

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

- Polish propylene production has risen significantly in 2019 following the introduction of the metathesis plant at Plock which has helped reduce demand for import shipments
- Lukoil plans to soon decide on a contractor for preparatory work on the site for a new polypropylene production at Bourgas
- Czech ethylene exports amounted to 64,600 tons in the first nine months in 2019 against 60,400 tons in the same period in 2018
- The contractor for the new PKN Orlen phenol installation will be selected in 2020
- Financing arrangements for Polymery Police will be finalised in December 2019

Russian chemical production

- Russia's output of chemical products increased by 3.6% in the first nine months of 2019.
- Russian ethylene production amounted to 2.254 million tons in the first nine months in 2019 versus 2.230 million tons in the same period in 2018
- Russian propylene production amounted to 1,757 million tons in the first nine months in 2019 against 1.717 million tons in the same period last year
- Russia produced 3.295 million tons of methanol in January to September 2019 against 3.106 million tons in January to September 2018

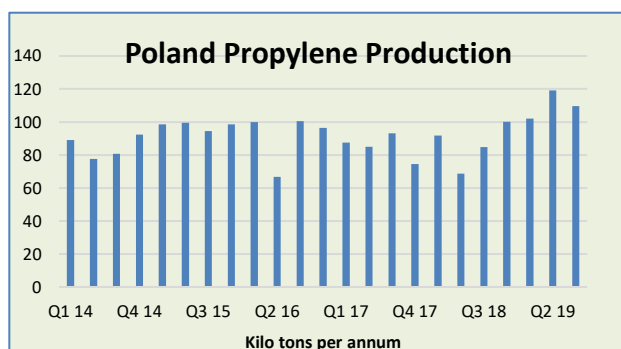
Russian chemical trade

- Following the start-up of ZapSibNeftekhim at Tobolsk SIBUR is reducing the volume of export transshipment of LPGs through the Ust Luga port in favour of processing
- Russian exports of synthetic rubber amounted to 754,000 tons in the first nine months in 2019 versus 759,000 tons in the same period in 2018
- PTA imports into Russia totalled 291,100 tons in the first eight months in 2019 against 189,600 tons in the same period in 2018
- Russian TDI imports amounted to 37,900 tons in the first eight months in 2019 against 35,200 tons in the same period last year

Russian & regional chemical projects

- SIBUR plans to increase the production capacity of oxo alcohols at Perm by 25-30%
- Regarding Russian million-ton methanol projects, meetings started in November to consider options for the project at Volgograd. Furthermore, Marubeni Corporation and Mitsui OSK Lines have put forward possible options for delivering methanol from Skovorodino in the Far East
- Chinese and Russian companies signed a contract in October for the construction of a large gas chemical complex at Ust Luga in the Leningrad Region

CENTRAL & SOUTH EAST EUROPE



Central European propylene market

MOL produced 302,000 tons of propylene in the first three quarters in 2019 against 318,000 tons in the same period last year. Most of the propylene produced at Tiszaújváros and Bratislava is processed into polypropylene and the group lacks a surplus. Polypropylene production dropped due to the lower propylene availability. Owing to MOL's large-scale investment programme into creating a vertical chain for polyols, it will need to increase its availability of propylene to meet the extra demand

for propylene glycol. MOL is targeting increased propylene yield from refining from FCCs.

Polish Propylene Imports (Jan-Aug 2019)			
Country	Volume (ktons)	€ million	€ per ton
Austria	5.7	5.7	987.7
Czech Republic	0.9	0.8	931.4
Germany	6.0	5.3	887.3
Lithuania	11.8	10.4	886.2
Russia	21.0	18.1	860.1
Ukraine	44.0	37.6	863.2
Hungary	8.0	7.0	877.6
Total	84.1	73.7	876.3

Polish propylene production has risen this year following the introduction of the metathesis plant at Plock, rising to 330,900 tons in the first three quarters against 248,300 tons in January to September 2018.

As a result of the increased production imports of propylene dropped 25% in the first eight months to 97,457 tons for a total cost of €84.852 million. Ukraine provided the largest volume of imports, from Karpatneftekhim, and totalled 44,000 tons for a total cost of €37.6 million. Not only have imports fallen, some shipments have been made from Orlen's new

propylene FCC source from Orlen Lietuva in Lithuania shipping 11,800 tons in January to August 2019.

Russia was the second largest supplier to Poland, shipping 21,000 tons at a cost of €18.1 million. Imports of propylene into Poland started to drop from April onwards due to increased propylene production at Plock, particularly following the start-up of the metathesis plant. Regarding other sources in Central Europe Helm increased the volume of propylene it markets from the PCK refinery at Schwedt in eastern Germany by more than 100,000 tpa from 1 January 2020.

PKN Orlen Group Chemical Sales (unit-kilo tons)		
	Jan-Sep 19	Jan-Sep 18
Monomers	787	688
Polymers	408	420
Aromatics	335	293
Fertilisers	771	823
Plastics	295	302
PTA	487	410

PKN Orlen, Jan-Sep 2019

PKN Orlen recorded an EBITDA of zł 3.2 billion in the third quarter which was an increase of nearly zł 800 million against the same period in 2018, underpinned by record-high crude throughput and 3% growth in total sales volumes.

In terms of petrochemical production for the period January to September 2019, monomers for Orlen rose to 787,000 tons from 688,000 tons in 2018. The increase was due largely to the increase in propylene production following the start-up of the metathesis plant in the second quarter.

Main Achievements for Orlen in Q3 2019

- Purchase of a license for Bioethanol Unit in Orlen Południe
- Construction of Polyethylene Unit in the Czech Rep.
- Construction of Glycol Unit in Orlen Południe

The third quarter this year witnessed the launch of Orlen Południe strategic propylene glycol unit project, as well as

the purchase of a licence and front-end engineering design for a bioethanol unit. Extension of fertilisers production in Włocławek. In the third quarter of 2019, both the model downstream margin and oil prices went down. Gasoline consumption grew across all markets, whilst diesel oil consumption rose in Poland, the Czech Republic and Lithuania, and stayed broadly unchanged in Germany.

PKN Orlen Petrochemical Margins (€ per ton)							
Product	Q1 18	Q2 18	Q3 18	Q4 18	Q1 19	Q2 19	Q3 19
Ethylene	652	630	644	640	578	593	568
Propylene	510	503	552	568	516	511	467
Toluene	166	192	213	195	172	218	178
Benzene	335	255	262	189	103	174	273
Butadiene	415	255	657	571	453	422	362
Paraxylene	387	362	431	628	534	487	366

Orlen's petrochemical margins reflected a downward trend for the main olefin and aromatic monomers, notwithstanding benzene which jumped from the second quarter and was just marginally higher than the third quarter last year.

Butadiene margins have seen the greatest fall in the past three years, after exceeding €1000 per ton in the first quarter in 2017 dropping to €362 per ton in the third quarter in 2019. Paraxylene margins dropped to €366 per ton in the third quarter in 2019 against €431 per ton in the same period last year.

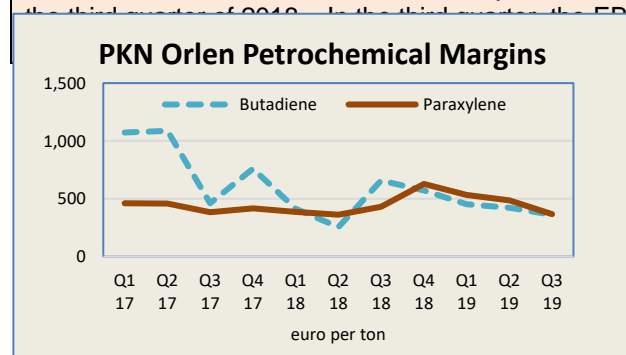
Orlen's downstream segment's EBITDA rose zł 640 million to zł 2.4 billion, supported by a 2% rise in sales volumes, including 13% for olefins, 2% for polyolefins, and 44% for PTA.

for PTA.

PKN Orlen has completed the due diligence process of Grupa Lotos, started in April 2018. The merger of fuel companies could take place in 2020 depending on the outcome of the decision from the European Commission whether the merger can proceed.

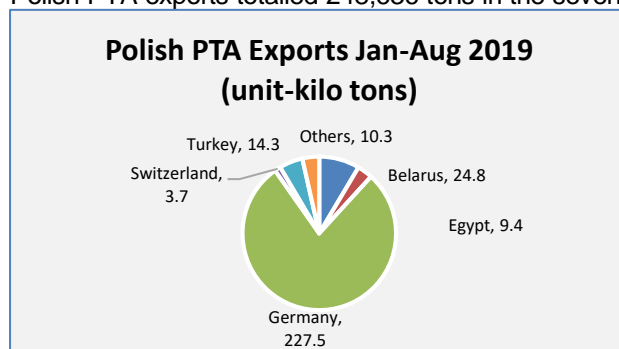
Unipetrol, Jan-Sep 2019

Unipetrol processed 2.1 million tons of crude oil in the third quarter, selling 1.8 million tons of refinery products and 429,000 tons of petrochemical products. Unipetrol posted a net profit of Kc 1.0 billion in the third quarter whilst revenues fell to Kc 34.8 billion from nearly Kc 36 billion in the third quarter of 2018. In the third quarter the EBITDA



Polish PTA exports, Jan-Aug 2019

Polish PTA exports totalled 248,636 tons in the seven months this year of which 197,479 tons was sent to Germany and 20,689 tons to Belarus. The PTA plant at Wloclawek possesses a production capacity of 600,000 tpa and was opened in 2011.



PKN Orlen phenol project contractor

At the beginning of 2020, the contractor for the new PKN Orlen phenol installation will be selected. The new installation is part of the PKN Orlen programme for the development of petrochemistry until 2023. The phenol installation is part of the petrochemical development programme approved

in 2019 by the management of PKN Orlen by 2023. Orlen has already finished the award of the base project license, so at the beginning of the next year there will be a choice of contractor for a new phenol installation.

Polish Phenol Imports (Jan-Jul 19)		
Country	Tons	€ million
Finland	8,360	8,179
Germany	57,281	53,904
Russia	2,265	1,981
Saudi Arabia	1,718	1,231
Others	349	0.589
Total	69,973	62,087

Polish phenol trade, Jan-Aug 2019

Poland imported 69,973 tons of phenol in the first eight months in 2019 at a total cost of €62.087 million. The major supplier was Germany providing 57,281 tons at a cost of €53.904 million, followed in second place with Finland with 8,360 tons at cost of €8.179 million. Other suppliers included Russia with 2,265 tons at €1.981 million and Saudi Arabia with 1,718 tons at a cost of €1.231

million. Poland exports only small volumes of phenol from its production plant at Plock.

PKN Orlen-ethylene and aromatics programme

Orlen's approved petrochemical development programme assumes the implementation of three key investments: construction of a complex of aromatic derivatives, expansion of the olefin complex, as well as expansion of phenol production capacity, supported by the development of research and development facilities necessary for its implementation.

PKN Orlen has licensed the UOP MaxEne™ process, which can increase production of ethylene and aromatics and improve the flexibility of gasoline production. The project for Plock facility is currently in the basic engineering stage. PKN Orlen continues to aim for the end of 2020 for clear outline of its investment

MOL's Olefin & Polyolefin Production (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Ethylene	591	603
Propylene	302	318
Butadiene	61	63
Raffinate	106	98
Product	Jan-Sep 19	Jan-Sep 18
LDPE	191	188
HDPE	304	303
PP	374	402

programme in petrochemicals. The group expects to invest more than zł 8 billion (€1.845 billion) in petrochemical projects by 2023. In the case of installations of olefin, phenol and aromatic derivatives, the group is already at the stage of acquiring licences and base projects and the choice of contractors of these investments should take place by end of 2020.

MOL, Q3 2019

Refining throughput for the MOL Group was substantially down in the second quarter due to the turnaround in the Bratislava refinery and the

Rijeka shutdown still affected the second quarter. Refined crude totalled 4.108 million tons which rose to 4.541 million tons in the third quarter this year.

In the first nine the MOL Group delivered \$1.890 billion in EBITDA, which was up on 2018 but only half of the full-year 2019 guidance. The downstream EBITDA amounted to \$229 million in the third quarter against \$265.8 million in the second quarter and \$320.3 million for the third quarter in 2018. Overall for the first three

quarters in 2019 MOL achieved a downstream EBITDA of \$609.2 million against \$895.4 million last year.

MOL Group Sales of Refined Products and Petrochemical (unit-kilo tons)				
Country	FY 2018	Q1 2019	Q2 2019	Q3 2019
Hungary	5,017	1,112	1,285	1,388
Slovakia	1,858	431	494	513
Croatia	2,008	411	552	710
Italy	2,061	441	503	564
Other markets	9,216	2,050	2,194	2,489
TOTAL	20,160	4,444	5,028	5,664

Ethylene production for the two sites at Tiszaújváros and Bratislava amounted to 591,000 tons in the first three quarters in 2019 against 603,000 tons in the same period in 2018, whilst propylene dropped by the same amount from 318,000 tons to 302,000 tons. Butadiene production at

Tiszaújváros dropped from 63,000 tons in January to September 2018 to 61,000 tons whilst raffinate production jumped to 106,000 tons from 98,000 tons.

MOL's strategic direction consists largely of moving from commodity polypropylene to semi-commodity polyol. This would allow a €400-500 per ton step-up in average margin capture. By 2023, the company

Czech Petrochemical Imports (unit-kilo tons)		
Product	Jan-Jun 19	Jan-Jun 18
Ethylene	1.2	1.2
Propylene	19.1	23.6
Butadiene	10.7	16.0
Benzene	47.4	44.3
Ethylbenzene	0.0	4.4
Styrene	10.0	4.7

estimates that it could gain an additional \$100 million EBITDA uplift from the polyol plant and other strategic projects. Polyol capacity under construction by MOL at Tiszaújváros is 200,000 tpa, including 70,000 tpa for propylene glycol. The EPC partner is Thyssenkrupp Industrial Solutions.

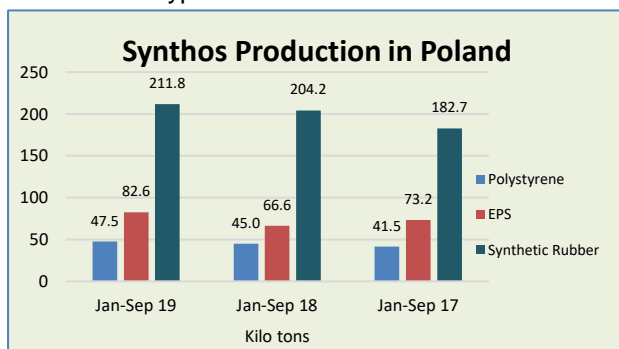
Lukoil Bourgas-polypropylene project

Lukoil intends to invest €1 billion in the modernisation of a refinery at Bourgas in Bulgaria. Previously Lukoil has been considering the possibility of launching a capacity of 150,000 tpa. Although this is not known yet to be part of the modernisation programme. The Bourgas refinery produces propylene and naphtha where investment is expected to increase capacity.

Lukoil plans to soon decide on a contractor for preparatory work on the site for a new polypropylene production at Bourgas. Applications from potential contractors for construction and installation works for arrangement of the site for new construction were accepted until 29 October. The refinery is able to process 9.5 million tpa of oil.

Synthos-GE Hitachi and LNG

Synthos and GE Hitachi Nuclear Energy (GEH) signed an agreement in October for cooperation on building a BWRX-300 type nuclear reactor in Poland. According to GEH the reactor is to be designed in order to allow that energy costs were competitive with other sources, such as gas or renewable energy.



Synthos plans to build a CCGT cogeneration gas source at Oswiecim with an electrical capacity of approximately 100 MW.

Regarding gas, PGNiG and Synthos signed an LNG supply contract earlier in 2019 which provides for delivery of 8,200 tons by the end of 2021. Gas will be used by Synthos for energy purposes, partially replacing coal.

In the first stage, transport is to take place by road tankers, the contract will require two deliveries a day. PGNiG wants to provide clients with approximately 20,000 tpa of LPG by 2021. LNG is to come from the

Polish Chemical Production (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Caustic Soda Liquid	275.7	241.8
Caustic Soda Solid	50.6	86.8
Ethylene	384.7	388.7
Propylene	330.9	248.3
Butadiene	47.2	39.8
Toluene	9.5	11.3
Phenol	33.6	35.4
Caprolactam	124.4	139.7
Acetic Acid	4.8	11.4
Polyethylene	274.5	289.2
Polystyrene	47.5	50.5
EPS	82.6	73.2
PVC	215.0	201.2
Polypropylene	257.2	226.0
Synthetic Rubber	211.8	225.3
Ammonia (Gaseous)	1778.0	2087.0
Ammonia (Liquid)	76.5	104.9
Pesticides	42.0	44.8
Nitric Acid	1719.0	1906.0
Nitrogen Fertilisers	1453.0	1639.0
Phosphate Fertilisers	341.5	359.0
Potassium Fertilisers	316.0	344.4

terminal in Świnoujście and from the PGNiG liquefaction installation in Odolanów and will go to the Synthos chemical plant at Oswiecim. LNG is to replace coal at the Synthos plant in some boilers for energy production.

Polymery Police-final investment structure

At the beginning of December 2019, Grupa Azoty expects to finalise the financing of the Polimery Police. The issue of shares being made by Grupa Azoty Police, combined with the binding offers from banks to finance the Polimery Police project, should lead to the finalisation of talks and the signing of contracts by the end of January 2020.

After providing the financing arrangements for the project, Grupa Azoty wants to instruct the contractor with the order to start work. To finance the project, banks are to spend around €914 million (about zł 4.3 billion). The remaining €609 million (approximately zł 2.8 billion) needed to close the investment budget will constitute equity. The public offering of Police shares with pre-emptive rights should end at the beginning of December.

Grupa Azoty currently owns 66% shares in Polimery Police through its special purpose vehicle Grupa Azoty Polyolefins. To finance the Polimery Police project, Grupa Azoty needs to obtain a total of zł 1.4 billion from investors outside the group. Around zł 500 million of

funds was agreed in September with Korean entities linked to the main contractor Hyundai Engineering.

Grupa Lotos has also expressed interest in the possibility of investing up to zł 500 million and will reach a decision on 22 November whether to proceed. If Lotos decides to enter the project, the assumed shareholding structure of Grupa Azoty Polyolefins will be completed. Polimery Police estimates that the total cost of the Polimery Police project may amount to €1.52 billion. The contract for the project was signed with Hyundai Engineering in April 2019 with a flat-rate price at €993 million. Completion of the Polimery Police Project is scheduled for the fourth quarter of 2022. The total estimated budget for implementing the

project is approximately €1.52 billion, of which approximately 1.2 billion will consist of investment outlays, including contractor's remuneration, license purchases and preparatory work.

Polymery Police-Main Investment Goals

- Propane Dehydrogenation (PDH) Unit;
- Polypropylene (PP) Production Unit;
- Polypropylene (PP) Logistics Infrastructure;
- Handling and Storage Terminal (gas terminal)
- Auxiliary Systems.

The production capacity of the emerging complex is to amount to 429,000 tpa of propylene and 437,000 tpa of polypropylene. The installations are to be designed on licenses (Oleflex from Honeywell Universal Oil Product and Unipol from Grace) enabling high flexibility in the production and supply of a wide

range of polypropylene grades. In addition, the scope of the project included the construction of a transshipment and storage terminal (gas terminal), capable of accepting up to 500,000 tpa of propane, logistics infrastructure and ancillary installations.

Grupa Azoty-Oxoviflex expansion

The new line for the production of dioctyl terephthalate (DOTP) of Grupa Azoty's ZAK division at Kedzierzyn-Kozle is operating normally, after the expansion was undertaken this year by 15,000 tpa from the previous 50,000 tpa of DOTP. In early September, the line was put into operation after construction was completed in July. After the company launched the production of phthalate-free plasticizer with a capacity of 50,000 tpa in April 2015, ZAK decided to abandon the use of phthalates in the production of plasticizers under the trade name Oxoplast.

Grupa Azoty, Jan-Sep 2019

Grupa Azoty's revenues rose from zł 7.2 billion to zł 8.2 billion in the first three quarters in 2019, whilst the EBITDA rose to zł 1.2 billion. Grupa Azoty increased its net profit in the first half of this year to zł 394.95 million (zł 270 million higher than in the same period in 2018) due mainly to low gas prices, helped by availability from the US. The company's sales revenues amounted to zł 6,102 billion in January to June 2019 against zł 4.877 billion. Operating profit amounted to zł 535.49 million versus zł 196.45 million in the same period last year.

Czech Petrochemical Exports (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Ethylene	64.6	60.4
Propylene	7.0	16.4
Butadiene	3.8	0.5
Benzene	31.9	25.0
Toluene	8.0	10.6
Ethylbenzene	116.5	91.2

Czech petrochemical exports, Jan-Sep 2019

Czech ethylene exports amounted to 64,600 tons in the first nine months in 2019 against 60,400 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 116,500 tons in January to September versus 91,200 tons. Propylene exports amounted to 7,000 tons in January to September 2019 against 16,400 tons in 2018.

Czech MDI Imports (unit-kilo tons)		
Country	Jan-Sep 19	Jan-Sep 18
China	1.4	2.3
Belgium	5.8	4.9
Germany	9.5	6.1
Italy	0.2	0.1
Hungary	3.1	5.4
Netherlands	0.9	0.7
Others	0.7	2.8
Total	21.7	22.3

Czech chemical trade, Jan-Sep 2019

TDI imports into the Czech Republic amounted to 4,869 tons in the first nine months in 2019 at a cost of €13.273 million, down from 8,700 tons in the same period in 2018 at a total cost of €23.991 million. The largest source of supply of TDI in the first nine months this year was Germany with 2,621 tons at a cost of €9.255 million. MDI imports amounted to 21,700 tons in the first nine months in 2019

against 22,300 tons in the same period in 2018, whilst costs of imports dropped from €37.897 million to €26.808 million.

Regarding DINP plasticizers, imports into the Czech Republic totalled 9,204 tons in January to September this year at a total cost of €11.219 million against 8,314 tons in January to September 2018 for a total cost of €10.195 million. DINP plasticizer exports from the Czech Republic totalled 30,996 tons in the first nine months in 2019 at a total cost of €36.668 million against 28,909 tons in the same period last year for €33.279 million.

RUSSIA

Russian Chemical Production (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Caustic Soda	960.9	946.5
Soda Ash	2,403.0	2,573.0
Ethylene	2,255.8	2,234.0
Propylene	1,797.4	1,707.1
Benzene	1,071.4	1,061.8
Xylenes	360.4	444.7
Styrene	543.7	552.6
Phenol	164.8	142.5
Ammonia	13,600.0	13,300.0
Nitrogen Fertilisers	8,442.0	7,881.0
Phosphate Fertilisers	3,156.0	2,968.0
Potash Fertilisers	6,186.0	6,374.0
Plastics in Bulk	6,338.0	6,136.0
Polyethylene	1,662.0	1,651.0
Polystyrene	401.9	408.5
PVC	768.3	742.1
Polypropylene	1,193.1	1,135.0
Polyamide	122.4	126.8
Synthetic Rubber	1,129.0	1,231.0

Russian chemical production, Jan-Sep 2019

Russia's output of chemical products increased by 3.6% in the first nine months of 2019. The largest increase in production volumes on an annualized basis were accounted for by mineral fertilisers and polymers in primary form. For ethylene production 2.256 million tons were produced in January-September 2019, up by 0.7%.

Benzene production amounted to 1,071 million tons in the first nine months of 2019, up by 0.6% whilst Russian xylene production totalled 360,400 tons in January to September 2019 against 444,700 tons in the same period in 2018. Production of caustic soda rose to 960,900 tons in the first nine months versus 946,500 tons a year earlier. Overall output of polymers in primary form totalled 6.338 million tons in the first nine months, up by 3.2%.

Russian chemical & polymer trade, Jan-Sep 2019

Regarding trade of chemical industry products, including plastics and rubber, Russia exported 39.698 million tons of in the first three quarters in 2019 for a total value of \$18.6 billion. Imports totalled 12.096 million tons for a value of \$33.2 billion. Average prices for exports comprised \$468 per ton and imports \$2,742 per ton. These average prices are consistent with numbers from 2018.

Russian Chemical Trade Jan-Sep 2019				
Category Group	Exports ktons	Exports \$ mil	Imports ktons	Imports \$ mil
Inorganic	6165	2620	4421	2760
Organic	5038	2850	1216	3130
Pharmaceuticals	29.1	572	126	8700
Fertilisers	24749	6230	278	119
Cosmetics	103	536	249	2420
Soap and detergents	105	134	428	1090
Paints & lacquers	239	272	469	1420
Protein substances, enzymes	16.3	38.1	187	511
Explosives	27.7	69.3	12.4	39.2
Photo chemicals	0.53	9.3	13.2	204
Other Chemicals	639	739	970	2530
Plastics	1534	2210	2954	7190
Syn & Nat Rubber	1052	2290	772	3060
Total	39,698	18,569.7	12095.6	33,173.2

Fertilisers accounted for 60% of export volumes by weight, with inorganic and organic chemicals accounting for 15% and 12% respectively. By value, exports of fertilisers accounted for 33% of total chemical product revenues in the first three quarters in 2019, whilst organic chemicals accounted for 15% of the sector and inorganic chemicals 14%.

Regarding imports, inorganic chemicals accounted for 37% of inward trade by weight but this only accounted for 8% of value. Imports of plastics comprised 23% of shipments and 21% of value whilst the largest value category came from pharmaceuticals which accounted for

24% of the sector although only accounting for 1% in weight.

Russian petrochemical projects

Ust Luga petrochemical complex, Russian-Chinese contract

Chinese and Russian companies signed a contract in October for the construction of a large gas chemical complex at Ust Luga in the Leningrad Region. The China National Chemical Engineering Corporation (CNCEC) and Rusgazdobycha signed an EPC contract for the construction of a plant as

part of the Baltic Chemical Complex project. The new plant is to be engaged in the processing of ethane-containing gas resulting in capacity of which will reach 2.8 million tpa of ethylene and 2.88 million tpa of polyethylene. The total investment is estimated at about \$13.2 billion.

Gazprom-Baltic Project Outline	
Gas processing	45 billion cubic metres per annum
Methane	19 billion cubic metres per annum
LNG	13 million tpa
LPG	2 million tpa
Ethane	4 million tpa
Ethylene	3 million tpa
Polymers	3 million tpa

The contract concluded by the parties involves the construction of two phases of the pyrolysis complex with a capacity of 1.4 million tpa of olefins, and six phases of polyethylene production with a capacity of 480,000 tpa. Other projects include for the production of alpha-olefins with a capacity of 137,000 tpa.

The project worth about 750 billion roubles consists of the construction of a gas processing plant, an LNG plant

Baltic Chemical Complex-technology licenses agreed with Univation and Lummus

Baltic Chemical Complex has selected Lummus technology for the cracker operations at Ust Luga. The agreement with Lummus Technology provides for the acquisition of licensing rights for ethylene production technology with a total volume of (1 and 2 stages) up to 3 million tpa (licensed capacity 2.8 million tpa). Furthermore a licensing agreement was signed with Univation Technologies for the supply of polyethylene production technology. In addition to UNIPOL technology Baltic Chemical Complex has agreed on the supply of catalysts and advanced catalyst systems for the production of HDPE, LLDPE and metallocene LLDPE. It is planned that the production volume will be up to 3 million tpa using 6 reactor units, on which UNIPOL PE technology will be applied to units each of 500,000 tpa capacity.

and a gas chemical complex. The aim is to process ethane-containing gas from the Achimov and Valanginian deposits of the Nadym-Pur-Tazav region with the subsequent production of 13 million tpa of LNG, up to 4 million tpa of ethane and more than 2.2 million tpa of LPGs. The launch of the first stage is scheduled for 2023 and the second by the end of 2024. The project operator is a special-purpose company RusHimAlliance, created on a parity basis by Gazprom and

RusGasDobycha.

SIBUR's LPG exports to drop by half after start-up of ZapSibNeftekhim

Following the start-up of the ZapSibNeftekhim complex at Tobolsk SIBUR is starting to reduce the volume of export transshipment of LPGs through the Ust Luga port on the Baltic coast in favour of processing. The new Tobolsk complex means that SIBUR expects to halve the sales of LPG, including for export (by 2.7 million tpa from 5.4 million tons in 2018). SIBUR estimates the consumption of LPG (propane and butane fraction) at ZapSibNeftekhim at its full load at 2.7 million tpa. Ethane supply requirements are estimated at 0.3 million tpa.

will make the equipment work waste-free. Production includes hydrocarbons (C4), from which butadiene and MTBE will be produced at ZapSibNeftekhim. Linde has acted as the licensor and technology developer for the Tobolsk complex, comprising pyrolysis capacity is 1.5 million tpa of ethylene and 0.5 million tpa of propylene. The capacity of ZapSibNeftekhim for the production of polypropylene is 500,000 tpa using a license provided by LyondellBasell. The capacity of the polyethylene production complex is 1.5 million tpa, using INEOS technology, which will effectively double the capacity of the PE market in Russia.

ZapSibNeftekhim-cracker furnaces

ZapSibNeftekhim's new olefin complex includes nine pyrolysis furnaces of which eight will be operational, and one will be held in reserve. Four of the furnaces differ in that they can process several types of raw materials both individually and jointly. The design of the apparatus allows SIBUR to increase the useful life of the pyrolysis furnaces by undertaking maintenance cleaning once every 2-4 years, while the existing pyrolysis plants (i.e., Tomsk, Kstovo) must be stopped for cleaning much more frequently.

The furnace fuel will comprise a mixture of methane and hydrogen released during the pyrolysis process, which

SIBUR operational performance Jan-Sep 2019

In the first nine months in 2019, SIBUR's revenue decreased by 4.5% to 395.4 billion roubles. Revenue from olefins and polyolefins increased by 4% to 77.9 billion whilst revenue from plastics, rubber and intermediates decreased by 6.1% to 117.1 billion roubles. Midstream revenue decreased by 6.6% to 162.6 billion roubles on the back of lower LPG and naphtha prices.

SIBUR's Financial results (million roubles)		
	Jan-Sep 19	Jan-Sep 18
Revenue (net of VAT and export duties):	395,360	414,016
Adjusted EBITDA ⁽⁴⁾	135,013	153,006
EBITDA	126,157	150,154
EBITDA margin, %	31.9%	36.3%
EBITDA by division:		
Olefins & Polyolefins	35,092	29,536
Plastics, Elastomers & Intermediates	16,250	27,086
Midstream	76,232	95,305
Capital expenditures	(100,194)	(104,949)

expenditures decreased by 4.5% to 100.2 billion roubles in January to September, mainly to the completion

SIBUR's Operating results		
Thousand tons, except as stated	Jan-Sep 19	Jan-Sep 18
Processing and production volumes		
APG processing (million cubic metres)	16,745	16,449
Raw NGL fractionation, SIBUR's share	5,699	5,677
Sales volumes of products in the Petrochemicals segments	2,767	2,755
Sales volumes in the Midstream segment	4,927	4,616

included test volumes of polypropylene and polyethylene which are being produced from the plant's own cracker feedstock mix. Other developments include agreement between SIBUR and Sinopec on the

Tatarstan petrochemical company performance, Jan-Sep 2019

Nizhnekamskneftekhim increased its net profit calculated by 9.5% for the three quarters of 2019 to 20.44 billion roubles against 18.66 billion roubles. The company received revenue in the amount of 132.88 billion roubles. The cost of sales decreased from 104 billion roubles to 96.7 billion roubles. Gross profit increased by 5% to 36.18 billion roubles. Nizhnekamskneftekhim produced 463,100 tons of ethylene in the first three quarters versus 480,000 tons in January to September 2018.

In the first nine months in 2019, Nizhnekamskneftekhim shipped 4,540,234 tons of cargo through the Urals railway system, which is 33,643 tons more than the same period last year. The export share of products shipped from Nizhnekamskneftekhim amounted to 58.3%.

Kazanorgsintez reduced its net profit by 26% for the first three quarters of 2019 to 11.74 billion roubles. The company's revenue decreased by 3% to 58.2 billion roubles. The cost of sales increased by almost 2 billion roubles, up to 37.12 billion roubles, whilst the gross profit decreased by 13.4% to 21.1 billion roubles.

From the second half of 2018 until about the autumn of 2019, the Russian polymer market has been under pressure from foreign players amid a global decline in prices. Kazanorgsintez emphasizes that significant pressure was exerted on sales of low-pressure polyethylene (HDPE), the supply of which was also launched by Azerbaijan and Turkmenistan.

fractionation volumes increased by 0.4% to 5.7 million tons. SIBUR increased the sales volumes for the majority of its products in the petrochemical segments, as well as the midstream segment, in comparison with the same period of 2018.

The EBITDA margin for SIBUR in the first three quarters was 32%, unchanged from last year. Overall though, the EBITDA decreased by 16% and amounted to 126 billion roubles, primarily on the back of weaker results in the midstream division, as well as in plastics, rubber and intermediates and an increase in PTA imports during the expansion of capacity at Polief.

This effect was partially offset by stronger results in the olefins and polyolefins division, where the EBITDA increased by 18.8%. SIBUR's net profit increased by 24.4% to 103.2 billion roubles in the first three quarters, largely on the back of the revaluation of the company's FX-denominated debt. Capital expenditures decreased by 4.5% to 100.2 billion roubles in January to September, mainly to the completion of the ZapSibNeftekhim complex where the largest cost outlays were made in 2018.

Important events for SIBUR in 2019 are dominated by the start-up of the ZapSibNeftekhim complex which has already passed the initial commissioning stages. This has included test volumes of polypropylene and polyethylene which are being produced from the plant's own cracker feedstock mix. Other developments include agreement between SIBUR and Sinopec on the creation of a JV in China to produce nitrile butadiene rubber (NBR) at a capacity of 50,000 tpa. SIBUR and Sinopec's shares in the enterprise will amount to 40% and 60% respectively. Domestic projects have included the start-up of the new DOTP plant at Perm whilst the maleic anhydride plant is under construction at Tobolsk.

SIBUR and Gazprom have signed a preliminary agreement setting out the key commercial terms for the supply of LPG from the Amur Gas Processing Plant to the Amur Gas Chemical Complex. According to the agreement, Gazprom will supply 1.5 million tpa of LPG and ethane fraction to the Amur GCC at formula-based prices.

SIBUR's gas processing plants (GPPs) processed 16.7 billion cubic metres of APG, an increase of 1.8%. As a result, dry stripped gas output totalled 14.5 billion cubic metres. Raw NGL

Russian petrochemical markets

Russian Ethylene Production (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Angarsk Polymer Plant	145.5	134.6
Kazanorgsintez	487.3	448.5
Stavrolen	232.8	240.7
Nizhnekamskneftekhim	463.1	480.3
Novokuibyshevsk Petrochemical	44.5	43.4
Gazprom n Salavat	241.4	285.9
SIBUR-Kstovo	304.0	278.9
SIBUR-Khimprom	40.2	41.8
Tomskneftekhim	201.9	192.2
Ufaorgsintez	93.2	83.5
Total	2253.9	2229.9

main source of olefin production in Russia which is supplied mostly from refineries either adjacent or close to petrochemical plants. Tomskneftekhim and Stavrolen both lack refineries and need to purchase merchant naphtha by rail and pipeline.

Russian Propylene Domestic Sales (unit-kilo tons)		
Company	Jan-Sep 19	Jan-Sep 18
Angarsk Polymer Plant	56.6	53.7
SIBUR-Kstovo	113.9	88.4
Akrilat	5.5	5.0
LUKoil-NNOS	175.1	158.5
Gazprom neftekhim Salavat	4.6	7.9
SIBUR Tobolsk	0.1	0.3
Total	269.0	255.0

tons. The major LPG suppliers to the merchant market include the Yuzhniy-Balyk Gas Processing Plant in the Tyumen Oblast, the Samara refineries at Novokuibyshevsk and Kuibyshev, and the Lukoil subsidiary Langepasneftegaz in the Khanty-Mansiisk region in West Siberia.

Russian Propylene Production (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Angarsk Polymer Plant	80.4	79.9
Kazanorgsintez	36.4	29.4
Lukoil-NNOS	223.4	204.6
Stavrolen	94.2	94.8
Nizhnekamskneftekhim	230.5	244.4
Novokuibyshevsk Petrochemical	34.0	31.1
Omsk Kaucuk	34.5	30.4
Polyom	135.2	148.8
Gazprom n Salavat	107.2	123.8
SIBUR Kstovo	131.2	123.4
SIBUR-Khimprom	44.0	47.9
Tomskneftekhim	108.1	102.6
SIBUR Tobolsk	358.3	324.9
Ufaorgsintez	140.2	130.9
Total	1757.4	1716.7

230,500 tons against 244,400 tons whilst Lukoil-NNOS produced 223,400 tons against 204,600 tons.

Russian sales of propylene on the domestic merchant market amounted to 269,000 tons in the first nine months in 2019 against 255,000 tons in the same period in 2018. Lukoil-NNOS at Kstovo shipped

Russian ethylene production, Jan-Sep 2019

Russian ethylene production amounted to 2.254 million tons in the first nine months in 2019 versus 2.230 million tons in the same period in 2018. Kazanorgsintez produced 487,300 tons in January to September 2019 against 448,500 tons in the same period last year whilst Nizhnekamskneftekhim produced 463,100 tons against 480,300 tons. Other important producers included SIBUR-Kstovo which produced 304,000 tons versus 278,900 tons and Gazprom neftekhim Salavat which produced 241,400 tons against 285,900 tons.

Regarding feedstocks, naphtha still provides the main raw material for olefin production for SIBUR-Kstovo and Novokuibyshevsk Petrochemical Plant. A total of 622,590 tons of LPGs were sold on the Russian open market in the first nine months in 2019 of which SIBUR-Kstovo purchased 444,871

LPGs provide additional feedstocks for some of the petrochemical producers, although acting as the main raw material for olefin production for SIBUR-Kstovo and Novokuibyshevsk Petrochemical Plant. A total of 622,590 tons of LPGs were sold on the Russian open market in the first nine months in 2019 of which SIBUR-Kstovo purchased 444,871

Kazanorgsintez continues to purchase other hydrocarbons to support ethane-based olefin production. 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. Propane supplies are purchased by Kazanorgsintez mostly from Uralorgsintez and SIBUR-Novatek at Tobolsk, usually in volumes of 8-10,000 tons per month.

Russian propylene production, sales & exports, Jan-Sep 2019

Russian propylene production amounted to 1,757 million tons in the first nine months in 2019 against 1,717 million tons in the same period last year. SIBUR-Tobolsk increased production to 358,300 tons against 324,900 tons in the first nine months in 2018. Nizhnekamskneftekhim produced

158,500 tons to the domestic market in the first nine months against 175,100 tons in 2018, SIBUR-Kstovo shipped 113,900 tons to the merchant market against 88,400 tons and Angarsk Polymer Plant reduced shipments from 53,700 tons to 56,600 tons.

Major Russian Propylene Buyers (unit-kilo tons)		
Consumer	Jan-Sep 19	Jan-Sep 18
Saratovorgsintez	135.4	138.9
SIBUR-Khimprom	6.8	8.8
Omsk-Kaucuk	6.9	10.7
SIBUR Tobolsk	45.4	51.2
Moscow Refinery	13.9	5.1

The largest merchant consumer of propylene in Russia is acrylonitrile producer Saratovorgsintez at Saratov which purchased 135,400 tons in the first nine months against 138,900 tons in the same period in 2018. The second largest merchant consumer is SIBUR Tobolsk which purchased 96,000 tons in January to September 2019 versus 49,600 tons in the same period in 2018.

Russian Propylene Exports (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Lukoil-NNOS	31.8	47.7
SIBUR-Kstovo	6.1	9.6
Stavrolen	11.8	10.4
Total	49.7	67.6

Russian propylene exports amounted to 49,700 tons in the first nine months versus 67,600 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. The main destinations for Russian propylene exports included

Belarus and Poland, although in recent months volumes to Poland have declined due to competition from Karpatneftekhim in Ukraine.

Russian Styrene Production (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Nizhnekamskneftekhim	208.2	206.2
Angarsk Polymer Plant	24.2	21.4
SIBUR-Khimprom	89.6	91.7
Gazprom n Salavat	126.3	131.5
Plastik, Uzlovaya	34.2	40.0
Total	482.5	490.7

Russian styrene production & sales, Jan-Sep 2019

Russia produced 482,500 tons of styrene in the first nine months in 2019 versus 490,700 tons in the same period in 2018. Gazprom neftekhim Salavat increased styrene production to 126,300 tons against 131,500 tons, followed by SIBUR-Khimprom at Perm where production produced 89,600 tons against 91,700 tons.

Styrene exports from Russia increased to 91,000 tons in the first nine months in 2019 against 80,200 tons in the same period in 2018. Gazprom neftekhim Salavat shipped 78,100 tons in the first nine months against 64,800 tons, whilst Angarsk Polymer Plant shipped 6,800 tons this year against 6,500 tons.

Russian Styrene Exports (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Angarsk Polymer Plant	6.8	6.5
Plastik Uzlovaya	0.2	3.6
Gazprom neftekhim Salavat	78.1	64.8
Nizhnekamskneftekhim	4.6	0.0
SIBUR-Khimprom	1.3	5.4
Total	91.0	80.2

The main destination for styrene exported from Salavat is Finland taking 75% of shipments in the first three quarters in 2019, followed by Norway and Turkey. The increase in production at Salavat in the first nine months this year enabled a rise in both exports and domestic sales.

Styrene sales on the Russian domestic merchant market totalled 82,800 tons in January to September 2019 against 81,000 tons in the same period in 2018, with Gazprom neftekhim Salavat increasing shipments from 26,200 tons to 32,100 tons and SIBUR-Khimprom increasing shipments from 28,600 tons to 32,200 tons. Revenues from the export of styrene from Russia totalled \$92.5 million.

Russian Styrene Domestic Sales (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Angarsk Polymer Plant	15.8	13.4
Plastik	0.7	9.0
Gazprom n Salavat	32.1	26.2
SIBUR-Khimprom	32.2	28.6
Nizhnekamskneftekhim	2.1	3.8
Total	82.8	81.0

SIBUR-Khimprom uses styrene for the production of expandable polystyrene. Main Russian consumers for merchant styrene include rubber producers such as Voronezhskintezkaucuk.

Bulk Polymers

Russian HDPE Production (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Kazanorgsintez	401.5	395.6
Stavrolen	214.2	222.4
Nizhnekamskneftekhim	0.0	24.0
Gazprom n Salavat	77.0	90.1
Total	692.7	732.1

Russian HDPE production Jan-Sep 2019

Russian HDPE production amounted to 695,200 tons in the first nine months in 2019, against 732,100 tons in the same period in 2018. The start-up of HDPE production at Budyennovsk took place in late October whilst Kazanorgsintez resumed its HDPE production on 20 October after a scheduled turnaround, having started on 14 September.

Kazanorgsintez increased HDPE production by 1% in January to September 2019 to 692,700 tons, whilst Stavrolen increased by 4% to 214,200 tons. Gazprom neftekhim Salavat produced 77,000 tons of HDPE in the first nine months 2019 versus 90,100 tons in the same period in 2018.

ZapSibNeftekhim produced ethylene on 17 October and the first polyethylene pellets were released from it. After the start of production at full capacity, the petrochemical complex will produce 1.5 million

Kazanorgsintez polymer revenues, Jan-Sep 2019

Kazanorgsintez increased revenue from sales of LDPE by 6% over the first nine months. Revenue from sales of polycarbonates decreased by 29%. The revenue from the sale of HDPE rose 11.6% over the same period in 2018 whilst the share in total company revenues increased from 49.4% to 53.6%. Kazanorgsintez produced 1,500 tons of metallocene linear polyethylene in the first half of 2019 and aims to produce 5-7,000 tons for the full year. Competition for metallocene brands is currently driven by SABIC and ExxonMobil.

tpa. In spring, a test batch of polyethylene on imported raw materials was produced at ZapSibNeftekhim.

In total, ZapSibNeftekhim has four polymerisation plants for the production of various grades of high-density polyethylene (HDPE) and linear low-density polyethylene (LLDPE) with a total capacity of 190 tons per hour (technology from INEOS). From Tobolsk polyethylene will be produced pressure pipes, auto parts, blown containers (bottles, cans, barrels, jars for cosmetics and yoghurts), films for food and industrial packaging, cable products.

From 1 September Stavrolen stopped the production of HDPE and polypropylene for scheduled maintenance, which lasted for around 45 days, whilst Kazanorgsintez held a shutdown at its HDPE plant from 14 September to 21 October. Kazanorgsintez is currently undertaking a reactor modernisation project with equipping it with a recovery system at the plant for the production and processing of HDPE. The implementation of the project will allow the return 8,760 tons of hydrocarbon gases to the process, rather than sending them to the flare. The modernisation of one of the three reactors of the plant for the production and processing of HDPE, reactor B, is planned for the period from 2019 to 2022.

Russian polyethylene trade, Jan-Sep 2019

Russian polyethylene exports increased 10% to 275,000 tons in the first three quarters in 2019 of which LDPE comprised 155,000 tons and HDPE 110,000 tons. Polyethylene imports to the Russian market grew by 18% in January-September 2019. For three quarters, 543,000 tons of polyethylene of various grades from abroad were imported, including 266,900 tons of HDPE which was 47% up. LDPE imports into Russia for the period January to September 2019 rose 16% to 78,500 tons whilst LLDPE dropped 7% to 127,100

tons. Imports of ethylene-vinyl acetate (EVA) and other ethylene polymers for the period amounted to 70,600 tons against 74,100 tons in 2018.

Russian Polypropylene Production (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Ufaorgsintez	96.2	94.7
Stavrolen	81.6	86.3
Moscow NPZ	108.6	99.1
Nizhnekamskneftekhim	161.3	160.5
Polyom	156.7	165.6
Tomskneftekhim	108.8	103.7
SIBUR Tobolsk	346.5	319.5
Total	1059.7	1029.4

Russian polypropylene production & trade, Jan-Sep 2019

Polypropylene production at Russian plants decreased by 1.3% in the first three quarters in 2019 to 1.06 million tons. In September, output fell to 85,700 tons against 119,000 tons in August after four out of seven producers stopped for maintenance. SIBUR-Tobolsk reduced production by 5% in January to September 2019 to

346,500 tons, whilst Polyom at Omsk reduced the production of propylene polymer by 6% to 156,700 tons. Stavrolen reduced polypropylene production to 81,300 tons against 83,600 tons in the first nine months in 2018 and Nizhnekamskneftekhim produced 161,300 tons of polypropylene, against 160,700 tons. Stavrolen resumed its polypropylene production at Budyennovsk in mid-October after a long-scheduled turnaround, starting 6 September. Tomskneftekhim produced 108,800 tons of polypropylene, an increase of 5%, whilst Ufaorgsintez increased by 2% to 96,200 tons and NPP Neftekhimya at Moscow increased by 10% to 108,600 tons.

Russian exports of polypropylene totalled 260,000 tons of polypropylene in January to September 2019 against 248,000 tons in the same period last year. Imports of polypropylene to Russia decreased by 5% in the first three quarters compared to the same period in 2018 and amounted to 137,200 tons from 144,700 tons. Polypropylene homo imports amounted to 43,200 tons in January to September against 51,800 tons in 2018, whilst imports of block copolymers to Russia amounted to 43,200 tons against 36,000 tons. Propylene copolymer imports amounted to 23,900 tons against 26,900 tons and imports of propylene polymers amounted to 27,000 tons against 30,000 tons in 2018.

Russian PVC Production (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Bashkir Soda	192.4	190.0
Kaustik	57.9	69.7
RusVinyl	257.1	243.3
Sayanskkhimplast	213.2	197.0
Total	720.6	700.0

Russian PVC production & trade, Jan-Sep 2019

Russian PVC production increased by 6% in January-September 2019 to 720,600 tons compared to 700,000 tons. RusVinyl produced 257,100 tons, which is 7% more than in 2018, Sayanskkhimplast produced 213,200 tons against

197,000 tons and Bashkir Soda company produced 192,400 tons against 190,000 tons for the same period in 2018. Kaustik at Volgograd reduced production to 57,900 tons against 69,700 tons in January to September 2018. Exports of suspension PVC into Russia totalled about 142,100 tons in the first nine months of 2019 compared to 96,200 tons, up by 48%.

Paraxylene-PTA-PET

Russian Paraxylene Domestic Sales (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Gazprom Neft	0.0	44.6
Ufaneftkhim	70.3	89.1
Kinef, Kirishi	0.0	0.0
Total	70.3	133.7

Russian paraxylene domestic sales, Jan-Sep 2019

Paraxylene sales on the Russian market dropped to 70,300 tons in the first three quarters in 2019 against 133,700 tons in the same period in 2018. Ufaneftkhim reduced sales from 89,100 tons to 70,300 tons whilst Gazprom Neft did not ship any paraxylene in the first three quarters in 2019 against 44,600 tons in the same period in 2018. SIBUR's paraxylene purchases from Russian refineries amounted to 176,386 tons in 2018 against 177,061 tons

in 2017.

Russian paraxylene exports, Jan-Sep 2019

Russian oil refineries increased the export of paraxylene in the first three quarters to 132,100 tons against 117,000 tons in the same period in 2018. Gazprom Neft, the largest exporter of paraxylene, increased shipments to foreign markets by 14,900 tons to 90,700 tons. Ufaneftkhim increased export deliveries by

Russian Paraxylene Exports (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Gazprom Neft	90.7	75.8
Ufaneftkhim	12.9	8.4
Kirishinefteorgsintez	42.8	44.4
Total	146.4	128.6

4,500 tons to 12,900 tons. The Kirishi oil refinery exported 42,800 tons of paraxylene in the first three quarters, which is 1,600 tons less than a year earlier. The bulk of exports went to the Finnish port of Kotka, where paraxylene was loaded onto the Oiltanking terminal.

Following the process of modernisation Polief is increasing the consumption of Russian paraxylene by roughly 4,200 tons per month in the fourth quarter, to around 19,500 tons per month or in total to 230-235,000 tpa). PTA capacity has been increased by 78,000 tpa to a total of 350,000 tpa. The modernisation and expansion at Blagoveshchensk started on 6 February 2019 and the process was completed in June 2019. During the third quarter, the installation was gradually revived and is soon expected to reach its design capacity.

Russian PTA imports, Jan-Sep 2019

PTA imports into Russia totalled 291,100 tons in the first nine months in 2019 against 189,600 tons in the same period in 2018. China increased shipments to Russia to 210,100 tons in January to September 2019 against 110,400 tons in the same period last year whilst South Korea reduced deliveries from 57,000 tons to 54,100 tons.

Russian PTA Imports (unit-kilo tons)		
Country	Jan-Sep 19	Jan-Sep 18
Belgium	17.9	1.6
India	1.0	5.7
China	210.1	110.4
South Korea	54.1	57.0
Poland	3.0	0.0
Turkey	2.0	0.0
Thailand	3.0	15.0
Total	291.1	189.6

Thailand supplied 2,970 tons of PTA to Russia in January to September 2019 versus 15,000 tons in the same period in 2018, although most of the shipments from this year were delivered in the first quarter.

The cost of imported PTA in the first nine months in 2019 amounted to \$257.5 million against \$151.9 million in the same period last year. Ekopet at Kaliningrad accounted for 67.4% of imports (\$190.7 million in value) in January to September 2019 against 71.4% in 2018.

Russian PTA Imports (unit-kilo tons)		
Location	Jan-Sep 19	Jan-Sep 18
Kaliningrad	190.7	135.0
Moscow	45.0	55.0
Others	55.4	0.0
Total	291.1	189.6
Russian PTA Imports (\$ million)		
Location	Jan-Sep 19	Jan-Sep 18
Kaliningrad	165.2	107.8
Moscow	39.1	44.1
Others	53.2	0.0
Total	257.5	151.9

Ekopet at Kaliningrad (formerly Alko-Naphtha)

Ekopet at Kaliningrad (formerly Alko-Naphtha) plans to stop PET production for extended maintenance in January 2020. At present the plant is running at 100% of capacity, and in August 2019 started supplying PET to North America.

Alka-Naphtha was officially renamed Ekopet in 2017 although the former name is still used occasionally. The capacity of the PET plant at Kaliningrad is 220,000 tpa, starting production in 2011, and the plant is the major buyer of imported PTA into Russia.

In the first nine months this year Ekopet imported 190,700 tons of PTA against 135,000 tons in the same period last year, whilst the other major importer Senezh imported 45,000 tons against 55,000 tons in January to September 2018. Senezh is located in the

Moscow area and stopped the production of PET for scheduled repairs in October. Senezh is part of the Europlast group and has a capacity of 100,000 tpa

Completed repairs on PTA plant at Polief

SIBUR reduced purchases of paraxylene in the first three quarters to 66,500 tons against 129,700 tons in the same period in 2018. PTA production at Blagoveshchensk dropped from 201,900 tons in January to

SIBUR's PTA & PET Production (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Paraxylene Purchases	66.5	129.7
PTA Production	85.0	201.9
PTA Domestic Sales	3.1	3.9
PTA Exports	0.2	3.1
PET Production	200.3	218.7
PET Domestic Sales	201.0	225.6
PET Exports	3.4	0.7

September 2018 to 85,045 tons in 2019, having been reduced in order to allow the modernisation and expansion. This has consisted of an increase of capacity of PTA from 272,000 tpa to 350,000 tpa.

The Blagoveshchensk plant produced 269,000 tons of PTA in 2018. The PTA expansion will ensure full load of the new installation for the production of eco-friendly plasticizer DOTP, which SIBUR launched in the spring of 2019 at Perm.

Trying to restart the PTA plant after its expansion has not been straightforward as there was a small leak in August which caused problems and followed by the occurrence of a much larger environmental incident in October. This larger case comprised of 8,000 tons of industrial effluents leaked into the river Izyak, killing fish stocks en masse and threatening the water system of nearby Ufa. This has yielded some very negative press for SIBUR in Bashkortostan which as a company may be now facing a fine although it is unlikely any executives will face prosecution. Local people are already very sceptical of the safety of chemical plants and the chemical industry per se, and this latest incident will help to strengthen those views.

Aromatics

Russian Benzene Production (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Rosneft	100.9	110.7
Gazprom Neft	54.1	81.9
Lukoil	73.0	86.7
Magnitogorsk MK	38.4	42.6
Nizhnekamskneftekhim	204.4	175.5
Novolipetsk MK	4.7	6.1
Gazprom Neftekhim Salavat	133.6	131.2
Kirishinefteorgsintez	57.0	49.2
Slavneft	43.7	55.0
Severstal	30.2	27.8
Bashneft	52.9	70.4
Ural Steel	7.8	6.6
Uralorgsintez	64.3	68.3
Zapsib	56.5	54.0
SIBUR	60.9	57.1
Total	982.3	1023.0

Russian benzene production-sales, Jan-Sep 2019

Russian benzene production totalled 982,300 tons in January to September 2019, of which the largest producer was Nizhnekamskneftekhim producing 170,000 tons versus 136,100 tons in the same period in 2018. At the end of last year, Nizhnekamskneftekhim increased the production capacity of benzene to 265,000 tpa.

Rosneft's three plants at Angarsk, Novokuibyshevsk and Ryazan produced a combined total of 100,900 tons against 110,700 tons. Gazprom Neft at Omsk reduced benzene production from 81,900 tons to 54,100 tons.

Regarding plant operations Gazprom neftekhim Salavat's restarted production in the middle of October after a ten-day outage at its reforming plant. This enabled the Salavat plant to increase spot sales of benzene from 2,000 tons to 4,000 tons. However,

supply in October was affected overall by outages and restarts. The Omsk refinery was down for a 40-day stoppage which started in September whilst other stoppages were undertaken by Stavrolen, SIBUR-Kstovo and Kirishinefteorgsintez.

In October, a decrease in the production of coal benzene also took place at Severstal for five days and the West Siberian MK plant for about 10 days. On the plus side for supply availability, the Novolipetsk Metallurgical Plant resumed production of benzene for nitration in October. The first batches of aromatic raw materials of 64 tons were shipped on 13 October to Promsintez. The last time benzol for nitration was shipped from the Novolipetsk plant in April 2019.

Benzene sales on the Russian domestic merchant market amounted to 578,500 tons in the first nine months in 2019 against 605,600 tons in January to September 2018. Kuibyshevazot remains the largest merchant buyer, purchasing 135,400 tons in the first nine months in 2019 against 151,500 tons in the same period last year. Azot at Kemerovo bought 91,300 tons in the first nine months versus 99,100 tons in 2018, whilst Shchekinoazot purchased 48,700 tons against 54,700 tons. For the production of cumene Kazanorgsintez purchased 46,000 tons of benzene in January to September 2019.

Russian Benzene Consumers (unit-kilo tons)		
Consumer	Jan-Sep 19	Jan-Sep 18
Kuibyshevazot	135.4	151.5
Azot Kemerovo	91.3	99.1
Shchekinoazot	48.7	54.7
Kazanorgsintez	46.0	50.3
Omsk Kaucuk	12.9	14.5
Nizhnekamskneftekhim	1.5	28.9
Samarorgsintez	38.8	25.2
Zapsib	48.5	39.5
SIBUR-Khimprom	74.3	46.7
Ufaorgsintez	18.8	2.6
Uralorgsintez	57.8	48.4
Others	4.5	44.2
Total	578.5	605.6

Factors explaining the fall in lower merchant benzene purchases this year include lower production of caprolactam, combined with the loss of Nizhnekamskneftekhim to the market following an increase in the company's own production.

Russian benzene trade, Jan-Sep 2019

Russian exports of benzene totalled 67,300 tons in January to September 2019 against 54,300 tons in the same period in 2018. Kirishinefteorgsintez increased exports to 19,500 tons against 13,200 tons, whilst the Magnitogorsk Metallurgical Plant reduced shipments from 12,700 tons to 9,700 tons. In the first nine months in 2019 Russian imports of benzene increased to 49,000 tons. The product was shipped from Karpatneftekhim in Ukraine (26,700 tons), Atyrau oil refinery in Kazakhstan (16,900 tons) and Kremenchug oil refinery in Ukraine (2,000 tons). The

number of suppliers has also increased this year to include the Belarusian refinery Mozyr.

Russian Benzene Exports (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Altay-Koks	0.7	4.7
Chelyabinsk MK	1.4	1.2
Gazprom Neft	0.0	1.6
Gazprom neftekhim Salavat	0.7	3.7
Koks	5.0	3.8
Magnitogorsk MK	9.7	12.7
Moskoks	6.7	4.9
Nizhniy Tagil	3.4	0.0
Novolipetsk MK	10.0	1.3
Kirishinefteorgsintez	19.5	13.2
SIBUR-Kstovo	2.0	1.4
Severstal	1.4	0.0
Ufaneftekhim	1.1	0.0
Uralorgsintez	0.6	0.0
Ural Steel	5.3	5.7
Total	67.3	54.3

The largest recipient of imported benzene in Russia is Kuibyshevazot. For nine months of 2019, the company purchased 16,900 tons from the Atyrau refinery although deliveries over August and September were affected by technical difficulties at the Kazakh plant. In Ukraine, only coal-tar benzene was shipped from Ukraine to the Russian market in 2018 for the synthesis of Zaporozhkoks. However, this year no shipments have been made from Zaporozhkoks due to Russian sanctions against Ukraine.

Russian caprolactam production, Jan-Sep 2019

The three Russian caprolactam producers remain the largest domestic merchant consumers of benzene, followed by styrene and phenol producers. Russian caprolactam production amounted to 220,200 tons in January to September 2019 against 236,100 tons in January to September 2018. Kuibyshevazot reduced production from 161,100 tons to 156,800 tons whilst SDS Azot at Kemerovo dropped to 95,000 tons from 61,600 tons.

Russian Caprolactam Production (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Kuibyshevazot	156.8	161.1
Shchekinoazot	45.4	40.8
SDS Azot	81.6	95.0
Total	283.8	296.9

Kuibyshevazot Jan-Sep 2019

Kuibyshevazot achieved revenue of 40.8 billion roubles in the first three quarters in 2019, down 2% as was net profit which amounted to 3.62 billion roubles. The decline in financial indicators is due to changes in market conditions and rising energy prices. Kuibyshevazot is currently undertaking a

project in conjunction with the Maire Tecnimont Group on the construction of a new urea unit.

Kuibyshevazot-Production (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Polyamide-6	111	113.6
High Tenacity Tech Yarns	3.8	3.9
Tyre Cord Fabric	2.5	2.7
Caprolactam	156.8	161.6
Ammonia	800.1	847.0
Urea	273.6	271.6
Ammonium Nitrate	491.1	463.3
Ammonium Sulphate	391.5	408.8

An integrated approach to the modernisation and reconstruction of existing industries by Kuibyshevazot allows the company to reduce the consumption of energy and raw materials. In the first nine months of the current year, the specific consumption per ton of production was reduced including natural gas by 0.7%; benzene by 2.4%, hydrogen by 1%; caustic soda by 3.7%; and heat energy by 6.7%.

Russian orthoxylene market, Jan-Sep 2019

Orthoxylene sales on the Russian domestic market amounted to 102,200 tons in January to September

2019 against 107,200 tons in same period last year. Kamteks-Khimprom remains the largest buyer in Russia, purchasing 58,200 tons in the period January to September 2019 against 58,700 tons in the same period in 2018. Gazprom neftekhim Salavat increased purchases from 7,800 tons to 8,700 tons whilst other buyers were much smaller, taking volumes of several hundred tons.

Russian Orthoxylene Domestic Sales (unit-kilo tons)		
Company	Jan-Sep 19	Jan-Sep 18
Gazprom Neft	73.3	57.7
Ufaneftekhim	20.8	22.4
Kinef, Kirishi	9.0	27.1
Total	103.2	107.2

Some of the applications are fairly wide-ranging, including fuel and paints. The main outlet for orthoxylene thus remains phthalic anhydride where production in Russia totalled 75,700 tons in the first nine months in 2019 versus 70,300 tons in the same period last year.

in January-September 2019, export deliveries of orthoxylene from Russia more than halved to 45,600 tons. The bulk of the orthoxylene was sent to the Finnish port of Kotka for further transshipment at the Oiltanking complex. Shipments in this direction decreased by 36,400 tons to 33,700 tons. The product was exported by the Kirishi oil refinery in the amount of 21,000 tons, Ufaneftekhim (7,400 tons) and the Omsk oil refinery (5,300 tons).

Russian Toluene Domestic Sales (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Novopiletsk MK	0.0	0.0
Slavneft-Yanos	9.4	12.5
Severstal	4.4	3.4
LUKoil-Perm	21.8	19.3
Gazprom Neft	37.7	52.9

11,100 tons.

Toluene sales on the domestic market totalled 106,500 tons in the first nine months in 2019 against 116,200 tons in the same period last year. The largest supplier to the domestic market was Gazprom Neft at the Omsk refinery which shipped 37,700 tons against 52,900 tons in the same period in 2018. Kirishinefteorgsintez shipped 27,800 tons of toluene to the domestic market for the first three quarters against 25,000 tons in January to September 2019.

Russian Phenol Production (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Ufaorgsintez	57.1	43.6
Kazanorgsintez	52.1	51.1
Novokuibyshevsk Petrochemical	55.6	47.7
Total	164.9	142.4

Russian Market Phenol Sales by Supplier (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Novokuibyshevsk Petrochemical	42.7	34.9
Kazanorgsintez	2.8	4.5
Ufaorgsintez	51.3	36.9
Borealis	1.3	8.5
Total	98.1	84.8

Russian phenol market, Jan-Sep 2019

Russian phenol production rose in the first nine months in 2018 from 142,400 tons in 2018 to 164,900 tons in the same period in 2019. Novokuibyshevsk Petrochemical increased production from 47,700 tons to 55,600 tons whilst Ufaorgsintez increased production from 43,600 tons to 57,100 tons. Kazanorgsintez produced 52,100 tons versus 51,100 tons.

Sales of phenol on the Russian domestic market rose in the first nine months from 84,800 tons to 96,100 tons. The two largest suppliers were Novokuibyshevsk Petrochemical and Ufaorgsintez. The largest consumers are focused on the production of resins.

Omsk Kaucuk to launch phenol and acetone production before the end of 2019

The production of phenol and acetone at Omsk Kaucuk, part of the Titan Group of Companies, will be launched in the next few weeks. The old plant stopped production in March 2014 after a serious fire and has been completely revamped and upgraded, enabling a four-fold reduction in the environmental impact from plant operations.

Russian phenol exports, Jan-Sep 2019

Phenol exports totalled 16,100 tons in the first nine months in 2019, considerably up from 2018. Belarus took 34.4% of deliveries, followed by Poland with 20.7% and the Netherlands 16.5%. Cumene exports totalled 31,000 tons in the first eight months against 19,200 tons in the same period in 2018. August shipments totalled 7,400 tons for a total cost of \$5.7 million, of which 2,960 tons came from Omsk and 4,410 tons came from Novokuibyshevsk.

The updated facilities have increased the production capacity of phenol up to 90,000 tpa and acetone up to 55,800 tpa. Both products are available at 99.5% purity. Commissioning of the plant at Omsk has been put back on several occasions but is now in the final stages before launch.

The phenol and acetone plant represent the first stage of investment for Omsk Kaucuk's strategic programme. The second stage consists of the processing of acetone into isopropanol, with a plant capacity of 30,000 tpa which is being financed through a soft loan combined with the company's own funds. This plant is not expected to be operational until 2023. The third phase of programme for Omsk Kaucuk comprises the construction of a plant for bisphenol A with a capacity of 118,000 tpa. The last stage, planned for 2025, focuses on the construction of a new plant for epichlorohydrin.

Synthetic rubber

Russian C4 Purchases (unit-kilo tons)		
Consumer	Jan-Sep 19	Jan-Sep 18
Omsk Kaucuk	40.0	41.5
Nizhnekamskneftekhim	143.2	110.6
SIBUR Togliatti	134.5	139.0
Total	317.7	291.2

Russian C4s, Jan-Sep 2019

C4 sales on the domestic market in Russia totalled 317,700 tons in the first nine months in 2019 against 291,200 tons in the same period in 2018. SIBUR Togliatti reduced merchant purchases of C4s from 139,000 tons to 134,500 tons, whilst Nizhnekamskneftekhim increased purchases from 110,600 tons to 143,200 tons and Omsk Kaucuk rose

from 41,500 tons to 40,000 tons.

The largest supplier in the first nine months consisted of SIBUR-Kstovo which shipped 66,700 tons against 70,300 tons in the same period in 2018. Tomskneftekhim shipped 57,400 tons in January to September 2019 versus 47,700 tons, whilst Stavrolen dropped from 55,300 tons to 43,600 tons. Gazprom neftekhim Salavat supplied a total of 27,800 tons of C4s to Nizhnekamskneftekhim and SIBUR Togliatti, against 200 tons in the same period last year.

Russian butadiene production, Jan-Sep 2019

The production of butadiene in Russia decreased by 7% in the first three quarters and amounted to 400,900 tons. The main reason for the decrease in butadiene production is slightly lower export activity for synthetic rubber, and a slight fall in production volumes to 1.029 million tons in January to September 2019.

SIBUR-Synthetic Rubber Production (unit-kilo tons)		
	Jan-Sep 19	Jan-Sep 18
Commodity Rubber	236.8	236.5
Speciality Rubber	83.2	79.6
Thermoplastic elastomers	61.6	57.7
Total	381.5	373.8
SIBUR-Synthetic Rubber Domestic Sales (unit-kilo tons)		
	Jan-Sep 19	Jan-Sep 18
Commodity Rubber	85.6	84.3
Speciality Rubber	8.7	9.9
Thermoplastic elastomers	31.5	38.0
Total	125.7	132.2
SIBUR-Synthetic Rubber Export Sales (unit-kilo tons)		
	Jan-Sep 19	Jan-Sep 18
Commodity Rubber	165.1	142.7
Speciality Rubber	73.7	64.6
Thermoplastic elastomers	29.9	23.5
Total	268.7	230.7

Omsk Kaucuk and Sterlitamak Petrochemical Plant reduced butadiene production in the first three quarters, respectively, by 28% and 46% against the same period in 2018. SIBUR was the only producer to increase production of butadiene in 2019, rising from 207,772 tons in the first three quarters to 212,679 tons. Nearly all of the butadiene produced at Tobolsk was consumed within the SIBUR Group at Togliatti and Voronezh.

SIBUR, synthetic rubber, Jan-Sep 2019

SIBUR produced 381,500 tons of synthetic rubber in the first three quarters in 2019 against 373,800 tons in the same period in 2018. Thermoplastic elastomer production at Voronezh rose from 57,700 tons to 61,600 tons whilst production of speciality rubber rose from 79,600 tons to 83,200 tons.

A total of 66.6% of synthetic rubber sales came from exports in the three quarters in 2019, rising from 63.6% in the same period last year. Exports of synthetic rubber rose from 230,078 tons in the first three quarters in 2018 to 268,851 tons in the same period this year. The largest rise was recorded for commodity rubber exports, comprising 164,749 tons versus 142,241 tons in January to September 2019. Domestic sales for SIBUR dropped from 36.8% in the first three quarters last year to 33.4%, dropping from 14.795 billion roubles to 14.051 billion roubles. In volume terms, domestic synthetic rubber sales for SIBUR dropped from 133,989 tons to 126,230 tons. Domestic sales of thermoplastic elastomers for SIBUR decreased from 37,950 tons to 31,982 tons, or from 57% of production to 49%.

SIBUR-Sinopec revive nitrile rubber jv

SIBUR and Sinopec have managed to revive an agreement to set up a jv to produce nitrile butadiene rubber (NBR) in China. An agreement was made based on a production capacity of 50,000 tpa. SIBUR

has accepted it will hold receive 40% in the joint venture and Sinopec is to hold the remaining shares and the majority stake. The initial agreement was signed back in 2014, but the project was subjected to delays and was subsequently frozen.

Tatneft completes purchase of SIBUR's assets at Togliatti

At the end of November SIBUR and Tatneft closed a deal on the sale of SIBUR's assets at Togliatti. This transaction includes the legal entities of SIBUR Togliatti and Togliattisintez. The purchase will allow Tatneft to continue development of the production and infrastructural activities as part of the implementation of the gas and petrochemical strategy and coordinate production with activities in Tatarstan. Tatneft received at its disposal a 100% stake in Togliattisintez

SIBUR Togliatti Capacities	
Product	Capacities (unit-ktpa)
MTBE	120
Butadiene	80
Isoprene	90
Isobutylene-isobutane	165
Isobutylene	60
Butyl rubber	75
Isoprene rubber	82

SIBUR is selling the assets due to its own focused strategic objectives combined with market analysis that indicates limited growth possibilities for products produced by SIBUR Togliatti. SIBUR, in turn, intends to focus on the creation and development of production of base polymers, promising medium tonnage products and intermediate chemistry.

SIBUR will continue to interact with Togliatti production on a partnership basis. A major reason for SIBUR wanting to offload the facilities and plants at Togliatti as it considers that it has taken these markets as far as possible and prefers to concentrate on its strategic programme which does not include commodity rubbers. Voronezhskintezkaucuk is unaffected by the sale of the assets at Togliatti.

Nizhnekamskneftekhim rubber exports (unit-kilo tons)		
Category	Jan-Sep 19	Jan-Sep 18
Isoprene Rubber	151.9	161.4
Butyl Rubber	50.8	54.4
HBR	103.8	100.9
Polybutadiene	129.5	129.6
Total	436.0	446.2

Nizhnekamskneftekhim rubber exports Jan-Sep 2019

Nizhnekamskneftekhim's exports of synthetic rubbers amounted to 436,000 tons in the first nine months in 2019 against 446,200 tons in the same period in 2018. Isoprene rubber exports amounted to 151,900 tons in the period January to September 2019 against 161,400 tons last year whilst exports of halogenated butyl rubber rose from 100,900 tons to 103,800 tons.

Russian synthetic rubber exports, Jan-Sep 2019

Russian exports of synthetic rubber amounted to 754,000 tons in the first nine months in 2019 versus 759,000 tons in the same period in 2018. Revenues from synthetic rubber exports amounted to \$1.210 billion against \$1.282 billion in January to September 2018. Regarding shipment destinations China represented the largest market for Russian exporters in the first nine months in 2019, accounting for 13% of sales. This was followed by Poland with 10.8%, after which came Hungary with 8.9%.

Russian Synthetic Rubber Exports (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
E-SBR	30.4	22.1
Block	28.5	22.6
SSBR	10.5	6.6
SBR	56.5	67.9
Polybutadiene	176.8	180.1
Butyl rubber	98.2	94.4
Halogenated butyl	103.7	100.0
NBR	26.1	24.0
Isoprene	202.7	213.6
Others	20.6	27.6
Total	754.0	759.0

The highest value product category exported from Russia is halogenated butyl rubber (HBR) where exports totalled 103,700 tons in the first nine months in 2019 at a total value of \$245 million. Polybutadiene exports from Russia amounted to 176,800 tons in the first nine months in 2019 at a value of \$284 million and isoprene rubber exports totalled 202,700 tons for \$288 million. The largest

destination for Russian isoprene rubber exports was Poland which took 34,400 tons in the first nine months followed by Mexico with 14,300 tons and the US with 13,600 tons. In terms of revenues for Russian synthetic rubber exports in 2018, polybutadiene rubber provided the largest source of sales totalling \$412 million. More detail of volumes and revenues for individual products is available on the CIREC website.

Methanol

Russian Methanol Production (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Shchekinoazot	712.6	387.8
Sibmetakhim	678.1	659.2
Metafrax	786.0	860.0
Akron	78.4	80.4
Azot, Novomoskovsk	193.3	218.6
Angarsk Petrochemical	32.0	2.6
Azot, Nevinnomyssk	94.6	85.0
Tomet	597.3	651.3
Ammoni	123.0	161.5
Totals	3295.3	3106.4

Russian methanol production Jan-Sep 2019

Russia produced 3.295 million tons of methanol in January to September 2019 against 3.106 million tons in the same period in 2018. Metafrax produced 786,000 tons against 860,000 tons whilst Sibmetakhim at Tomsk increased production from 659,200 tons to 678,100 tons. Tomet at Togliatti reduced production to 651,300 tons from 597,300 tons.

Shchekinoazot reported the most significant results, more than doubling production from 387,800 tons to 712,600 tons following the installation of the new 450,000 tpa plant. The combined complex of methanol and ammonia M-450/A-135 at Shchekinoazot has been operating at a stable load.

Russian methanol export sales, Jan-Sep 2019

Russian companies increased their methanol shipments for export by more than 155,500 tons in the three quarters of 2019 to 1.55 million tons. Shipments to foreign markets, in particular, were increased by Shchekinoazot, which launched a methanol / ammonia complex last year. Also, deliveries abroad increased Tomet and Ammoni due to increased competition in the domestic market.

Russian Methanol Exports (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Azot, Nevinnomyssk	0.0	2.5
Azot Novomoskovsk	62.2	112.3
Akron	5.7	10.3
Metafrax	314.2	357.3
Sibmetakhim	336.1	352.7
Tomet	276.4	216.9
Shchekinoazot	553.3	270.9
Ammoni	13.5	1.6
Total	1561.4	1324.7

Export shipments of methanol from Russia in January-September increased to 1.561 million tons compared to 1.325 million tons 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 270,900 tons in the first nine months last year to 44,400 tons in the same period this year.

Russian Methanol Exports by Destination		
Country	Jan-Sep 19	Jan-Sep 18
Finland	696.5	661.5
Poland	270.5	212.7
Slovakia	115.2	84.9
Romania	75.4	62.3
Belarus	47.2	69.8
Lithuania	84.0	65.4
Turkey	30.3	0.8
Netherlands	140.3	43.5
Others	114.6	144.9
Total	1574	1346

The bulk of methanol into eastern parts of Europe was shipped to the Polish market, and deliveries were also made to the Czech Republic, Slovakia, eastern parts of Germany and Austria. The main outlet for Russian methanol exports remains Finland where volumes totalled 696,500 tons in the first three quarters in 2019 against 661,500 tons in the same period in 2018.

Azot at Novomoskovsk (part of Evrokhim) has purchased 60 tank cars from the United Carriage Company (NPK OVK) for methanol transshipment. The wagons will be manufactured at the Tikhvin industrial site where tanks will be added for the transportation of methanol. The order is expected to be completed before the end of this year. Up to 160 tons of cargo can be transported in one train of 80 wagons, reducing the cost of unloading and loading operations.

Russian methanol exports by port (unit-kilo tons)		
Export area	Jan-Sep 19	Jan-Sep 18
Polish border	253.4	205.8
Kavkaz	68.1	49.3
Finnish ports	871.8	791.8

The transportation of methanol in the TikhvinKhimMash tank allows the cargo owner not only to reduce transportation costs and maintenance

costs of the rolling stock, but also to increase the efficiency of cargo transportation. The deadlines for the overhaul runs of these tank cars have been tripled up to 8 years and the service life amounts to 32 years.

Russian Methanol Domestic Sales (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Azot Nevinnomyssk	24.4	13.7
Azot Novomoskovsk	116.8	103.2
Metafrax	178.8	216.7
Sibmetakhim	282.2	270.2
Tomet	301.0	397.8
Shchekinoazot	115.6	45.8
Ammoni (Mendeleevsk)	77.0	122.1
Others	0.0	2.8
Total	1095.8	1172.5

Russian Methanol Consumption (unit-kilo tons)		
Consumer	Jan-Sep 19	Jan-Sep 18
Nizhnekamskneftekhim	170.6	184.4
SIBUR Togliatti	117.2	91.7
Uralorgsintez	60.4	51.2
SIBUR-Khimprom	16.5	11.1
Tobolsk-Neftekhim	30.3	38.8
Ektos-Volga	43.5	40.9
Omsk Kaucuk	70.0	64.1
Novokuibyshevsk NPZ	36.2	54.3
Uralkhimplast	32.3	16.6
Slavneft-Yanos	11.5	12.3
Others	535.8	546.0
Total	1124.3	1111.4

Russian methanol domestic sales, Jan-Sep 2019

Domestic sales of methanol on the Russian market amounted to 1.096 million tons in January to September 2019 versus 1.173 million tons in the same period last year. Tomet at Togliatti reduced sales from 397,800 tons in the first nine months in 2018 to 301,000 tons this year, partly due to lower production and partly to higher exports. Ammoni at Mendeleevsk also reduced domestic shipments to 122,100 tons from 77,000 tons. Sibmetakhim at Tomsk site increased sales from 270,200 tons to 282,200 tons whilst Azot at Novomoskovsk increased sales from 103,200 tons to 116,800 tons.

Of the main domestic consumers, Nizhnekamskneftekhim purchased 170,600 tons in the first nine months this year against 117,200 tons in the same period in 2018 whilst SIBUR-Togliatti increased purchases from 91,700 tons in January to September 2018 to 117,200 tons in the same period this year. Other than the MTBE producers resin manufacturers represent the next main outlet for methanol. These included Uralkhimplast which purchased 32,300 tons in January to September 2019, Metadynea 60,672 tons and Kronospan 80,516 tons.

AEON Methanol project Volgograd update

Initial meetings started in November to consider options for the one million tpa methanol project at Volgograd, based on the former Khimprom site.

Sberbank has concluded an agreement on strategic cooperation with the AEON investment corporation to build a methanol plant, whilst AEON has stated that the methanol plant is the first stage of the company's strategy to create a multi-chemical cluster in the Volgograd region.

The project partners include RDIF, Marubeni Corporation and AEON Infrastructure Corporation. GTM ONE and Mitsubishi Heavy Industries Engineering have been contracted to prepare the project engineering, as well as the main technical solutions. Khimprom formerly was a major chemical producer, concentrating mostly on inorganic chemical products, until declared bankrupt in 2012. The



construction of facilities for the generation of electric and thermal energy for the requirements of the methanol plant is being discussed. Construction of the methanol plant is intended to begin in 2020 and to be completed by the end of 2022.

Skovorodino methanol project-SABIC, Marubeni and Mitsui OSK Lines

Marubeni Corporation and Mitsui OSK Lines (part of the Mitsui Group) have put forward possible options for delivering methanol from the plant proposed for Skovorodino in the Far

Eastern Federal District. Marubeni is able to support the project in terms of selling products on the international market, while Mitsui can provide transportation services.

The one million tpa methanol project at Skovorodino is being implemented by the company Technolizing with private investments amounting to 49 billion roubles (\$768 million), but this funding is not enough to create the necessary infrastructure and the investor asked the government for help. SABIC and the Russian

Direct Investment Fund (RDIF) signed binding documents in October allowing entry into the methanol project at Skovorodino. SABIC may be seeking around 25% of the project.

Nizhnekamskneftekhim-methanol plant preparations

Nizhnekamskneftekhim is conducting preparatory work at the Nizhnekamsk site for the future construction of the methanol plant. Buildings of the former and idled isoprene monomer plant have been completely dismantled. Project documentation could be submitted for state examination before the end of 2019. Earlier in the year, Haldor Topsoe was selected as the licensor under which the Danish company will provide engineering services for the project. The methanol plant will be built at Nizhnekamsk in order to reduce the cost of production of isoprene rubber primarily through reducing production costs for formaldehyde.

In September this year, the Tekhnolizing company and the Russian Export Center (REC) entered into a cooperation agreement aimed at supporting and developing the company's non-resource supplies to foreign markets. Then it was noted that the products manufactured in Skovorodino are planned to be shipped to the markets of the Asia-Pacific region, mainly to China. The amount of investment in the project was estimated at \$700 million.

Gas supply to the Skovorodino plant of around 1 billion cubic metres per annum will be transhipped from the Power of Siberia gas pipeline, which runs in the immediate vicinity of the plant and should be launched at the end of 2019. The UST Group, in which Technolizing

is has already signed a gas supply contract with Gazprom for 25 years.

Organic chemicals

Russian N-Butanol Production (unit-kilo tons)

	<i>Jan-Sep 19</i>	<i>Jan-Sep 18</i>
Angarsk Petrochemical Company	18.5	21.3
Azot, Nevinnomyssk	11.6	11.4
Gazprom neftekhim Salavat	44.5	46.1
SIBUR-Khimprom, Perm	29.9	30.9
Total	104.5	109.7

Russian Isobutanols Production (unit-kilo tons)

	<i>Jan-Sep 19</i>	<i>Jan-Sep 18</i>
Angarsk Petrochemical Company	10.9	11.4
Gazprom neftekhim Salavat	24.9	28.5
SIBUR-Khimprom, Perm	40.1	39.1
Total	75.9	64.7

Russian butanol production Jan-Sep 2019

Russian normal butanol production totalled 104,500 tons in January to September 2019, against 109,700 tons in the same period in 2018.

Gazprom neftekhim Salavat was the largest Russian producer, producing 44,500 tons against 46,100 tons in January to September 2018. Isobutanol production in Russia in the first nine months rose from 64,700 tons to 75,900 tons. Gazprom neftekhim Salavat reduced isobutanol production to 24,900 tons from 28,500 tons, whilst SIBUR-Khimprom increased to 31,400 tons from 29,000 tons.

Russian domestic butanol sales, Jan-Sep 2019

Russian butanol merchant sales in January to September this year amounted to 34,600 tons against 44,000 tons in January to September 2018. The main cause of the fall was the limited supply made available from Salavat, where only 4,300 tons were shipped in the first nine months.

Russian Butanol Domestic Sales (unit-kilo tons)

<i>Producer</i>	<i>Jan-Sep 19</i>	<i>Jan-Sep 18</i>
Gazprom n Salavat	4.3	6.7
SIBUR-Khimprom	18.8	21.3
Angarsk Polymer Plant	10.3	13.9
Azot Nevinnomyssk	1.3	2.1
Totals	34.6	44.0

The two largest domestic purchasers in January to September 2019 were Dmitrievsky Chemical Plant with 10,500 tons, versus 8,900 tons last year, and Akrlat at Dzerzhinsk with 9,700 tons against 10,600 tons. Butanol sales on the merchant domestic market amounted to 58,100 tons in 2018 against 59,900 tons in 2017.

N-butanol availability in the Russian market is affected by processing by both Gazprom neftekhim Salavat and SIBUR-Khimprom. Gazprom neftekhim Salavat uses a significant part

of its own n-butanol to produce butyl acrylate, whilst SIBUR uses it also for internal processing. SIBUR stopped production of butanols in early July for maintenance which lasted for around a month. Angarsk Petrochemical is the only Russian producer with available product where there is no internal demand.

In the first nine months in 2019 butanol exports from Russia dropped from 58,300 tons to 47,800 tons. The main destinations for Russian butanol exports remain China, Poland, India and the Netherlands. The share of normal butanol in all-Russian exports from January to September 2019 narrowed by 34%, although isobutanol increased by 18%. The supply of n-butanol in the free market is declining due in particular to increased production of 2-ethylhexanol at SIBUR-Khimprom in relation to the new 100,000 tpa DOTP plasticizer plant.

SIBUR-oxo alcohol and plasticizer production, Jan-Sep 2019

SIBUR's Production-Intermediates (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
DOTP	38.9	0.0
Oxo Alcohols	116.0	125.7
Acrylates	38.1	38.6

In the first three quarters in 2019 SIBUR's production of oxo alcohols totalled 115,961 tons against 125,586 tons in the same period last year. Domestic merchant sales from SIBUR dropped from 67,521 tons to 43,073 tons whilst exports fell from 38,701 tons to 25,473 tons. Merchant and export sales were affected by the increase in internal processing in the production of the

plasticizer DOTP at Perm.

SIBUR's Acrylate Sales (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Domestic	21.6	19.5
Exports	26.7	21.5
Total	48.4	41.0

DOTP production for SIBUR amounted to 38,891 tons up to the end of September in 2019 after the plant started in the first and second quarters this year. Sales of DOTP totalled 34,845 tons of which 24,185 tons were directed to the Russian domestic market and 10,659 tons to exports.

Russian Organic Chemical Exports (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Propylene	55.8	46.7
Orthoxylene	49.0	86.9
Paraxylene	130.1	122.0
Styrene	71.5	111.0
Methanol	1427.5	1265.6
N-Butanol	19.6	29.5
Iso-butanol	28.1	28.6
2-EH	4.8	19.5
Pentaerythritol	7.5	8.4
Phenol	16.1	12.7
Ethylene Oxide	10.0	9.8
Formaldehyde	11.6	14.0
DEG	7.6	10.8
MEG	31.6	25.6
Acetone	33.4	18.2
Acetic Acid	36.9	25.6
VAM	25.9	24.3
Butyl Acetate	21.4	16.7
Acrylic Acid	13.2	17.1
Butyl Acrylate	56.3	50.9
Phthalic Anhydride	49.2	49.9
Acrylonitrile	138.5	148.1
Melamine	15.5	8.8
Caprolactam	174.4	180.1

Although the production of acrylates at Dzerzhinsk dropped from 38,636 tons to 38,069 tons in the first three quarters in 2019 SIBUR was able to increase sales from inventory. Exports rose from 21,492 tons to 26,747 tons whilst domestic sales rose from 19,512 tons to 21,627 tons. In total therefore sales of acrylates from SIBUR's Dzerzhinsk division rose from 41,004 tons to 48,373 tons.

SIBUR-oxo alcohol expansion

SIBUR plans to increase the production capacity of alcohols (n-butanol and 2-ethylhexanol) at the SIBUR-Khimprom site in Perm by 25-30%. The timing of the project will be determined at the end of 2019. Plant capacities will be increased at the same time as increasing production efficiency. The aim is to produce more targeted products from the same amount of raw materials, in order to save energy resources. SIBUR will increase the production capacity of 2-ethylhexanoic acid used in the manufacture of paints and varnishes for the production of protective films for automobile windshields and other purposes.

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

Russian exports of 2-ethylhexanol (2-EH) dropped to 4,800 tons in the first nine months in 2019 against 19,500 tons in the same period in 2018, whilst n-

butanol exports dropped to 19,600 tons against 29,500 tons and isobutanol exports dropped to 28,100 tons from 28,600 tons. 2-EH exports from Russia have fallen this year 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%.

Exports of caprolactam from Russia dropped to 174,400 tons in January to September 2019 from 180,100 tons. Melamine exports rose from 8,800 tons to 15,500 tons, whilst phthalic anhydride exports dropped from 49,900 tons to 49,200 tons. Imports of phthalic anhydride into Russia were up marginally to 11,500 tons in the first nine months in 2019, whilst PTA imports increased from 189,900 tons in January to September 2018 to 292,100 tons.

Russian Organic Chemical Imports (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Ethylene glycol	43.9	39.3
Propylene glycol	17.9	19.3
Isopropanol	1.6	1.9
Maleic anhydride	4.1	4.5
DINP	22.1	18.8
DOP	1.8	5.8
Phthalic anhydride	11.5	11.3
PTA	292.1	189.9
TDI	37.9	35.5
Lysine	41.3	74.1
Other Amino acids	12.7	22.0
Methionine	29.7	19.9
Cyclic amides	4.1	4.5

Modernisation at Polief, the sole producer of PTA in Russia, culminated in a sharp rise in inward shipments of PTA although volumes are softening as the year draws to a close. DINP imports into Russia rose from 18,800 tons to 22,100 tons in the first nine months this year whilst DOP imports dropped from 5,800 tons to only 1,800 tons. Imports of the amino acid lysine dropped from 74,100 tons in the first nine months in 2018 to 41,300 tons in the same period in 2019 due to rises in domestic production.

Russian acetone exports, Jan-Sep 2019

Acetone exports from Russia rose from 28,900 tons in January to September 2018 to 31,200 tons in the same period in 2019. Prices for acetone have dropped this year and despite recent signs of improvement averaged less than \$457 per ton in the first nine months in 2019. Belarus has been the largest consumer of Russian acetone this year, taking 46.7% of shipments followed by the Netherlands. Revenues from the export of acetone from Russia amounted to \$13.2 million in the first nine months in 2019 versus \$20.6 million in the same period in 2018.

Russian Acetone Exports (unit-kilo tons)					
Country	Q3 18	Q4 18	Q1 19	Q2 19	Q3 19
Belarus	4.7	1.1	0.0	3.3	3.7
Netherlands	2.6	2.4	2.8	2.1	2.3
Turkey	1.6	1.3	1.2	2.6	1.9
Others	1.0	1.4	1.9	2.4	2.4
Total	10.0	6.2	6.0	10.4	10.2

The largest exporter of acetone in Russia is Dmitrievsky Chemical Plant which shipped 9,499 tons in 2018, most of which went to the Netherlands.

production, rising from 81,000 tons to 104,400 tons.

Russian Acetone Production (unit-kilo tons)		
Producer	Jan-Sep 19	Jan-Sep 18
Ufaorgsintez	35.9	27.4
Kazanorgsintez	33.3	28.9
Samaraorgsintez	34.7	24.7
Total	104.0	81.0

In the first three quarters in 2019 Russian acetone production increased on the back of higher phenol production. In 2020 acetone will be made available from the new Omsk Kaucuk plant which is undergoing the final tests before start- expected before the end of 2019.

Tatneft-maleic anhydride project update

Tatneft is collecting information and materials for assessing the environmental impact of building a maleic anhydride plant at Minnibayevo in Tatarstan. If the project receives approval from local residents and the state authorities Tatneft hopes to start construction in 2020. Tatneft has already agreed licence terms with the Italian engineering company Conser, basing it on the oxidation of butane into maleic anhydride.

The capacity of the new installation will be 50,000 tpa of maleic anhydride, to be located on the territory of the Minnibayevo gas processing plant in the Almetyevsk region. The project is part of a wider investment programme for a gas and petrochemical complex in Tatarstan, the total cost of which is estimated at 70.6 billion roubles (\$1.1 billion).

It is assumed that the complex will process 390,000 tpa of raw materials and produce 317,000 tpa of products: including maleic anhydride, polypropylene, acrylonitrile and carbon fibre. The decision to build maleic plant of 50,000 tpa is questionable in view of the Russian domestic market not exceeding 5,000 tpa at present and that also SIBUR is constructing a similar size plant at Tobolsk.

TDI/MDI

Russian TDI Imports (unit-kilo tons)		
Country	Jan-Sep 19	Jan-Sep 18
Hungary	6.9	6.3
Germany	8.1	13.7
China	2.1	0.1
South Korea	2.1	1.7
Saudi Arabia	6.9	6.5
UK	0.0	0.1
US	8.1	4.0
Turkey	0.2	0.1
Japan	1.1	1.6
Belgium	0.9	0.7
Netherlands	1.2	0.1
France	0.4	0.2
Poland	0.0	0.1
Iran	0.0	0.1
Total	37.9	35.2

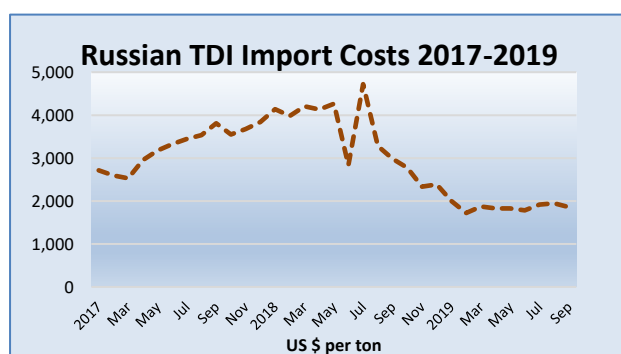
Russian TDI imports, Jan-Sep 2019

Russian TDI imports amounted to 37,900 tons in the first nine months in 2019 against 35,200 tons in the same period last year. Germany reduced shipments from 13,700 tons in January to September 2018 to 8,100 tons this year whilst Hungary shipped 6,900 tons against 6,300 tons. Saudi Arabia was the largest supplier in January to September 2019, providing 6,900 tons versus 6,500 tons last year.

The main regions inside Russia accounting for TDI purchases, include the Moscow area taking 51.6% of shipments in the first nine months in 2019, followed by Tatarstan with 18.9%. Germany is the main supplier of TDI to Tatarstan, much more than Moscow region where the main suppliers come from the US and Saudi Arabia.

imports costs of TDI into Russia in the first three quarters in 2019 dropped sharply from \$133.8 million in the same period last year to \$70.6 million due to the sharp drop in prices. In the first nine months in 2019, TDI import prices into Russia averaged \$1865 per ton against \$3464 per ton for the whole of 2018. The graphic

opposite shows the trend for TDI prices from 2017 through to September 2019, please contact us if you would like to receive the full price series.

**Russian MDI imports, Jan-Sep 2019**

MDI imports into the Russian market amounted to 113,600 tons in the first nine months in 2019 against 89,900 tons in the same period in 2018. Import costs for MDI in the first nine months in 2019 totalled \$158 million against \$223.5 million in the same period last year, with average prices dropping this year to \$1550 per ton versus \$2300

per ton in 2018.

The main supplier of MDI imports to the Russian market in the first nine months was Saudi Arabia, shipping 29,300 tons against 27,300 tons in the same period last year. China supplied 23,900 tons to Russia against 16,700 tons in January to September 2018, whilst the Netherlands dropped from 28,500 tons to 26,000 tons. Regarding regional sales, the Moscow area accounted for 43.5% of import shipments of MDI in the first nine

Russian Imports of MDI (unit-kilo tons)		
Country	Jan-Sep 19	Jan-Sep 18
Hungary	5.7	3.2
Germany	12.1	10.5
China	23.9	16.7
South Korea	1.7	1.3
Saudi Arabia	29.3	27.3
Japan	1.6	1.3
Belgium	11.5	4.4
Netherlands	26.0	28.5
Others	1.9	10.4
Total	113.6	103.7

months in 2019, followed by the Vladimir Oblast with 18.1% and the Kaluga Oblast with 13.7%. Prices per ton of MDI imports into Russia averaged \$1,544 in January to September 2019 against \$2300 in the whole of 2018.

The main suppliers of MDI for the Moscow area come from China accounting for 49.6% of sales in the first three quarters, followed by Belgium with 27.2% and Germany 10.1%. Saudi Arabia is the main supplier to the Vladimir region, accounting for 64% of shipments whilst the Netherlands accounts for 99.3% of shipments to the Kaluga region.

MDI imports into Russia are expected to continue rising in the next two to three years and as the market expands it may lead to reviving interest into investing in production facilities. A number of projects have been floated in the past few years at various sites, but have

been shelved due to a range of key factors such as economies of scale, finance, technology, etc.

Ukraine

Ukrainian polymer imports & production, Jan-Sep 2019

Polypropylene imports to the Ukrainian market amounted to 101,500 tons in the first three quarters in 2019, which is 4% more than in 2018. In the first nine months, the total supply of homopolymer amounted to 77,900 tons against 73,800 tons. Imports of propylene block copolymers amounted to 10,500 tons versus 9,800 tons in 2018, whilst random copolymer imports dropped to 11,700 tons from 12,400 tons. The total volume of deliveries of other propylene copolymers amounted to 1,300 tons against 1,700 tons.

Imports of PVC into Ukraine decreased by 33% in the first nine months of this year to 35,500 tons compared to 53,200 tons in the same period in 2018. Export sales of Ukrainian PVC to foreign markets dropped by 6% as the growth in demand from the domestic market reduced available volumes from the Kalush plant in western Ukraine. In total, 119,400 tons of PVC were shipped for export in January-September 2019 versus 127,600 tons last year.

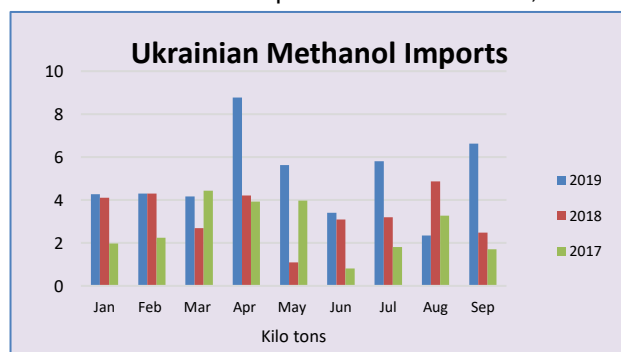
Ukrainian Polymer Imports (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
PVC	35.5	53.2
LDPE	58.2	55.0
LLDPE	60.7	55.4
HDPE	72.5	54.9
Ethylene Vinyl Acetate	9.4	11.8
Polypropylene	101.5	96.0

Imports of polyethylene into Ukraine increased by 12% to 200,800 tons in the first nine months of 2019, up 12% compared to 179,800 tons in the same period of 2018. HDPE imports amounted to 72,500 tons compared to 54,900 tons a year earlier. LDPE imports reached 58,200 tons, up by 2%, whilst LLDPE imports increased to 60,700 tons compared to 55,400 tons. Imports of other polyethylene grades, including ethylene-vinyl-acetate (EVA), totalled 9,400 tons compared to 11,800 tons.

Imports of general-purpose polystyrene into Ukraine for January to September 2019 decreased by 7% to 17,200 tons compared to 18,600 tons in the same period in 2018. Nizhnekamskneftekhim accounted for 9,200 tons in the first three quarters in 2019, down from 12,700 tons. Import deliveries of expandable polystyrene to the Ukrainian market totalled 27,300 tons in January to September 2019, unchanged from last year, where the share of Russian material dropped from 60% to 49%. Deliveries of Chinese EPS amounted to 38% (10,400 tons) versus 29% (7,900 tons) in January-September 2018.

Ukrainian methanol imports, Jan-Sep 2019

Ukrainian methanol imports increased to 45,335 tons in the first nine months in 2019 against 29,675 tons in the same period in 2018. In 2018, Ukraine imported 43,600 tons of methanol, nearly all of which was shipped from Russia (34,000 tons) and Belarus (9,500 tons). Ukrasdobycha, which produces gas in Ukraine. Ukrasdobycha is buying methanol from the Swiss company AGTG SA up to August 2020 in addition to other suppliers.



67,100 tons in the same period last year. Benzene exports fell from 49,300 tons to 46,400 tons and have not been available in the fourth quarter to date. Karpatneftekhim had to postpone the repair work on the benzene plant at Kalush for an indefinite period due to the late delivery of the necessary equipment. Initially the company had planned to stop the production of benzene at the Kalush enterprise in late August for a period of 35 days.

Karpatneftekhim Petrochemical Exports (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Propylene	65.6	67.1
Benzene	46.4	49.3

Karpatneftekhim restarted the import of Russian naphtha by rail in November after reaching agreement with Russian Railways supply 50,000 tpa of naphtha from the Volgograd refinery. The supply to the Ukrainian market from Russia was suspended in June 2019, after the entry into force of the decree of the Russian government on restricting

Karpatneftekhim, Jan-Sep 2019

Karpatneftekhim exported 65,600 tons of propylene in the first nine months in 2019 against

the export of petroleum products. In the first half of 2019 Karpatneftekhim purchased 172,000 tons from the Volgograd refinery which is 30,000 tons lower than in the first half last year. After the suspension of naphtha imports from Russia, Karpatneftekhim switched to a refinery product in Bourgas. In June-October, seven tanker shipments of naphtha with a total volume of about 190,000 tons were delivered to the Odesnefteprodukt complexes (Odessa) and the Black Sea Fuel Terminal (Odessa region) for the Kalush plant.

Regarding other feedstocks, Ukraine is seeking alternative gas and LPG supplies for 2020 and is considering deliveries from Qatar either through the Trans-Balkan gas pipeline or by ship through the Straits of Bosphorus and Dardanelles.

Belarus

Belarussian Xylene Imports (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Orthoxylene	11.7	19.1
Paraxylene	10.7	5.9

Belarussian xylene and propylene imports, Jan-Sep 2019

Orthoxylene imports into Belarus dropped from 19,100 tons in the first nine months in 2019 against 11,700 tons in the same period in 2018, whilst paraxylene imports rose from 5,900 tons to 10,700 tons. Prices for paraxylene imports into Belarus increased in the first nine months this year to \$998 per ton against \$975 per ton in the same period in 2018. Russia remains the sole supplier of orthoxylene and paraxylene into Belarus. Belarus imported 27,154 tons of propylene in the first nine months in 2019 against 37,761 tons in the same period last year. Propylene prices dropped from €967 per ton in 2018 to €883 per ton in January to September 2019. Propylene is used in Belarus mainly for the production of acrylonitrile.

Belarussian Petrochemical Production (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Ethylene	70.9	53.5
Propylene	43.0	34.2
Benzene	82.4	89.9

Belarussian benzene exports restart

After a three-year break, the Novopolotsk refinery (resumed shipments in November of benzene to Russia. Earlier in 2019 the Mozyr refinery delivered a spot delivery of 1,900 tons to Shchekinoazot Russia. Partly due to reduced domestic demand by Azot at Grodno benzene has become available for export.

Azot Grodno Production (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Methanol	61.4	59.2
Caprolactam	88.2	91.5
Polyamide primary	80.2	83.1
Polyamide filled	9.6	9.6
Ammonia	787.0	792.4
Urea	633.0	760.2
Fertilisers	608.3	572.1
Fibres	32.1	31.5

Grodno Azot, Jan-Sep 2019

In the first nine months in 2019 Azot at Grodno increased methanol production to 61,400 tons from 59,200 tons in the same period in 2018, whilst caprolactam production dropped slightly from 91,500 tons to 88,200 tons.

Around 80% of polyamide and caprolactam produced by Grodno Azot is exported. 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 Acrylonitrile Exports (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Russia	1.5	2.0
Hungary	0.0	4.0
India	0.0	3.7
Iran	0.0	3.1
Netherlands	10.0	0.0
Turkey	19.0	22.1
UAE	1.6	0.0
Total	32.2	34.9

Belarussian organic chemical trade, Jan-Sep 2019

Acrylonitrile exports from Belarus in the first nine months in 2019 were targeted mainly on Turkey and the Netherlands. Exports totalled 32,200 tons in the first nine months in 2019 against 34,900 tons in the same period in 2018.

Methanol imports dropped from 71,000 tons to 39,900 tons whilst exports rose from 15,400 tons to 18,200 tons.

Methanol consumption dropped in the first nine months from 114,800 tons to 83,100 tons.

Belarussian Methanol Market (unit-kilo tons)		
	Jan-Sep 19	Jan-Sep 18
Production	61.4	59.2
Exports	18.2	15.4
Imports	39.9	71.0
Balance	83.1	114.8

Belarussian polymer trade, Jan-Sep 2019

In the first nine months this year Belarussian PVC imports amounted to 52,299 tons, of which Russia provided 87% of shipments. imports of polyethylene into Belarus grew by 2.2% in the first nine months of 2019, totalling 107,500 tons compared to 105,000 tons. LLDPE imports amounted to 15,800 tons in January-September 2019, against 21,900 tons a year earlier. LDPE was unchanged at 26,800 tons whilst HDPE rose 21.3% to 44,700 tons.

Polypropylene imports into Belarus totalled 84,547 tons for the first nine months in 2019 versus 77,808 tons in the same period in 2018. The main exporters to Belarus included Russia with 66,184 tons and Azerbaijan with 1,741 tons from the new SOCAR-Polymer plant. Homopolymer imports rose 8.3% in the first nine months in 2019 to 54,721 tons, whilst imports of propylene copolymers dropped rose 12% to 26,734 tons.

Belarussian exports of polyamide amounted to 46,875 tons in the first nine months in 2019 at a price of \$1,756 per ton against 53,435 tons in the same period last year at a price of \$2,115 per ton. Due to the fall in prices, revenues dropped from \$112.994 million to \$82.304 million. Destination sales for Belarussian polyamide exports are focused largely on the CIS and European markets.

Belarussian MDI Imports (unit-kilo tons)		
Country	Jan-Sep 19	Jan-Sep 18
Russia	1.7	1.9
Belgium	3.9	2.9
Hungary	0.7	1.7
Germany	6.7	3.8
Saudi Arabia	1.0	3.3
Others	1.9	2.3
Total	16.0	15.9

Belarussian MDI imports, Jan-Sep 2019

MDI imports into Belarus totalled 15,976 tons in the first nine months in 2019 against 15,879 tons in the same period last year. Germany was the largest supplier, increasing shipments in January to September 2018 from 3,781 tons at \$2605 per ton up to 6,732 tons at a much-reduced price of \$1582 per ton. Hungary reduced shipments into Belarus from 1,686 tons to 681 tons. Overall, MDI prices dropped from \$2640 per ton in January to September 2018 to \$1640 per ton in the same period this year.

Belarussian PTA Imports (kilo tons)		
Country	Jan-Sep 19	Jan-Sep 18
Russia	0.0	1.2
Belgium	0.0	0.5
Turkey	1.0	0.0
Turkey	0.0	0.0
South Korea	9.5	5.3
Portugal	5.0	2.0
Poland	25.6	11.2
Thailand	0.2	0.0
Total	41.3	20.3

Belarussian PTA imports & PET trade, Jan-Sep 2019

PTA imports into Belarus totalled 41,316 tons in the first nine months in 2019, versus 20,311 tons in the same period in 2018. Imports from South Korea increased to 9,500 tons in January to September 2019 from 5,324 tons in the same period last year, at a price of €940 per ton in 2019 against €769 per ton. Poland increased shipments of PTA to Belarus from 11,226 tons to 25,620 tons, with prices rising very slightly from €855 per ton in January to September 2018 to €856 per ton in the same period this year. The other main supplier in 2019 comprised Portugal which shipped 5,021 tons in the first nine months.

Export deliveries of PET from Belarus in January-September increased by 40% compared to the same period last year and amounted to 12,066 tons against 8,431 tons. Import deliveries of PET chips to the Belarusian market increased by 18% in nine months of 2019, amounting to 17,181 tons compared to 15,136 tons in January-September last year.

Central Asia/Caucasus

Azerbaijan chemical production, Jan-Sep 2019

In January-September 2019 Azerbaijan produced 74,700 tons of propylene of which 52,400 tons comprised commercial product, 76,900 tons of polyethylene and 98,000 tons of ethylene. The production of propylene increased by 59.2%, polyethylene by 7.6%, and ethylene by 14.7%. Azerbaijan is expected to produce 500,000 tons of urea in 2020 and 620,000 tons in 2021. Production is expected to total 200,000 tons in 2019. In January-September 2019, the chemical enterprises of Azerbaijan increased the volume of

production by 20.6%. The growth in the production of pharmaceutical products rose by 12, 6%, rubber and plastic products 26.1%, In addition, the production of paints and varnishes increased by 79.6% to 17,832 tons, other organic composite solvents and cleaners by 58.4%, up to 19,909.4 tons.

Azerbaijan-methanol exports & production, Jan-Sep 2019

SOCAR Methanol plans to produce 360,000 tons of methanol by the end of 2019, against 191,400 tons in 2018. In the first three quarters this year production totalled 314,000 tons against 128,000 tons versus the same period in 2018.

Azerbaijan Chemical Production (unit-kilo tons)		
Product	Jan-Sep 19	Jan-Sep 18
Ethylene	98.0	86.0
Polyethylene	76.9	71.7
Propylene	74.7	53.8
C4s	26.4	26.0
Methanol	314.0	128.1

Kazakh polymer imports, Jan-Sep 2019

Imports of PVC into Kazakhstan rose in the first nine months of 2019 by 31% to 45,200 tons compared to 32,300 tons in January to September 2018. Such a substantial increase in imports was caused by the further resale of resin to Russia. Chinese producers accounted for around 94% of imports into

Kazakhstan the local market over the stated period were the main PVC suppliers to Kazakhstan. Russia was the second largest PVC supplier shipping 2,900 tons to Kazakhstan.

Imports of polyethylene into Kazakhstan increased to about 110,100 tons in January-August 2019, up 3% from 107,100 tons. Overall HDPE imports exceeded 86,000 tons, down by 2%, and LDPE imports into Kazakhstan totalled 15,800 tons up by 29%. Purchasing of LLDPE by local companies was 8,300 tons in the first eight months of 2019, compared to 6,900 tons in the same period in 2018.

Atyrau polypropylene project-Air Liquide

Air Liquide Munay Tech Gases has entered into an agreement with Kazakhstan Petrochemical Industries (KPI) worth €15 million for the construction of a nitrogen unit to support the polypropylene plant which is being installed at Atyrau. The capacity of the nitrogen unit comprises 8,000 cubic metres per hour and placed next to the polypropylene plant which is being designed to produce 500,000 tpa.

Uzkimyosanoat-Samsung Engineering, ammonia and urea projects

Uzkimyosanoat and Samsung Engineering company are working on a project to build a plant producing ammonia and urea in Syrdarya region. Samsung has recently completed the preliminary design of the project under which the plant will produce urea. Around 50% of the production is planned to be exported, while the remaining volumes are intended for the domestic market. Taking into account Uzbekistan's geographical location, transportation to the far abroad countries will make up about 30% of the cost of production.

Air Liquide Munay Tech Gases will invest around \$17 million dollars in a new unit to supply nitrogen to the new plant under construction by KPI. The project is the first Integrated Gas-Chemical Complex to be constructed in the Atyrau region.

Air Liquide Munay Tech Gases is a joint venture of Air Liquide (75%) and Kazakhstan's KazMunayGaz (25%), which was established in 2017. The JV was created to provide gas plants for plants in Kazakhstan and started supplies of hydrogen to the Pavlodar Petrochemical Plant in 2018. Hydrogen is used for the process of hydrotreatment of diesel and gasoline to reduce sulphur content, thus contributing to cleaner transportation fuels.

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