibayevo Gas Processing Plant in Tatarstan in 2019 to support ethane supplies from Orenburg, but still needs to purchase other feedstocks and ethylene monomer to maintain polyethylene production levels.

Russian Propylene Production (unit-kilo tons)

Producer	Jan-Mar 19	Jan-Mar 18
Angarsk Polymer Plant	30.5	32.4
Kazanorgsintez	12.6	11.0
Lukoil-NNOS	73.9	71.7
Stavrolen	31.6	34.0
Nizhnekamskneftekhim	81.6	82.5
Novokuibyshevsk Petrochemical	12.1	10.4
Omsk Kaucuk	10.1	21.5
Polyom	46.3	40.6
Gazprom n Salavat	43.0	41.3
SIBUR Kstovo	44.7	44.9
SIBUR-Khimprom	17.0	18.5
Tomskneftekhim	37.0	37.9
SIBUR Tobolsk	92.7	123.7
Ufaorgsintez	48.7	45.6
Total	582.0	616.0

Russian propylene production & sales, Jan-Mar 2019

Russian propylene production amounted to 582,000 tons in the first quarter in 2019 against 616,000 tons in the same period last year. SIBUR-Tobolsk reduced production to 92,700 tons against 123,700 tons in the first three months last year, the fall was due to maintenance in January and February 2019. Nizhnekamskneftekhim produced 81,600 tons, as the largest Russian producer, followed by Lukoil-NNOS with 73,900 tons.

Russian sales of propylene on the domestic merchant market amounted to 114,000 tons in the first quarter in 2019 against 105,400 tons in the same period in 2018. Lukoil-NNOS at Kstovo shipped 55,100 tons in the first quarter against 51,900 tons in 2018, SIBUR-Kstovo shipped 32,900 tons against 31,900 tons and Angarsk Polymer Plant remained unchanged at 21,300 tons.

purchases in the first quarter to 49,400 tons against 45,300 tons in the same period in 2018. The second largest merchant consumer is SIBUR Tobolsk which purchased 22,200 tons in January to March 2019 versus 22,100 tons in the same period in 2018. However, it remains unclear how long SIBUR Tobolsk will need to purchase propylene on the open market, particularly as the new ZapSibNeftekhim complex is close to start-up.

Russian Propylene Domestic Sales (unit-kilo tons)

Company	Jan-Mar 19	Jan-Mar 18
Angarsk Polymer Plant	21.3	21.3
SIBUR-Kstovo	32.9	31.9
LUKoil-NNOS	55.1	51.9
Gazprom Neftekhim Salavat	4.6	0.0
Tobolsk-Polymer	0.0	0.2
Total	114.0	105.4

The largest merchant consumer of propylene in Russia, Acrylonitrile producer Saratovorgsintez, increased purchases in the first quarter to 49,400 tons against 45,300 tons in the same period in 2018. The second largest merchant consumer is SIBUR Tobolsk which purchased 22,200 tons in January to March 2019 versus 22,100 tons in the same period in 2018. However, it remains unclear how long SIBUR Tobolsk will need to purchase propylene on the open market, particularly as the new ZapSibNeftekhim complex is close to start-up.

Russian propylene exports amounted to 32,000 tons in the first quarter versus 34,200 tons in the same period in 2018. Exports were divided between the plants in the Nizhny Novgorod region including Lukoil-NNOS and SIBUR-Kstovo, in addition to Stavrolen in the Stavropol Kray in southern Russia.

Russian Propylene Exports (unit-kilo tons)

Producer	Jan-Mar 19	Jan-Mar 18
Lukoil-NNOS	20.0	27.8
SIBUR-Kstovo	6.1	3.1
Stavrolen	5.9	3.2
Total	32.0	34.2

The main destinations for Russian propylene exports were sent to Belarus and Poland, although in recent months volumes to Poland have declined due to competition from Karpatneftekhim in Ukraine.

Bulk Polymers

Russian HDPE Production (unit-kilo tons)		
Producer	Jan-Mar 19	Jan-Mar 18
Kazanorgsintez	137.3	132.9
Stavrolen	72.9	76.3
Nizhnekamskneftekhim	0.0	0.0
Gazprom n Salavat	28.7	28.0
Total	238.9	237.2

Russian HDPE production Jan-Mar 2019

Production of HDPE in Russia increased by 0.4% in the first quarter to 236,300 tons compared to 235,300 in the same period last year. Kazanorgsintez produced 137,300 tons of HDPE for the quarter, which is 2.2% higher than last year. Stavrolen produced 72,900 tons of HDPE, which is 4% less than in the first three months in 2018. Gazprom neftekhim Salavat increased production of HDPE by 3% to 28,700 tons. Nizhnekamskneftekhim has produced only linear polyethylene (LLDPE) to date in 2019. Russian HDPE production is expected to rise significantly after the start-up of the

ZapSibNeftekhim complex at Tobolsk in mid-2019.

Russian Polypropylene Production (unit-kilo tons)		
Producer	Jan-Mar 19	Jan-Mar 18
Ufaorgsintez	33.6	33.7
Stavrolen	23.6	30.1
Moscow NPZ	36.3	33.1
Nizhnekamskneftekhim	53.6	51.4
Polyom	52.9	54.7
Tomskneftekhim	37.0	36.4
SIBUR Tobolsk	109.0	126.5
Total	346.0	365.9

Russian polypropylene production & trade, Jan-Mar 2019

Polypropylene production at Russian plants decreased by 5.5% in the first quarter to 346,000 tons. SIBUR-Tobolsk reduced production by 14% to 109,900 tons, whilst Polyom at Omsk reduced the production of propylene polymer by 3% for the quarter to 52,900 tons. Stavrolen reduced polypropylene production to 23,600 tons against 30,200 tons in the first quarter, a year earlier, the reduction due to an outage in March. Nizhnekamskneftekhim produced 53,600 tons of polypropylene, which is 4.2% higher than last year. Tomskneftekhim produced 37,000 tons of polypropylene, an increase of 2%. Ufaorgsintez retained production at the same level as last year 33,600 tons. NPP Petrochemistry produced 36,300 tons of polypropylene,

which is 10% more than in 2018.

Polypropylene imports to the Russian market fell by 19% in the first quarter of 2019, a trend which is expected to continue through the rest of the year. Supplies of propylene homopolymers fell by 24.5% in the first quarter to 11,700 tons versus 15,500 tons. Supplies of propylene block copolymers to Russia amounted to 9,900 tons in the first three months, which is 11.6% lower than last year. Furthermore, import of stat-copolymers of propylene decreased to 7,400 tons, whilst external supplies of other polymers of propylene for the period under review amounted to 8,100 tons against 10,600 tons in January to March 2018.

SIBUR's polypropylene sales decreased by 9.1% in the first quarter to 130,000 tons due to a maintenance shutdown at Tobolsk at the beginning of the year. Polyethylene sales volumes for SIBUR decreased by 6.7% in the first quarter to 63,000 tons due to maintenance work at Tomsk.

Russian PVC Production (unit-kilo tons)		
Producer	Jan-Mar 19	Jan-Mar 18
Bashkir Soda	68.9	66.8
Kaustik	21.5	23.6
RusVinyl	89.2	84.6
Sayanskkhimplast	82.1	71.9
Total	261.7	246.9

Russian PVC production & trade, Jan-Mar 2019

Russian producers of PVC produced 261,700 tons in January to March 2019, 5% up on the same period in 2018. In March, production of PVC amounted to 90,700 tons against 81,700 tons in February. RusVinyl produced 31,200 tons of PVC in March, including 2,500 tons of emulsion PVC, compared to 28,600 tons in February.

For the first quarter RusVinyl's production in the first quarter production totalled 89,200 tons which is 5% up on the same period in 2018. Total

PVC production at RusVinyl in 2018 amounted to 334,300 tons.

Sayanskkhimplast produced 82,100 tons of PVC in January to March 2019 compared to 76,700 tons in the same period in 2018. In the first quarter, Bashkir Soda Company produced 68,900 tons against 66,800 tons for the same period of 2018. Kaustik at Volgograd produced 21,300 tons in the first quarter against 23,600 tons. Kaustik stopped production on 10 May for maintenance, lasting for around three weeks. Sayanskkhimplast and Bashkir Soda Company plan to start repairs in mid-July.

Aromatics

Russian Paraxylene Domestic Sales (unit-kilo tons)		
Producer	Jan-Mar 19	Jan-Mar 18
Gazprom Neft	0.0	13.7
Ufaneftekhim	26.9	32.3
Total	26.9	46.0

Russian paraxylene domestic sales, Jan-Mar 2019

Due to reduced PTA production paraxylene sales on the Russian domestic market dropped in the first quarter from 46,000 tons in 2018 to 26,900 tons in the same period in 2019. Whilst Ufaneftekhim reduced shipments to Polief from 32,300 tons in the first quarter in 2018 to 26,900 tons in 2019, Gazprom Neft did not ship any volumes in the first three months, Polief's modernisation and expansion of PTA facilities at Blagoveshchensk has reduced the intake of paraxylene requirements at least until the second half of the year. SIBUR's paraxylene purchases from Russian refineries amounted to 176,386 tons in 2018 against 177,061 tons in 2017.

SIBUR Paraxylene, PTA-PET Chain (unit-kilo tons)		
	Jan-Mar 19	Jan-Mar 18
Paraxylene Purchases	27.0	45.0
PTA Production	28.7	66.7
PTA Domestic Sales	0.5	2.7
PTA Exports	0.0	1.2
PET Production	73.9	74.1

SIBUR, PX-PTA-PET, Q1 2019

SIBUR reduced paraxylene purchases in the first quarter this year to 27,038 tons versus 44,965 tons in the same period last year. The share of paraxylene in SIBUR's total raw material expenditure dropped from 6.9% to 4.5% as a result of the lower purchases. The reduction of paraxylene purchases was due to the extended maintenance and modernisation being undertaken at Polief where PTA production amounted to 28,689 tons in the first quarter this year against 66,700 tons in January to March 2018.

Russian PTA Imports (unit-kilo tons)		
Country	Jan-Feb 19	Jan-Feb 18
Belgium	2.0	1.6
India	1.0	3.9
China	48.9	16.7
South Korea	14.0	4.8
Poland	0.0	0.0
Thailand	3.0	6.0
Total	68.9	33.1

Russian PTA imports, Jan-Feb 2019

PTA imports into Russia more than doubled to 68,900 tons in the first two months in 2019 against 33,100 tons in the same period in 2018. China increased shipments to Russia to 48,900 tons in January and February 2019 against 16,700 tons in the same period last year whilst South Korea increased deliveries from 4,800 tons to 14,000 tons. Thailand supplied 3,000 tons of PTA to Russia in January-February 2019 versus 6,000 tons in 2018. The cost of imported PTA in the first two months in 2019 amounted to \$61 million against \$29 million last year. Alko-Naphtha in Kaliningrad accounted for just under 80% of imports in 2019 to date.

Russian Benzene Production (unit-kilo tons)		
Producer	Jan-Mar 19	Jan-Mar 18
Rosneft	38.3	42.8
Gazprom Neft	21.6	33.7
Lukoil	14.6	28.9
Magnitogorsk MK	13.8	14.0
Nizhnekamskneftekhim	70.7	58.0
Novolipetsk MK	3.1	2.6
Gazprom neftekhim Salavat	44.9	38.1
Kirishinefteorgsintez	21.1	19.4
Slavneft	16.1	17.6
Severstal	9.5	8.9
Bashneft	23.2	25.3
Ural Steel	2.4	1.9
Uralorgsintez	22.5	23.8
Zapsib	18.9	19.4
SIBUR	20.9	23.5
Total	341.6	357.7

Tatneft-paraxylene and benzene plants 2021-2022

Equipment for the aromatic complex at the Nizhnekamsk refinery has been delivered from the Russian group NATEK. Tatneft aims to start the production of paraxylene and benzene at the Taneko refinery at Nizhnekamsk by 2021-2022. The capacities of the plants comprise 158,000 tpa of paraxylene and 64,000 tpa of benzene. Production is to be based at the catalytic reforming unit, with a capacity of 714,000 tpa for raw materials, which was launched in November 2018. Currently output of aromatic compounds is directed in full to the production of gasoline.

The aromatics complex at Nizhnekamsk was previously scheduled for completion in 2020, and the delay until 2021-2022 is partly due to the delay of the SafPet PTA/PET project which has become complicated. Paraxylene from the Taneko refinery is intended to be delivered to the SafPet project whilst benzene will probably be directed to the domestic merchant market.

Russian benzene production-sales, Jan-Mar 2019

Russian benzene production totalled 341,600 tons in January to March 2019, of which the largest producer was Nizhnekamskneftekhim producing 70,700 tons versus 58,000 tons in the same period in 2018. At the end of last year, Nizhnekamskneftekhim increased the production capacity of benzene to 265,000 tpa.

Russian Benzene Domestic Sales (unit-kilo tons)		
Producer	Jan-Mar 19	Jan-Mar 18
Altay-Koks	9.4	7.3
Angarsk Polymer Plant	12.7	15.0
Gazprom Neft	21.4	32.7
Zapsib	19.0	18.8
Kinef, Kirishi	15.2	11.8
Moskoks	0.0	7.9
Stavrolen	0.0	9.9
Koks	6.9	8.2
Magnitogorsk MK	11.5	9.8
Nizhniy Tagil MK	6.4	5.6
Novolipetsk MK	2.8	0.8
Ryazan NPZ	10.2	9.9
Severstal	8.8	9.1
SIBUR-Kstovo	18.1	20.5
Uralorgsintez	21.6	21.6
Ural Steel	0.0	0.2
Chelyabinsk MK	2.6	4.9
Slavneft-Yaroslavlorgsintez	15.9	16.1
Bashneft	0.0	4.8
Gazprom Neftekhim Salavat	6.3	17.3
Others	5.1	0.6
Total	191.6	232.8

Russian Benzene Consumers (unit-kilo tons)		
Consumer	Jan-Mar 19	Jan-Mar 18
Kuibyshevazot	44.5	61.6
Azot Kemerovo	33.2	38.8
Shchekinoazot	17.3	18.2
Kazanorgsintez	15.6	20.9
Khimprom	0.1	0.1
Omsk Kaucuk	2.6	9.6
Nizhnekamskneftekhim	0.0	7.4
Novolipetssk	0.6	7.3
Samarorgsintez	12.3	6.8
Zapsib	16.2	15.6
SIBUR-Khimprom	24.2	22.7
Gazprom Neftekhim Salavat	0.0	0.0
Promsintez	2.4	2.3
Tumazi Carbon Plant	0.0	0.2
Ufaorgsintez	4.8	0.0
Uralorgsintez	19.3	12.8
Zavod im Ya M Sverdlova	0.8	0.3
Others	0.0	8.2
Total	193.8	224.6

Russian Caprolactam Production (unit-kilo tons)		
Producer	Jan-Mar 19	Jan-Mar 18
Kuibyshevazot	47.7	52.9
Shchekinoazot	14.0	13.7
SDS Azot	31.0	33.9
Total	92.6	100.5

Rosneft's three plants at Angarsk, Novokuibyshevsk and Ryazan produced a combined total of 38,300 tons against 42,800 tons. Gazprom Neft at Omsk reduced benzene production from 33,700 tons to 21,600 tons.

Benzene sales on the Russian domestic merchant market amounted to 191,600 tons in the first quarter against 232,800 tons in January to March 2018. One of the factors explaining the fall in consumption is lower production of caprolactam, but the main factor is the loss of Nizhnekamskneftekhim to the market following an increase in the company's own production. Nizhnekamskneftekhim purchased only 7,400 tons in the first quarter last year, whilst thereafter increasing purchases through the remainder of 2018. As the company's benzene capacity has increased to 265,000 tpa the need the purchase merchant benzene at Nizhnekamsk has been resolved for the immediate future.

The largest individual buyer of benzene on the Russian market remains Kuibyshevazot, although it reduced purchases from 61,600 tons in the first three months last year to 44,500 tons. The largest supplier to the domestic merchant market in the first quarter was Ufaorgsintez, shipping 21,600 tons which was the same as in 2018. Gazprom Neft at the Omsk refinery reduced merchant sales from 32,700 tons in January to March 2018 to 21,400 tons in the same period this year, whilst SIBUR-Kstovo reduced slightly from 20,500 tons to 18,100 tons.

The three Russian caprolactam producers remain the largest domestic merchant consumers of benzene, followed by styrene and phenol producers. Russian caprolactam production amounted to 92,600 tons in January to March 2019 against 100,500 tons in January to March 2018. Kuibyshevazot reduced production from 52,900 tons to 47,700 tons whilst SDS Azot at Kemerovo dropped to 31,000 tons from 33,900 tons.

Regarding activity in April, Stavrolen restarted production after a maintenance shutdown between 7-11 April and shipped 2,100 tons almost immediately to Kuibyshevazot. Over the month Stavrolen supplied 7,325 tons to Russia's largest caprolactam producer. According to traders, the return of Stavrolen in the short term it will balance the domestic market and help to offset scheduled repairs at plants in the second and third quarters.

Gazprom neftekhim Salavat increased the volume of benzene shipments to the domestic market in April to 3,317 tons. Delivery of benzene from the Ukrainian producer Karpatneftekhim amounted to 4,622 tons whilst the Atyrau refinery in Kazakhstan supplied only 543 tons. Imports from Karpatneftekhim in Ukraine and the Atyrau refinery in Kazakhstan helped cover the maintenance shutdowns in April at the Ryazan refinery and Uralorgsintez. On 28 April SIBUR-Kstovo started scheduled repairs on benzene production which lasted until 2 May. SIBUR-Kstovo produces more than 75,000 tpa of benzene for synthesis.

Russian Xylene Production (unit-kilo tons)

Producer	Jan-Mar 19	Jan-Mar 18
Gazprom Neft	72.7	78.1
Kirishinefteorgsintez	27.8	29.3
Ufaneftekhimi	58.5	58.3
Total	159.0	165.6

tons in February. Gazprom neftekhim Salavat buys most of its orthoxylene from the Omsk refinery even though it is located much closer to Ufaneftekhimi from where it buys only a small share of its supply. Ufaneftekhimi also supplies Kamteks-Khimprom occasionally. In the first quarter phthalic anhydride production totalled 24,200 tons in Russia against 26,500 tons in the same period in 2018. Kamteks-Khimprom reduced production from 23,400 tons to 20,500 tons.

Russian Phthalic Anhydride Production (unit-kilo tons)

Producer	Jan-Mar 19	Jan-Mar 18
Gazprom neftekhim Salavat	3.8	3.2
Kamteks	20.5	23.4
Total	24.2	26.5

the cost of Bashneft products increased by 3% to 70,500–71,100 roubles per ton and in the Siberian Federal District, orthoxylene from the Omsk refinery went up by 5% to 62,000–62,500 roubles per ton. In May, the production of orthoxylene at Ufaneftekhimi will be stopped for long-term repairs which could lead to a significant increase in prices in the domestic market.

Russian orthoxylene market, Jan-Mar 2019

Russian xylene production totalled 159,000 tons in January to March 2019 against 165,600 tons in the same period in 2018. Orthoxylene sales on the domestic market amounted to 26,000 tons in January to March 2019 against 37,000 tons in same period last year. In March Gazprom Neft at the Omsk refinery supplied Kamteks-Khimprom with 7,170 tons of orthoxylene against 4,570

Kirishinefteorgsintez increased orthoxylene in prices in the North-western Federal District of the country by 4% in April to 68,500–69,600 roubles per ton. In the Volga Federal District,

Russian Phenol Production (unit-kilo tons)

Producer	Jan-Mar 19	Jan-Mar 18
Ufaorgsintez	19.0	14.0
Kazanorgsintez	19.2	19.0
Novokuibyshevsk Petrochemical	19.7	15.7
Total	57.9	48.7

Russian phenol market, Q1 2019

Russian phenol production rose in the first quarter from 48,700 tons in 2018 to 57,900 tons in the same period in 2019. Novokuibyshevsk Petrochemical increased production from 15,700 tons to 19,700 tons whilst Ufaorgsintez increased production from 14,000 tons to 19,000 tons. Kazanorgsintez produced 19,200 tons versus 19,000 tons.

Russian production of phenol will receive a major boost after the restart of the phenol-acetone plant Omsk Kaucuk (part of the Titan Group of Companies) which has been undergoing modernisation and expansion. Omsk Kaucuk received six heat exchangers from Yekaterinburg in April as part of the reconstruction of the cumene plant, which is being increased by capacity by .33%. A special feature of the reconstruction involves the transfer of production to a more modern and environmentally friendly alkylation process on a zeolite catalyst.

The updated capacity will allow phenol capacity to rise up to 90,000 tpa and acetone up to 56,000 tpa. The second stage of the project managed by Titan for Omsk Kaucuk is the processing of acetone into isopropanol where capacity has been set out as 30,000 tpa. The third stage of the project is the construction of bisphenol production with a capacity of 118,000 tpa followed by the fourth stage of the construction of a new epichlorohydrin plant. All of these products are being coordinated towards the development and production of epoxy resins at Omsk in order to address the large deficit in the Russian market.

Synthetic rubber**Russian C4 Purchases (unit-kilo tons)**

Consumer	Jan-Mar 19	Jan-Mar 18
Omsk Kaucuk	15.9	13.2
Nizhnekamskneftekhim	51.0	44.7
SIBUR Togliatti	51.8	55.9
Sterlitamak Petrochemical Plant	0.0	0.0
Total	118.8	113.8

Russian C4s, Jan-Mar 2019

C4 sales on the domestic market in Russia totalled 118,800 tons in the first quarter in 2019 against 113,800 tons in the same period in 2018. SIBUR Togliatti reduced merchant purchases of C4s from 55,900 tons to 51,000 tons, whilst Nizhnekamskneftekhim increased purchases from 44,700 tons to 51,800 tons and Omsk Kaucuk increased from 13,200 tons to 15,900 tons. In late March, Gazprom neftekhim Salavat exported C4s for the first time to Europe,

shipping 1,000 tons to the Polish terminal Braniewo. The supply of the fraction for export was enabled due to the low demand in the domestic market. Russian synthetic production dropped in the first quarter to 408,000 tons from 435,000 tons in the first quarter in 2018, thus affecting demand for C4s.

SIBUR-Synthetic Rubber Production (unit-kilo tons)		
	Q1 19	Q1 18
Commodity Rubber	87.1	85.7
Speciality Rubber	28.9	27.4
Thermoplastic elastomers	21.2	20.5
Total	137.3	133.5
SIBUR-Synthetic Rubber Domestic Sales (unit-kilo tons)		
	Q1 19	Q1 18
Commodity Rubber	29.1	33.4
Speciality Rubber	2.9	3.0
Thermoplastic elastomers	6.8	11.0
Total	38.8	47.4
SIBUR-Synthetic Rubber Export Sales (unit-kilo tons)		
	Q1 19	Q1 18
Commodity Rubber	61.4	47.4
Speciality Rubber	28.0	22.2
Thermoplastic elastomers	8.0	7.2
Total	97.3	76.8

Nizhnekamskneftekhim rubber exports Jan-Feb 2019 (unit-kilo tons)		
Category	Jan	Feb
Isoprene Rubber	22	19.5
Butyl Rubber	5.63	6
HBR	13.5	11.2
Polybutadiene	15.1	15
Others	0	0
Total	56.23	51.7

Nizhnekamskneftekhim. With a similar-scale fire at Sintez-Kaucuk at Sterlitamak in November 2018, the plant shutdown lasted several days which had no effect on the market. Isoprene rubber demand in Russia is relatively small and if necessary, the market can be covered by other producers SIBUR Togliatti and Sintez-Kaucuk at Sterlitamak.

In the second week of May Nizhnekamskneftekhim encountered a fire at the butyl rubber plant which was eliminated quickly and whilst incurring no injuries re-emphasises the rise in safety incidents at the complex. Whilst from 2006 to 2014 there were no reported accidents, then from 2015 to 2019 there have been seven incidents the most serious

Russian Synthetic Rubber Exports (unit-kilo tons)		
Product	Jan-Feb 19	Jan-Feb 18
E-SBR	8.6	4.5
Block	4.4	4.7
SSBR	2.5	1.0
SBR	13.1	15.9
Polybutadiene	40.3	40.1
BR	22.2	21.3
HBR	24.3	22.6
NBR	6.7	5.5
Isoprene	49.6	52.6
Others	5.4	6.2
Total	177.2	174.4

SIBUR synthetic rubber production & sales, Q1 2019

SIBUR's production of synthetic rubber, including thermoplastic elastomers, totalled 137,300 tons in the first quarter this year against 133,500 tons in the same period in 2018. All main categories showed a minor increase.

In terms of sales, commodity rubber shipments were divided into two thirds exports and one third domestic sales, whilst around 90% of speciality rubber sales went to export. Thermoplastic elastomer sales were lower on the domestic market in the first quarter, dropping from 11,000 tons in January to March 2018 to 6,800 tons this year whilst conversely exports rose slightly from 7,200 tons to 8,000 tons. With production of TEPs totalling 21,232 tons in the first quarter the combined domestic and export sales leaves a large inventory which may be balanced in the second quarter.

Voronezhsintezkaucuk-expansion of thermoplastic elastomer

Voronezhsintezkaucuk has begun installation and assembly of an air emission purification unit at its new thermoplastic elastomer plant under construction. The equipment was supplied by the German company Venjakob. The construction of the production of thermoplastic elastomers (TEP) started in the third quarter of 2018, adding another 50,000 tpa of capacity and raising total capacity to 135,000 tpa. The start of production is scheduled for 2020.

Nizhnekamskneftekhim fire-isoprene monomer plant

The fire that occurred at Nizhnekamskneftekhim's isoprene monomer plant on 19 April (from which two people have died, and 15 other personnel injured) has affected production slightly but is not expected to impact on market conditions for isoprene rubber for at least the domestic market. Exports account for around 80% of sales of isoprene rubber from the world market for synthetic isoprene rubber, 17.9% for butyl rubber and 5.6% for butadiene rubber.

Russian synthetic rubber exports, Jan-Feb 2019

Russian exports of synthetic rubber amounted to 177,200 tons in the first two months in 2019 versus 174,400 tons in 2018. Revenues from synthetic rubber exports amounted to \$281 million against \$275 million in January to February 2018.

The highest value product category exported from Russia is halogenated butyl rubber (HBR) where exports totalled 24,324 tons in the first two months in 2019 at a total value of \$58.060 million. Polybutadiene exports from Russia

amounted to 40,264 tons in the first two months in 2019 at a value of \$64.944 million and isoprene rubber exports totalling 49,551 tons for \$65.464 million. In terms of revenues for Russian synthetic rubber exports in 2018, polybutadiene rubber provided the largest source of sales totalling \$395.5 million. This was followed by isoprene, butyl rubber and halogenated butyl rubber. More detail of volumes and revenues for individual products is available on the CIREC website.

Russian Methanol Production (unit-kilo tons)		
Producer	Jan-Mar 19	Jan-Mar 18
Shchekinoazot	245.6	104.3
Sibmetakhim	251.7	237.4
Metafrax	305.1	302.5
Akron	27.2	26.4
Azot, Novomoskovsk	73.8	70.7
Angarsk Petrochemical	10.8	0.4
Azot, Nevinnomyssk	31.2	25.8
Tomet	207.1	228.4
Ammoni	41.3	54.7
Totals	1193.7	1050.6

Regarding shipment destinations China represented the largest market for Russian exporters in the first two months, accounting for 14.1% of sales. This was followed by India and Poland, each with 9.6%, after which came Hungary with 9.2%.

Methanol

Russian methanol production Jan-Mar 2019

Russia produced 1.194 million tons of methanol in January to March 2019 against 1.051 million tons in the same period in 2018. Metafrax produced 305,100 tons against 302,500 tons whilst Sibmetakhim at Tomsk increased production from 104,300 tons to 245,600 tons. Tomet at Togliatti reduced production to 207,100 tons from 228,400 tons. Shchekinoazot reported the most significant results, and as the new 450,000 tpa plant is now operational the company is expected to see the largest rise in 2019.

Russian methanol export sales, Jan-Mar 2019

Export shipments of methanol from Russia in January-March increased to 536,000 tons compared to 467,400 in the same period in 2018. The increase in exports was made possible due to the launch of the new unit at Shchekinoazot where exports more than doubled from 81,900 tons in the first quarter last year to 187,100 tons in the same period this year.

Russian Methanol Exports (unit-kilo tons)		
Producer	Jan-Mar 19	Jan-Mar 18
Azot Novomoskovsk	20.7	39.5
Akron	1.7	4.2
Metafrax	123.5	129.6
Sibmetakhim	110.1	135.7
Tomet	84.4	74.8
Shchekinoazot	187.1	81.9
Ammoni	8.5	1.6
Total	536.0	467.4

Rail exports to the Finnish ports for the three months in 2019 totalled 303,800 tons compared to 307,300 tons a year earlier. Methanol shipments through the Black Sea port Kavkaz increased significantly (by 22,700 tons), but still only amounted to 25,500 tons. Exports of Russian methanol to Poland also increased significantly by 22,000 tons, to 93,600 tons, due to increased demand from buyers.

Metafrax was the largest Russian exporter of methanol in 2018, shipping 481,600 tons from Gubakha followed by Sibmetakhim with 450,400 tons and Shchekinoazot with 415,000 tons. Metafrax has almost doubled its export figure over the past four years. In 2015, the company's exports amounted to 254,000 tons, in 2016 it rose to 353,000 tons and in 2017 383,000 tons. The export arm of Metafrax Metadynea Trading is actively engaged in distribution in the local Finnish market, offering a product delivered by both rail and road transport.

Russian Methanol Domestic Sales (unit-kilo tons)		
Producer	Jan-Mar 19	Jan-Mar 18
Azot Nevinnomyssk	7.7	1.8
Azot Novomoskovsk	50.8	40.1
Metafrax	63.2	62.2
Sibmetakhim	103.7	92.4
Tomet	107.9	143.6
Shchekinoazot	29.8	11.1
Ammoni (Mendeleevsk)	19.4	42.8
Others	0.0	0.3
Total	382.5	394.2

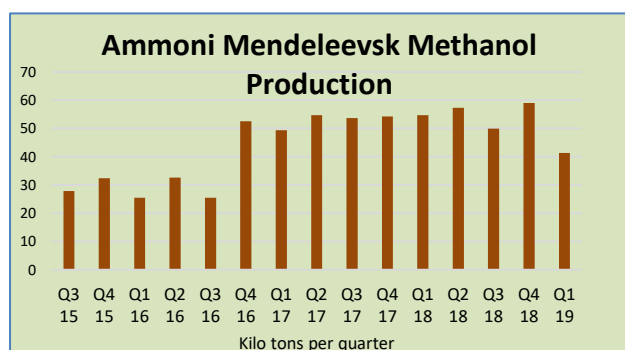
Russian methanol domestic sales, Jan-Mar 2019

Domestic sales of methanol on the Russian market amounted to 382,500 tons in January to March 2019 versus 394,200 tons in the same period last year. Tomet reduced sales from 143,600 tons in the first quarter in 2018 to 107,900 tons this year, partly due to lower production and partly to higher exports. Ammoni at Mendeleevsk also reduced domestic shipments to 19,400 tons from 42,800 tons. Sibmetakhim from its Tomsk site increased sales from 92,400 tons to 103,700 tons whilst Azot at Novomoskovsk increased sales from 40,100 tons to 50,800 tons.

Of the consumers, Nizhnekamskneftekhim purchased 61,200 tons in the first quarter this year against 66,800 tons in the same period last year whilst SIBUR-Togliatti increased purchases from 30,400 tons in January to March 2018 to 46,300

Russian Methanol Consumption (unit-kilo tons)		
Consumer	Jan-Mar 19	Jan-Mar 18
Nizhnekamskneftekhim	61.2	66.8
SIBUR Togliatti	46.3	30.4
Uralorgsintez	20.2	20.4
SIBUR-Khimprom	9.6	4.1
Tobolsk-Neftekhim	6.6	15.6
Ektos-Volga	14.0	13.1
Omsk Kaucuk	23.5	23.4
Novokuibyshevsk NPZ	10.8	11.4
Uralkhimplast	6.4	5.2
Slavneft-Yanos	4.0	2.4
Others	179.9	201.5
Total	382.4	394.2

disruptions in the shipment of products. Prior to this, it became known that the largest private shareholder of OOO



tons in the same period this year. Other than the MTBE producers Metadynea and Kronospan remain the largest consumers, accounting for 19.335 tons and 24,960 tons respectively.

Ammoni at Mendeleevsk, potential buyers

The number of applicants for the purchase of Ammoni has increased to include Akron and SDS-Azot groups, besides Lukoil. The sale of Ammonia is scheduled for completion in May-June 2019, after approval of the supervisory board of Vnesheconombank (VEB) a shareholder and creditor of the plant. Lukoil is considering the possibility of buying Ammoni, which is in a pre-bankrupt state and could be ready to offer about \$1 billion for the asset. Accordingly, VEB plans to start bankruptcy proceedings, gaining control over Ammoni, and then sell the plant to one of the potential investors.

Ammoni lacks its own fleet of cars, which systematically causes Tatammony in court is trying to block a transaction to transfer the asset to VEB with the subsequent resale of Singapore-based Indorama, and also insists on dissolving the current board of the manufacturer of mineral fertilisers.

The launch of the complex for the production of methanol, ammonia and urea of Ammoni at Mendeleevsk (Tatarstan) took place in the second half of 2015. The owners of Ammoni include Tatammonium LLC (52.9%), Tatarstan Venture Fund (24.3%), and VEB (22.8%), with the state corporation being the largest creditor of the company. The company's revenue in 2017 increased by 9% and amounted to almost 16 billion roubles whilst production volume increased by 8%.

Metafrax 2018 performance

Metafrax increased the production of marketable products in monetary terms by 33% over 2017 to 25.8 billion roubles in 2018. Formaldehyde, urea-formaldehyde concentrate, urotropin and other products increased by 616 million roubles. The share of methanol in total sales exceeded 57%, 1.5% higher than in 2017. Sales of finished products amounted to 25.8 billion roubles in 2018, rising by 26 billion roubles or more than 32% than 2017 despite lower than planned production targets of 12,000 tons of methanol.

The share of exports in the sales volume for the year exceeded 45% and increased by 5% versus 2017. Methanol production totalled 1.17 million tons in 2018, a record level. The volume of internal processing of methanol at the Gubakha site increased significantly in 2018 to 354,000 tons. The company intends to bring this figure up to 450,000 tons by 2025. The enterprises of the Metafrax group in Russia and Austria totally consume over 600,000 tpa of methanol. As part of the company's development strategy by 2030, domestic demand for methanol will reach 800,000 tons.

Metafrax-AKM plant commissioning

Metafrax may start commissioning works at the OZH facilities, which are being built as part of the construction of a new ammonia, urea and melamine complex in Gubakha this summer. The design capacity of AKM plants when operating 8 thousand hours per year will be 562,000 tpa of urea, 298,000 tpa of ammonia and eventually 80,000 tpa tons of melamine per year. The production of ammonia is planned to be carried out using a technology which purges gases from methanol production which will reduce emissions, improve energy efficiency.

The total investment in the construction of the complex is estimated at €950 million. The contract with the Swiss Casale SA, which is the EP contractor for the project, is worth €388 million with a project payback period is 13 years. It is planned to put the enterprise into operation in 2021.

Honeywell Corporation will act as the general contractor for automation systems for the project of the new ammonia, urea and melamine (AKM) production complex of Metafrax. Honeywell, in collaboration with Casale, will supply modular process equipment, management systems, security and information systems, and

training management systems. The company will also supply a unit for hydrogen recovery and purification (Honeywell UOP Pressure Swing Adsorption).

Metafrax and Dynea formaldehyde 55% plant contract

Metafrax and Dynea AS signed a contract in April 2019 for the construction of a 55% formaldehyde production unit at Gubakha. The formaldehyde installation will be integrated with the paraformaldehyde production complex using GEA technology. On 14 February 2019 the framework of the Russian Investment Forum, Metafrax and GEA (Denmark) signed a contract for the development of the project and the supply of equipment for the installation of the unit for paraformaldehyde at the Metafrax production site at Gubakha.

The capacity of the plants will be 180,000 tpa of 55% formaldehyde and 30,000 tpa of paraformaldehyde. The project is worth more than 5.2 billion roubles, scheduled to be completed by the end of 2021. The term of manufacturing equipment will be 14 months and the launch of the installation is scheduled for the third quarter of 2021. Formaldehyde, produced at the new installation, will be used as raw material for the production of paraformaldehyde. The formaldehyde production process will be carried out on a silver catalyst. This will be the second installation on the Gubakha site, working on Dynea technology. With the commissioning of the plant, the total production capacity of 55% formaldehyde will be 450,000 tpa.

Russian Butanol Production (unit-kilo tons)		
N-Butanol		
Producer	Jan-Mar 19	Jan-Mar 18
Angarsk Petrochemical	7.1	8.8
Azot	3.5	2.9
Gazprom n Salavat	16.7	17.4
SIBUR-Khimprom	11.3	11.9
Total	38.6	41.0
Isobutanol		
Producer	Jan-Mar 19	Jan-Mar 18
Angarsk Petrochemical	4.1	4.9
Gazprom n Salavat	11.2	9.1
SIBUR-Khimprom	14.7	13.8
Total	30.1	27.8

Russian Butanol Domestic Sales (unit-kilo tons)		
Producer	Jan-Mar 19	Jan-Mar 18
Gazprom n Salavat	1.1	2.3
SIBUR-Khimprom	7.6	8.0
Angarsk Polymer Plant	5.1	6.8
Azot Nevinomyssk	0.2	0.0
Totals	13.9	17.1

roubles per ton, including VAT. The cost of isobutanol also enterprises increased by 2,000 roubles to 71,500 roubles per ton, including VAT. SIBUR-Khimprom is offering n-butanol at 74,000 roubles, and isobutanol at

Russian Butanol Consumption (unit-kilo tons)		
Consumer	Jan-Mar 19	Jan-Mar 18
Akrlat	5.6	5.4
Dimitrievsky Chemical	3.9	5.7
Plant of Synthetic Alcohol	0.0	0.0
Volzhskiy Orgsintez	2.4	1.8
Roshalsky Plant of Plasticizers	0.0	0.0
Others	1.9	3.2
Total	13.9	17.1

for the processing of butyl acrylate. The cooperation of the companies will help support the development of products for the further processing of butyl acrylate, as well as develop a unified strategy in terms of export deliveries. SIBUR and Gazprom are conducting internal corporate coordination of the activities at the Acryl Salavat complex. SIBUR-

Organic chemicals**Russian oxo alcohol production Jan-Mar 2019**

Russian butanol production totalled 68,900 tons in January to March 2019 against 68,800 tons in the same period in 2018. Whilst n-butanol production dropped from 41,000 tons in the first three months in 2018 to 38,600 tons, isobutanol production rose from 27,800 tons to 30,100 tons. Gazprom neftekhim Salavat increased isobutanol production to 11,200 tons from 9,100 tons, whilst SIBUR-Khimprom increased to 14,700 tons from 13,800 tons.

Russian domestic butanol sales, Jan-Mar 2019

Russian butanol markets have been quite stable since the start of the year although the market dynamics is expected to change after the start-up of SIBUR's new DOTP plant at Perm. Butanol merchant sales in January to March amounted to 13,900 tons against 17,100 tons in January to March 2018. The main cause of the fall was the limited supply made available from Salavat, where only 1,100 tons were shipped in the first quarter.

The two largest domestic purchasers in January to March 2019 were Dmitrievsky Chemical Plant with 3,900 tons, down from 5,700 tons in 2018, and Akrlat at Dzerzhinsk with 5,600 tons against 5,400 tons. Butanol sales on the merchant domestic market amounted to 58,100 tons in 2018 against 59,900 tons in 2017.

Merchant supply side shortage for n-butanol pushed Gazprom neftekhim Salavat to raise prices in April by 2,050 roubles to 74,300 roubles per ton, including VAT. The cost of isobutanol also enterprises increased by 2,000 roubles to 71,500 roubles per ton, including VAT. SIBUR-Khimprom is offering n-butanol at 74,000 roubles, and isobutanol at 47,000 roubles, respectively per ton and including VAT. N-butanol availability is affected by processing by both Gazprom neftekhim Salavat and SIBUR-Khimprom. Angarsk Petrochemical is the only producer with available product where there is no internal demand, and prices were quoted in April at 72,500 roubles per ton.

SIBUR-Gazprom acrylate joint market development

SIBUR and Gazprom neftekhim Salavat have concluded a corporate agreement on the development of the market for butyl acrylate under which the parties will provide incentives

Neftekhim's Aktilat division can produce 40,000 tpa of acrylates, whilst Gazprom neftekhim Salavat includes capacities for acrylic acid with a capacity of 80,000 tpa, butyl acrylate with a capacity of 80,000 tpa and glacial acrylic acid with a capacity of 35,000 tpa.

Gazprom neftekhim Salavat's subsidiary produced 73,000 tons of butyl acrylate in 2018 versus 69,000 tons in 2017. Butyl acrylate is produced from the company's own raw materials including butanol and acrylic acid of ester quality (grade E). As with other acrylates, the main demand factor for butyl acrylate is the development of the construction sector.

SIBUR's Production of Intermediates (unit-kilo tons)		
Product	Jan-Mar 19	Jan-Mar 18
Glycols	81.5	80.9
DOTP	3.0	0.0
Oxo Alcohols	41.9	44.1
Acrylates	13.4	13.7

SIBUR, organic chemicals Q1 2019

SIBUR produced 13,400 tons of acrylates at Dzerzhinsk in the first quarter in 2019 against 13,700 tons in the same period in 2018. Domestic sales of acrylates dropped in the first three months to 4,243 tons against 7,684 tons in the same period last year whilst by contrast exports rose from 5,761 tons to 9,842 tons.

Oxo alcohol production for SIBUR totalled 41,900 tons in the first three months this year, dropping from 44,100 tons in 2018, whilst DOTP production (at Perm) took place for the first time amounting to 3,000 tons. Only 1,307 tons of DOTP were shipped in the first three months of which 1,221 tons went to domestic customers. For oxo alcohols, sales were affected by the start-up of the DOTP plant notwithstanding a reduction of production by 2,200 tons.

SIBUR's Intermediate Domestic & Export Sales (unit-kilo tons)		
Product	Jan-Mar 19	Jan-Mar 18
DOTP	1.3	0.0
Oxo Alcohols	31.0	39.1
Acrylates	14.1	13.6

Domestic market shipments of oxo alcohols for dropped from 23,241 tons in January to March 2018 to 20,991 tons in 2019 whilst exports fell from 15,885 tons to 10,016.

Gazprom neftekhim Salavat-ethyl acetate

Gazprom neftekhim Salavat has increased operating rates of the ethyl acetate plant that it started in September 2018 and is now producing around 700 tons per month. Production of ethyl acetate is based on Johnson Matthey licence whereby the process includes the esterification of acetic acid with ethyl alcohol. After half a year of operation Gazprom neftekhim Salavat achieved a stable quality standard in March this year which by Russian classification corresponds to the highest domestic grade level GOST 8981-78.

Shipment of ethyl acetate is carried out in bulk in tank trucks, cubes and barrels on the terms of shipment at own expense from a warehouse at Sergiyev Posad near Moscow, as well as on the terms of delivery by transport of OOO NPK Monomer. Ethyl acetate is used primarily as a solvent and diluent, being favoured because of its low cost, low toxicity, and agreeable odour. The product is used in glues, nail polish removers, and as an adhesive in the shoe industry.

Russian Organic Chemical Exports (unit-kilo tons)		
Product	Jan-Feb 19	Jan-Feb 18
N-Butanol	4.2	4.2
Iso-butanol	3.5	3.6
2-EH	0.6	2.7
Pentaerythritol	1.7	3.5
Phenol	2.2	4.0
Ethylene Oxide	2.9	2.6
Formaldehyde	2.1	3.2
Acetone	3.4	7.4
Acetic Acid	6.5	6.5
VAM	8.7	3.1
Butyl Acetate	4.8	3.3
Acrylic Acid	5.3	2.5
Phthalic Anhydride	14.0	29.7
Acrylonitrile	38.6	24.0
Melamine	2.2	16.0
Caprolactam	37.4	15.4

Russian oxo alcohol and organic chemical trade, Jan-Feb 2019

Russian exports of 2-ethylhexanol (2-EH) dropped to 600 tons in the first two months in 2019 against 2,700 tons in the same period in 2018, whilst n-butanol and isobutanol exports remained virtually the same. 2-EH exports from Russia are expected to continue falling in 2019 as domestic demand increases following the start-up of the SIBUR DOTP plant at Perm. Turkey was the main destination for Russian 2-EH exports in 2018, taking 51% of shipments, followed by the Netherlands with 15.8%.

Acetone exports from Russia dropped from 7,400 tons in January to February 2018 to 3,400 tons in 2019. Notable rises were seen in exports of caprolactam, from 15,400 tons to 37,400 tons, and acrylonitrile from 24,000 tons to 38,600 tons. Notable falls were seen melamine, dropping from 16,000 tons to 2,000 tons and phthalic anhydride which dropped from 29,700 tons to 14,000 tons.

Other products

Russian TDI Imports
(unit-kilo tons)

Country	Jan-Feb 19	Jan-Feb 18
Hungary	1.9	1.5
Germany	2.1	3.3
China	0.1	0.0
South Korea	0.2	0.3
Saudi Arabia	1.2	0.7
UK	0.0	0.1
US	1.4	0.2
Japan	0.3	0.4
Iran	0.0	0.1
Total	7.3	6.7

Russian TDI imports, Jan-Feb 2019

Russian TDI imports amounted to 7,300 tons in the first two months in 2019 against 6,700 tons in the same period last year. Germany remained the largest supplier, despite reducing shipments from 3,300 tons to 2,100 tons whilst Hungary increased sales from 1,500 tons to 1,900 tons and from the US a rise of 1,400 tons from 200 tons. TDI prices have dropped sharply in the past year.

In the Russian isocyanate market, the Kuznetsky Technopark company plans to launch a plant for the production of flexible polyurethane foam (EPPU) in July 2019. The plant is located in Kuznetsk, Penza region where 1.5 billion roubles have already been invested in the project from the total 1.64 billion roubles. The new enterprise will produce 30,000 tpa of EPPU, being equipped with equipment from Hennecke, Albrecht Baumer GmbH, Dolphin Pack, etc.

Russian Imports of MDI
(unit-kilo tons)

Country	Jan-Feb 19	Jan-Feb 18
Hungary	0.8	0.2
Germany	2.4	1.9
China	2.9	1.6
South Korea	0.3	0.0
Saudi Arabia	5.5	3.9
Japan	0.2	0.3
Belgium	2.6	1.3
Netherlands	5.1	3.6
Others	0.0	0.5
Total	19.8	13.3

Russian MDI imports, Jan-Feb 2019

MDI imports into the Russian market rose in the first two months in 2019 to 19,800 tons from 13,300 tons in the same period last year. Import costs for MDI in 2018 for the Russian market totalled \$310.0 million against \$258 million in 2017. Prices for MDI began to fall from the very beginning of 2018 due to the excess of supply over demand: from €2,800 per ton in June to €1,500 per ton by the end of the year.

In the first two months in 2018 prices for Russian imported MDI averaged \$2,714 per ton whilst dropping to \$1,707 per ton in 2019. As a result, Russian import costs for MDI totalled \$33.8 million for the first two months this year versus \$36.1 million in 2018, despite the rise in imported volumes by 6,600 tons.

The major change in supply in 2018 came from Saudi Arabia which shipped 39,700 tons against 200 tons in 2017, whilst imports from Germany dropped from 44,600 tons to 18,200 tons. In the first two months in 2019 Russia imported 5,500 tons of MDI from Saudi Arabia against 3,900 tons. The second largest supplier in 2019 to date is the Netherlands which shipped 5,100 tons, followed by Belgium with 2,600 tons and Germany with 2,400 tons.

Russian Organic Chemical Imports (unit-kilo tons)

Product	Jan-Feb 19	Jan-Feb 18
Ethylene glycol	9.1	8.5
Propylene glycol	2.8	4.9
Acetic acid esters	2.1	2.5
Isopropanol	2.0	3.7
Maleic anhydride	0.6	1.0
DINP	4.2	3.7
DOP	0.5	1.7
Phthalic anhydride	2.0	3.3
PTA	68.9	33.1
TDI	7.3	7.8
Lysine	8.5	10.4
Amino acids	0.0	5.2
Methionine	5.0	2.5
Cyclic amides	0.9	0.7

Tomskneftekhim-TEA catalysts

Tomskneftekhim has upgraded compressor equipment in the production of triethylaluminum (TEA), which made it possible to increase the output capacity by 35%. According to the results of all the work, the capacities of the plant for the production of TEA increased from 170 to 230 tpa.

TEA is used as a component of a catalyst that is used to produce polypropylene, linear low-density polyethylene and high-density polyethylene. Tomskneftekhim provides TEA with its own production, and also ships the product to SIBUR Tobolsk and NPP Neftekhimiya at Moscow and Omsk Polyom. Tomskneftekhim's capacities include 140,000 tpa for polypropylene and 245,000 tpa for LDPE.

Industrial gas plant to be created in Buryatia

Baikalpromgaz from Ulan-Ude plans to open a technical gases production plant in Buryatia in the first quarter of 2020. The plant will include capacities for 11 million cubic meters of oxygen, 29 million cubic meters of nitrogen and 0.4 million cubic meters of argon. There is no industrial production of industrial gases and medical oxygen in the Far

Eastern Federal District. Supplies from other regions, transportation distance and lack of competition cause high prices for products in the region.

Ukraine

Ukrainian Polymer Imports (unit-kilo tons)		
Product	Jan-Mar 19	Jan-Mar 18
PVC	11.6	20.5
LDPE	19.4	16.3
LLDPE	18.3	17.3
HDPE	23.9	19.1
Ethylene Vinyl Acetate	3.4	3.3
PP	31.5	28.4

Ukrainian polymer exports, Q1 2019

Imports of PVC into Ukraine decreased by 44% in the first three months of this year, dropping to 11,600 tons from 20,500 tons. Imports of polyethylene to the Ukrainian market increased in the first three months of 2019 by 10% to 65,100 tons compared to 59,100 tons a year earlier. Almost all grades of ethylene polymers accounted for the increase in imports. HDPE imports amounted to 23,900 tons in the first three months of 2019, compared to 19,100 tons a year earlier.

Ukraine to limit Russian oil product and petrochemicals from June 2019

From June this year, deliveries of Russian coal, gasoline and diesel fuel to Ukraine will be carried out only with special permits. The aim is to reduce the dependency of the Ukrainian economy on Russian imports. The new rules state that it is completely prohibited to supply ethylene, propylene, butylene, butadiene, and petroleum coke, in addition to bitumen, ethane, butane, and isobutane obtained as a result of synthesis or other processes.

LDPE imports rose from 16,300 tons to 19,400 tons LLDPE imports rose to 18,300 tons in January-March 2019 versus 17,300 tons a year earlier. Imports of other PE grades, including ethylene-vinyl-acetate (EVA), totalled 3,400 tons compared to 3,300 tons in Q1 2018.

Polypropylene imports to the Ukrainian market totalled 31,500 tons in the first three months of 2019, up by 11% from 28,400 tons. Shipments of homopolymer PP reached 24,500 tons in the first three months of 2019 versus 20,300 tons a year earlier. Imports of PP random copolymers exceeded 3,500 tons in January-March 2018, versus 4,300 tons in Q1 2018. Imports of other propylene copolymers amounted to around 500 tons.

Belarus

Belarussian petrochemicals, Jan-Feb 2019

Naftan at Novopolotsk is developing a strategy for further development up to 2030 in cooperation with Ernst & Young. Options for further development of Naftan are to be examined further from marketing research with the emphasis moving away from fuel into petrochemicals. The development of the petrochemical direction due to deeper integration of the Naftan and the Polimir petrochemical plant in raw material and product flows. In the future, the construction of a new ethylene-propylene installation is being considered, particularly to enable Polimir to produce enough propylene for acrylonitrile production which is currently dependent on large imports from Russia. The petrochemical industry accounts for about 17% of Belarus's total exports, and thus acts as a key component in the economy.

Belarussian Xylene Imports (unit-kilo tons)		
Product	Jan-Feb 19	Jan-Feb 18
Orthoxylene	4.0	2.9
Paraxylene	4.5	0.6

Belarussian Methanol Market (unit-kilo tons)		
	Jan-Feb 19	Jan-Feb 18
Production	16.0	14.9
Exports	3.9	2.8
Imports	10.1	12.7
Balance	22.3	24.8

Naftan may also examine the aromatics sector, particularly xylenes, where the country is largely dependent on imports. In the first two months in 2019 Belarus increased imports of paraxylene to 4,516 tons from 584 tons in 2018 whilst orthoxylene imports rose from 2,900 tons to 4,000 tons.

Belarussian organic chemical trade, Jan-Feb 2019

Phthalic anhydride exports totalled 6,900 tons in the first two months in 2019 against 8,200 tons in the same period in 2018. Acrylonitrile exports rose to 7,400 tons from 7,200 tons whilst caprolactam shipments amounted to 2,700 tons against zero. Methanol imports dropped from 12,700 tons to 10,100 tons whilst exports rose from 2,800 tons to 3,900 tons. Methanol consumption dropped slightly in the first two months from 24,800 tons to 22,300 tons.

Grodno Azot, Q1 2019

In the first quarter this year Azot at Grodno increased methanol production from 23,000 tons to 24,400 tons, whilst caprolactam production dropped slightly from 33,300 tons to 33,100 tons. The company plans to keep revenue at

the same level as last year but allows for a decrease in net profit due to lower prices in foreign markets. Around 80% of polyamide and caprolactam, which is produced by Grodno Azot is exported. The current year did not start very Well after a ton of caprolactam fell by \$300.

Azot Grodno Production (unit-kilo tons)		
Product	Jan-Mar 19	Jan-Mar 18
Methanol	24.4	23.0
Caprolactam	33.1	33.3
Polyamide primary	30.1	28.9
Polyamide filled	3.0	2.9
Ammonia	292.4	289.7
Urea	269.1	280.7
Fertilisers	221.4	206.7
Fibres	11.1	10.7

The revenue of Grodno Azot for 2018 amounted to 1.7 billion Belarussian roubles, and net profit 176.8 million. Currently, Grodno Azot is on the verge of large-scale construction. The plans include modernisation of production and construction of a new complex at an estimated cost of \$1.6 billion. This year the company opened a new workshop for the production of nitric acid and liquid nitrogen fertilisers which will increase the output of mineral fertilisers to 1.2 million tpa.

Belarussian MDI imports, Jan-Feb 2019

MDI imports into Belarus totalled 2,622 tons in the first two months in 2019 against 2,222 tons in the same period last year. MDI prices dropped by around a half in the first two months, amounting to \$1595 per ton for January to February 2019 against \$3,063 per ton in 2018.

Belarussian MDI Imports (unit-kilo tons)		
Country	Jan-Feb 19	Jan-Feb 18
Russia	0.2	0.2
Belgium	0.6	0.4
Hungary	0.3	0.4
Germany	1.2	0.6
Saudi Arabia	0.4	0.0
Others	0.0	0.6
Total	2.6	2.2

Belarussian polymer trade, Jan-Feb 2019

LDPE imports into Belarus rose 5% in the first two months in 2019 to 61,100 tons, whilst HDPE imports dropped 28.3% to 72,000 tons. LLDPE imports amounted to 4,700 tons versus 6,400 tons in January to February 2018.

Polypropylene imports increased by 7.6% in the first two months compared to the same indicator of 2018 and amounted to about 16,000 tons. The main growth in demand was in propylene homopolymers, where imports rose 10.8% to 11,300 tons. Copolymer imports rose 0.5% to 4,600 tons.

Belarussian Polymer Imports (unit-kilo tons)		
Product	Jan-Feb 19	Jan-Feb 18
Polypropylene	16.0	14.9
LDPE	6.1	6.0
LLDPE	6.4	4.7
HDPE	7.2	9.9

Belarussian PTA imports, Jan-Feb 2019

PTA imports into Belarus totalled 8,735 tons in the first couple of months in 2019, versus 10,894 tons in the same period in 2018. Imports from South Korea dropped to 3,300 tons in January to February 2019 from 4,400 tons, whilst imports from Poland slipped from 4,900 tons to 3,500 tons. PTA prices averaged \$961 per ton in January to February 2019 against \$796 per ton in the first two

months in 2018.

Central Asia/Caucasus

SOCAR Polymer-polyolefin export strategy

The SOCAR Polymer HDPE plant at Sumgait, which started in February, has the capacity to meet domestic demand in full in Azerbaijan, and even that would allow up to 75% of the production to be exported. The plant is located in

Azerbaijan Chemical Production (unit-kilo tons)		
Product	Jan-Mar 19	Jan-Mar 18
Ethylene	34.3	30.7
Polyethylene	33.0	28.9
Propylene	16.5	16.1
Isopropanol	2.6	2.3
C4s	9.4	9.9
Methanol	62.0	58.0

the Sumgait Chemical Industrial Park where it can produce 184,000 tpa of 10 grades of polypropylene and 120,000 tpa of four HDPE grades. Shareholders of SOCAR Polymer comprise SOCAR (52.2%), Vitol (19%), Pasha Holding (9.9%), Ecoland (9.8%), Polymer Investments (5%) and AKKIK (4.1%). The project was delivered in cooperation with Maire Tecnimont, Fluor, LyondellBasell, and INEOS. About 60% of the project cost was paid by the loans from Gazprombank.

Azerbaijan petrochemical production, Q1 2019

In January-March 2019, 29,500 tons of propylene were produced in Azerbaijan, which is 83.5% more than the same period last year. Polyethylene production increased 14.2% to 33,000 tons. SOCAR has stopped exporting propylene since the start-up of the polypropylene plant at SOCAR-Polymer last year. Also, ethylene exports will decline in 2019 as product will also be supplied to SOCAR Polymer for production of HDPE.

Azerkhimya-modernisation of ethylene cracker completion 2020

SOCAR plans to commission the Ethylene-Polyethylene plant at Sumgait in the second quarter of 2020 after modernisation and reconstruction. A full-scale commissioning of the plant in a new configuration after reconstruction and modernisation will take place in the second quarter of 2020.

Modernisation and reconstruction will allow the plant Ethylene-polyethylene to increase ethylene capacity from 100-105,000 tpa to 192,000 tpa, and propylene from 50-55,000 tpa to 187,000 tpa. The project envisages the construction of a dry gas cleaning unit, a propane-propylene fraction purification unit, an ethylene and propylene storage depot, a hydrogen enrichment unit, a hydrogen production unit (electrolysis unit) and four new-type pyrolysis furnaces. In addition, the project provides for the modernisation, renovation and replacement of existing branches and equipment at the EP-300 plant, a transition to automation of control systems, and improvement of the existing power supply system and auxiliary facilities. The implementation of this project will provide raw materials for the HDPE and polypropylene plants from SOCAR Polymer.

Azerbaijan-methanol activity Q1 2019

SOCAR exported around 70,000 tons of methanol in the first quarter in 2019 continuing the steady growth in exports of methanol over the last few years. The country produces 250-300,000 tpa of methanol, with the largest importers including Turkey, Italy, Romania, and Slovenia. The domestic market is estimated at between 15-20,000 tpa and used mostly in the gas industry.

In the first quarter this year SOCAR produced 62,000 tons of methanol and has set a target of 350,000 tons for the 2019 against 230,000 tons in 2018.

Turkmenistan could move into synthetic rubber

The development of the gas chemical industry in Turkmenistan currently includes plans for synthetic rubber production at Kiyarly and other sites. The introduction of the gas-chemical complex on the Caspian coast in 2018 produces the ethylene and propylene, whilst at Ahal velayat a new complex for the production of gasoline from natural gas is under construction where using liquefied butane gas it will be possible to organise the production of butyl rubber. Another new gas-based complex based on the Bagadzh deposit at Lebap velayat, involving 1.5 billion cubic metres of gas per annum, could lead to synthetic rubber production comprising 35,000 tpa of styrene-butadiene rubber, 5,000 tpa of polybutadiene rubber and 25,000 tpa of polystyrene.

Uzbek gas-chemical complex at Baysun to be constructed

Uzbekistan has started work on a new gas-chemical complex at Baysun in the Surkhandarya region in the south of country based on the development of the Mustakilliqing 25 yilligi field. Project investments are valued at \$5.27 billion whereby the gas-chemical project will follow exploration at the gas field, involving companies such as Baker Hughes, Halliburton and Schlumberger.

The project will consist of two stages, the first of which includes the construction of a processing plant with a capacity of 5 billion cubic metres per annum in the timeframe 2018-2022. For 2023-2025, it is planned to build a gas-chemical complex capable of producing 500,000 tpa of polymer products by processing 1.5 billion cubic metres of gas per annum.



Relevant Currencies

Czech crown. \$1=20.852. €1 = 27.444: Hungarian Forint. Ft. \$1 = 229.253. €1 = 310.141: Polish zloty. zł. \$1=3.016. €1 =4.14 Ukrainian hryvnia. \$1 = 28.1 €1 = 32.6: Rus rouble. \$1 = 67.6 €1= 76.8

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