

# CIREC

## MONTHLY NEWS

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

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**POLYETHYLENE PRODUCTION TOTALLED 1.41 MILLION TONS IN 2009 IN RUSSIA AGAINST 1.27 IN 2008**

**RUSSIA PRODUCED 257,720 TONS OF BUTANOLS IN 2009, 5% HIGHER THAN IN 2008**

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**KOGAS IN EFFORTS TO ACCELERATE THE CONSTRUCTION OF THE USTYURT GAS CHEMICAL COMPLEX**

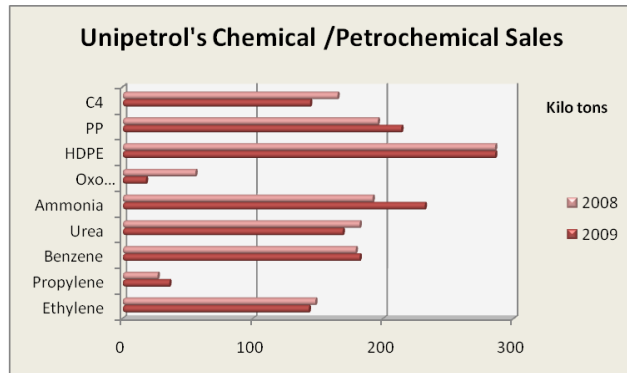
## CENTRAL & SOUTH EAST EUROPE

### Petrochemicals

#### Unipetrol 2009

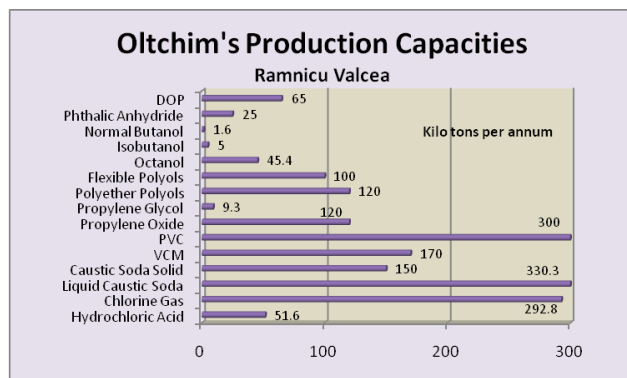
Unipetrol expects a negative operating result in the fourth quarter of 2009, after margins weakened at the end of the year. Margins in its key petrochemical sector had lost the gains achieved in the previous quarter, while refining margins remained subdued. Overall for 2009, Unipetrol's margins for olefins declined by 41% to €210/ton whilst rising for polyolefins by 24% to €256/ton.

The sale of unused 2009 emission credits by Unipetrol impacted EBIT positively by more than Kc 300 million (\$16.07 million). The refining division was affected by a 6% fall in the volume of processed oil and a stronger rate of the crown to the dollar. Demand in the petrochemical division fell by 4%, although production levels for olefins and polyolefins remained similar to 2008. The oxo alcohol plant was closed permanently in the second quarter last year, but otherwise production volumes in the chemical division remained similar.



#### Oltchim-Arpechim

The Competition Council in Bucharest has approved the takeover by Oltchim of Arpechim's petrochemical activities. Oltchim has agreed to pay €13 million to Petrom to take the petrochemical activities at Arpechim. Besides the €13 million to be paid for these assets, the companies have agreed to combine chemical debts by Petrom (112.4 million lei) to be rescheduled over a period of three years. Assets to be transferred include the pyrolysis plant, low density polyethylene and high density polyethylene units together with a series of tanks. The land area is estimated at about 150 hectares. Also, approximately 560 employees in the petrochemical division of Arpechim will be transferred to Oltchim.



Minority shareholder PCC-SE issued a statement in January arguing that Oltchim urgently needs a realistic plan for restructuring. PCC has strongly opposed the takeover of the petrochemical facilities at Arpechim and has stressed that Oltchim should concentrate on niche product areas such as polyols. However, there is little if any support inside Romania for these suggestions, and the takeover seems destined to go ahead unless the EU fails to approve the State aid package to Oltchim. This package covers the approval to Oltchim by the Inter-Ministerial Commission for Eximbank last year, for a state guarantee worth €49.6 million in the purchase of

Arpechim. In mid November, the European Commission said it had launched a formal investigation procedure in accordance with state aid rules of the EC Treaty, although the decision is not yet known.

#### Oltchim 2009

The combined effects of weak market conditions and feedstock restrictions, due to the closure of Arpechim's petrochemical division, impacted heavily on Oltchim's performance in 2009. The company's sales turnover fell 44% in 2009 to 1.077 billion lei (€254.2 million), while losses dropped by 10% to 209.8 million lei (€49.5 million euros). The company recorded a 2008 turnover of 1.946 billion lei and the loss of 234 million lei. Total revenue for Oltchim fell 45% last year to 1.095 billion lei (€258.5 million), compared with 2008.

Total expenditure totalled 1.305 billion lei (€308 million), or 42% lower than in 2008. In short, lower production meant less raw material and energy purchases. From operating activities, Oltchim recorded losses of 99.4 million lei (€23.4 million), which was 29% higher than in 2008.

**Petrohemija-feedstock sources, project assessments**

Petrohemija is examining alternative sources of raw materials in an aim to improve its financial performance. As an alternative for naphtha, Petrohemija is considering the use of butane-propane fractions for olefin production which would reduce costs significantly. The company has examined the application of n-butane at Tomskneftekhim.

The company has been incurring losses in recent months due to the difference between feedstock prices and finished products. The petrochemical complex is not operating at full capacity which is necessary for the company to have a prospect of recording profits. The creation of a new relationship with NIS in 2009 was a major development for Petrohemija, and is now the most important business partner. Agreements supported by the Serbian government involve NIS supplying Petrohemija 7,500 tons per month of naphtha. Petrohemija received twice this amount in November and December, and would like to receive 15,000 tons per month regularly but as yet there has been no agreement. The problem is that Petrohemija needs to import additional naphtha to supplement domestic purchases, and it is the imported prices which tend to generate losses.

Aside feedstocks, the modernisation of the production facilities at Pancevo are a key goal. Uhde visited Petrohemija in January to assess a project for the expansion of HDPE capacity at Pancevo from 57,000 tpa to 80,000 tpa. This project is expected to be combined with an expansion and modernisation of LDPE and ethylene capacity, although at this stage the time-schedule cost of investment is still under assessment.

**Hipol-Petrohemija propylene agreement**

At the end of 2009, Serbian polypropylene producer Hipol agreed to purchase from Petrohemija 3,000 tons of propylene per month instead of the previous 500 tons. The new agreement also includes lower prices and with a 60-day repayment period. Hipol is located at Odzaci and the government is helping to subsidise raw material prices for small and medium-sized enterprises. This agreement will help Hipol improve its liquidity and secure stability of production and placement on local and foreign markets. Hipol is considering a plan to build a new polypropylene plant, which would employ from 200 to 300 workers, at a cost of nearly €30 million.

**Dioki, VCM-PVC investment plans**

Dioki has received approval in December 2009 from the European Investment Bank for a loan arrangement worth €35 million. The total cost of the project is placed at €70 million. It comprises the restart of the company's VCM plant, and the construction of a new PVC plant at Dina Petrokemija located at Omisalj on the island of Krk. The project aims at meeting local and international demand while improving the competitiveness of Dina and the environmental performance of the existing facilities.

As an expansion of an existing chemical site, the project falls under the Environmental Impact Assessment (EIA). No EIA has been required for the restarting and partial refurbishment of the VCM plant, while a full EIA has been conducted for the construction of the PVC plant. Approval was granted originally in May 2007. The VCM plant at Omisalj was started in 1985 with a capacity of 160,000 tpa, although PVC facilities have never been constructed. Old PVC plants in Croatia at Split and Zadar have both been closed.

Dioki announced in January that it has completed modernisation of its polyethylene plant at Dina Petrokemija. Total investment in the project amounted to €18 million and increased the capacity by 30% to 90,000 tpa. Also in January, Dioki acquired 147,000 of its own shares, representing a 3.64% in the equity. After this transaction, Dioki holds 7.64% of its own stock. Dioki reached an agreement at the end of 2009 with Zagreb holding for on settlement of its utilities debt. In April 2009, the companies agreed on repayment of overall debt of HRK 25 million in three installments. The overall accumulated utility debt has been subject of a legal dispute concerning water duty.

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**Chemicals**

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**Spolchemie-mercury extension**

Spolchemie expects to be able to use mercury for chlorine production until 2013, a year longer than its permit which was set up in 2006. Spolchemie was granted a permit by the Usti region in December 2006 to operate the mercury chlorine plant until 31 December 2012. The integrated permit allows for the production of alkaline lyes, chlorine and hydrochloric acid. Although issued by the Usti Region on 30 October 2006, it has been contested by the environmental group Arnika which had sought the closure of the mercury electrolysis plant in 2009.

In 2009, Spolchemie applied for a three year extension to the 2012 date from the Department of Environment Usti Region required for conversion to the membrane route, but a compromise looks to have been reached at one year. Spolchemie requested the extension to the mercury permit due to the economic downturn last year that made it extremely difficult, if not impossible, to introduce new membrane process under the stipulated requirements. Even so, the company expects that the construction of the membrane plant will be launched sometime in 2011. Investment is estimated in the range of Kc 1.3 billion. The important parts of the project are already issued in relation to building permits, etc.

Whilst Arnika remains opposed to the continued operations of the mercury electrolysis plant, it has been willing to compromise particularly as Spolchemie is facing serious financial difficulties. Measurement of mercury emissions and content are made annually and will continue until a membrane process plant is introduced. Similar challenges are being faced at Spolana's chlorine plant at Neratovice and throughout the region where mercury electrolysis still dominates production.

| <b>Chlorine Capacity Central &amp; South East Europe<br/>(unit-kilo tons)</b> |                |          |           |
|---|----------------|----------|-----------|
| Producer  | Location       | Capacity | Process   |
| Anwil   | Wloclawek      | 214      | Membrane  |
| BorsodChem  | Kazincbarcika  | 181      | Mercury   |
| BorsodChem  | Kazincbarcika  | 120      | Membrane  |
| Chimcomplex   | Borzesti       | 107      | Membrane  |
| NCHZ  | Novaky         | 76       | Mercury   |
| Oltchim   | Ramnicu Valcea | 106.8    | Membrane  |
| Oltchim   | Ramnicu Valcea | 186      | Mercury   |
| PCC Rokita  | Brzeg Dolny    | 125      | Mercury   |
| Polymeri  | Devnya         | 124      | Mercury   |
| Spolana   | Neratovice     | 135      | Mercury   |
| Spolchemie  | Usti nad Labem | 61       | Mercury   |
| TKI Hrastnik  | Hrastnik       | 15       | Membrane  |
| Zachem  | Bydgoszcz      | 60       | Diaphragm |
| ZAT   | Tarnow         | 43       | Mercury   |
| Membrane  |                | 562.8    |           |
| Diaphragm   |                | 60       |           |
| Mercury   |                | 931      |           |
| Total   |                | 1553.8   |           |

#### **Polymeri-membrane investment**

Polymeri at Devnya has decided to replace its 30-year-old chlorine installation with a new plant that meets all European standards and ecological requirements. The investment exceeds €85 million. The construction of the new membrane electrolysis unit will last 26 months, during which production will continue on the old installation. The plant stopped working in January due to the drop in orders, and was set to be restarted on 2 February.

Polymeri is poised to release more than 70 employees by the end of February 2010. The redundancies will be conducted in several stages due to market conditions. Since 8 January the plant has worked at around 25-30% of its capacity. Polymeri started production of chlorine and PVC in 1962, but halted PVC in the early 1990s.

#### **BorsodChem could increase capital**

According to reports, Permira and Vienna Capital Partners (VCP), the main owners of BorsodChem, have agreed with Yantai Wanhua Polyurethanes to provide enough fresh capital for the company to put

it back on a growth track. BorsodChem's management claim that an agreement could be reached in the next couple of months, under which Permira and Vienna Capital Partners (VCP) would remain majority owners in for another three years. Both the majority owners and the minority shareholders undertake to provide as much fresh funds to BorsodChem as it needs to step back on a growth track. The new funds to be supplied by the old and new owners will be invested into capacity increase, as originally planned.

In terms of current performance, BorsodChem increased sales in the second half of 2009. TDI and MDI volumes rose by 15% and 6.5% respectively against the first half of the year. Further growth is expected to take place in 2010.

#### **PCC amongst bidders for Polish Chemical Group**

PCC claims that it has won exclusive negotiating rights to buy controlling stakes in the ZA Tarnow (ZAT) and ZA Kedzierzyn (ZAK). The exclusivity ends on 22 March. However, this conflicts with the view from Nafta Polska that the sale of the three companies in the so-called chemical group is being conducted with three bidders, of which PCC is the only known name. The main complication related to Ciech is the ongoing debt restructuring with banks. An investor for Ciech may be chosen after the company reaches a deal with banks on financing.

PCC has tried before to purchase ZAT and ZAK in 2006, but was unable to reach agreement with the government. This time the German group may not be ready to meet the asking price. Due to fears that the market value may not be achieved for the Treasury, there are doubts about the viability of selling the three companies ZAK, ZAT and Ciech. Other scenarios have emerged including the possible inter merger and

acquisition between the any of the above. However, the Treasury has emphasised that this is less likely to happen, and that if a successful bidder for all three is not found the privatisation process will be scrapped altogether.

### Bids for Anwil & Spolana

Zakłady Azotowe Pulawy (ZAP) has placed a bid for an 85% stake in Anwil, and has said that if the offer is accepted by PKN Orlen, the parties would negotiate terms of transaction including the price. ZA Tarnow (ZAT) has come up with a proposal that it purchases Spolana as a separate entity. ZAT would be aiming to expand its caprolactam production, particularly in view of the pending acquisition of the German polyamide producer Unylon. By acquiring Spolana, ZAT could increase its caprolactam capacity from 95,500 tpa to 140,000 tpa. There are other bidders apparently interested in Anwil and thus a final decision is some way off. However, if ZAP should be successful it may try to block the sale of Spolana to ZAT which is its main competitor for caprolactam.

| Polish Chemical Production<br>(unit-kilo tons) |            |            |
|--|------------|------------|
| Product  | Jan-Dec 09 | Jan-Dec 08 |
| Caustic Soda                                   | 74.6       | 79.2       |
| Soda Ash                                       | 889.2      | 1219.9     |
| Ethylene                                       | 516.6      | 542.4      |
| Propylene                                      | 358.6      | 365.0      |
| Butadiene                                      | 54.8       | 57.3       |
| Toluene  | 100.5      | 117.5      |
| Phenol   | 33.1       | 44.2       |
| Caprolactam                                    | 145.2      | 144.5      |
| Polyethylene                                   | 335.3      | 354.3      |
| Polystyrene                                    | 125.1      | 112.1      |
| PVC  | 257.9      | 233.7      |
| Polypropylene                                  | 257.6      | 251.2      |
| Synthetic Rubber                               | 133.4      | 122.6      |
| Pesticides                                     | 19.3       | 34.4       |

### ZA Kedzierzyn-methanol, CO2 reductions

Zakłady Azotowe Kedzierzyn (ZAK) expects to start laying the foundations in the near future for its coal based methanol plant in the near future. This corresponds with ZAK's plans to build a new energy-heat generation complex, with a CCS installation capturing 3.3 million tpa of CO2. Both projects are coal based, and ZAK estimates that it will need around zł 5 billion to complete the coal gasification process.

The company is aiming to treat around 2.2 million tpa of coal, of which around 53% will be targeted on chemical production and the remainder being directed to produce electricity. In the first stage of gasification, it will operate two reactors, with the possibility of installing a third. This would eliminate the need to purchase gas from PGNiG. The cost of producing methanol from coal based gas is about 25% lower than from natural gas. The project costs will be covered by the company's pending equity investment, in addition to other investor contributions coupled with governmental and European supporting funds. For

the methanol project, ZAK hopes to receive in the range of zł 500-700 from the EU.

## RUSSIA

### Russian industrial production 2009

Industrial production in Russia fell by 10.8% in 2009 against 2008, with the first quarter of the year experiencing the worst performance of the twelve months period. Considerable ground was made up in the latter part of the year, and in December 2009 industrial production rose by 2.7% compared to December

| Russia-Main Production Indicators<br>(unit-million tons) |       |       |
|--|-------|-------|
| Commodity/Product  | 2009  | 2008  |
| Oil & gas condensate                                     | 494.0 | 488.1 |
| Coal   | 298.0 | 325.4 |
| Oil refining   | 236.0 | 23.7  |
| Gasoline   | 35.8  | 35.6  |
| Diesel Fuel  | 67.3  | 68.8  |
| Fuel Oil   | 64.4  | 63.9  |
| Mineral Fertilisers                                      | 14.6  | 16.0  |
| Plastics & resins  | 4.3   | 4.3   |
| Synthetic Rubber   | 1.0   | 1.1   |

2008 and by 5% compared to November 2009. The volume of oil and gas condensate production in 2009 rose by 1.2% to 494 million tons, whilst gas production declined by 12.1% to 584 billion cubic metres. The volume of coal production fell by 9.2% to 298 million tons. The production of market pulp decreased by 11.9% to 2 million tons.

Production of passenger cars for 2009 fell by 59.4% to 597,000, trucks by 64.3% to 91,400 units, and buses 46.6% to 35,500. The big decline in this sector was one of the main factors behind the decline in plastics and rubber consumption.

Russian Railways shipped 15% less freight in 2009 against 2008, totalling 1.108 billion tons. A total of 39.143 million tons of fertilisers were shipped, 7% down on the previous year, whilst chemicals totalled 24.940

million tons which was down by 19.3%. Methanol was one of the chemical products where shipments were down, although volumes tended to recover in the second half of the year following the introduction of rail discounts. Freight in fertilisers and chemicals rose 54.2% and 30% respectively in December 2009 against December 2008, indicating that a recovery is underway.



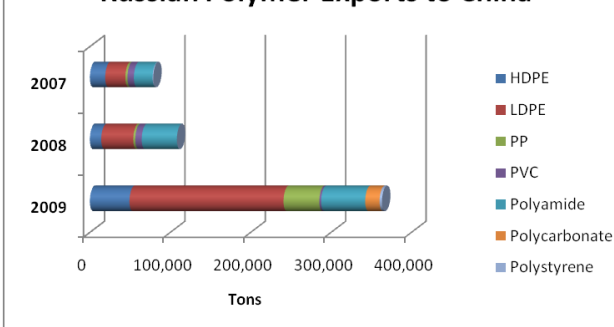
### Russian Chemical Production 2009 (unit-kilo tons)

| Product          | Jan-Dec 09 | Jan-Dec 08 |
|------------------|------------|------------|
| Ethylene         | 2,243.4    | 2,336.6    |
| Benzene          | 1,048.3    | 1,151.6    |
| Styrene          | 493.0      | 577.5      |
| Phenol           | 177.3      | 209.6      |
| Phenol           | 177.3      | 209.6      |
| Polyethylene     | 1,410.9    | 1,272.2    |
| Polypropylene    | 594.5      | 509.4      |
| PVC              | 526.9      | 578.6      |
| PVC plasticizers | 213.5      | 286.1      |
| Polystyrene      | 259.8      | 268.6      |
| Butanols         | 257.7      | 245.1      |
| Methanol         | 2,343.9    | 3,468.5    |
| Synthetic Rubber | 971.1      | 1,139.3    |
| Caustic Soda     | 1,112.7    | 1,253.4    |
| Soda Ash         | 2,320.7    | 2,819.9    |

Data by individual producer for the above products available on Statistical Database at [www.cirec.net](http://www.cirec.net)

continue operating at reasonable levels of utilisation. The largest product increases for 2009 included HDPE, LDPE, phthalic anhydride, polycarbonate, polyamide, polypropylene and xylene isomers. Polymer exports totalled 363,000 tons, showing a major increase over the previous two years.

### Russian Polymer Exports to China



### Russian chemical production 2009

Russian chemical production showed stability in the second half of 2009, although volumes for most products were lower over the full year than in 2008. Increases were seen in polyolefins and butanols production, whilst the largest fall was seen in methanol. Synthetic rubber production achieved close to normal levels in the last two quarters of 2009, despite the problems in the car and tyre industries. The IMF has forecast a growth rate for the Russian economy of 3.6% for 2010. Although this appears modest by the standards of the period 1999-2007, it does indicate a more stable economic environment than in Q4 2008 and most of last year.

### Chinese imports from Russia 2009

Russia's exports of chemical and polymers to China fell back in the fourth quarter against the first three quarters of 2009, but overall volumes were 118% up on 2008 and 60% up on 2007. Export of organic chemicals and polymers totalled 851,770 tons, helping many Russian plants to

Domestic consumption in Russia is expected to be higher this year allowing producers greater volumes of sales on the home market, but some products will continue to be targeted on export activity. HDPE export capability, for example, will be boosted by the forthcoming start-up of the new plant at Salavatnefteorgsintez, whilst polypropylene supply will be aided towards the end of the year by the start-up of the new Omsk plant. LDPE exports are expected to be lower this year with more consumption in the Russian market. Polycarbonate shipments from Kazanorgsintez are expected to increase as the plant achieves full operating rates. On the other hand, bisphenol A

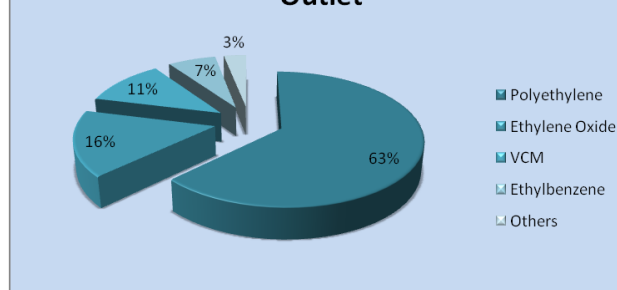
exports to China have almost halved against last year due to the focus on polycarbonate.

## Feedstocks & petrochemicals

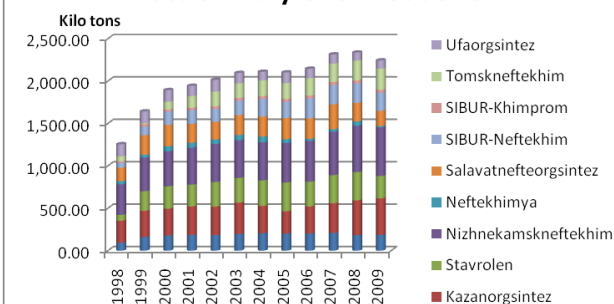
### Russian ethylene market 2009

Petrochemical prices reached their lowest ebb for a long while at the start of 2009, following the dramatic decline in oil prices and demand. Lower oil prices in the last part of 2008 sparked a chain reaction on raw material prices, including ethylene and propylene which impacted on derivatives. Ethylene production totalled 2.24 million tons in the period January-December 2009, 4% down on 2008. Market conditions were not the main cause of lower ethylene production in 2009, however, as the chief factor was the unplanned outage at Stavrolen in March.

### Russian Ethylene Consumption by Outlet



### Russian Ethylene Production



Ethylene consumption dropped for all derivatives dropped last year, aside polyethylene where production rose 9%. The start-up of the HDPE plant at Nizhnekamskneftekhim in February helped boost production, whilst other producers such as Kazanorgsintez, Tomskneftekhim and Ufaorgsintez all recorded improvements over 2008. The share of polyethylene in total ethylene consumption increased in 2009 from 56% to 63%. At the same time, ethylene oxide saw its share in ethylene consumption drop from 18% to 16%.

Despite the fall in monomer output last year, polyethylene production increased by 11%. Production of monomer is expected to be higher in 2010, not only to expected higher output at Stavrolen but also at Nizhnekamskneftekhim where two new furnaces were introduced in November 2009. Nizhnekamskneftekhim produced over 570,000 tons of ethylene in 2009 and the company expects to reach 600,000 tons for the full 12 months in 2010. Salavatnefteorgsintez has introduced a new furnace for the processing of ethane fractions which could use up to 100,000 tpa of ethane. This has been introduced to meet the demand from the new HDPE plant, coming onstream at Salavat in the near future.

Propylene production in Russia dropped 6% in 2009, due to outages at a number of plants. Stavrolen's outage at Budyennovsk was the most influential. As with ethylene, production of propylene in Russia is expected to be larger in 2010, presuming no major unplanned outages take place. With the start-up of the Omsk polypropylene project, polypropylene is forecast to rise in the share of propylene consumption to around 50%. It would indicate that propylene supply in the merchant market could become very tight.

#### **Russian butadiene market 2009**

Butadiene production and consumption in Russia dropped in 2009, but the market is expected to see improvements in 2010. Russian production dropped 21% in 2009 to 406,000 tons, with nearly all producers seeing falls. Butadiene in Russia is mainly used in the production of polybutadiene and SBR, both for which significant declines were seen in 2009. Polybutadiene production fell 24% and SBR 13% in 2009, but as with other products performed much better in the second half year.

#### **SIBUR-2009**

SIBUR-Holding produced a total of 15 million tons of petrochemical products in 2009, 3% higher in volume than in 2008. The production of dry stripped gas amounted to 14.8 billion cubic metres in 2009 against 13.3 billion metres in 2008. The production of polymers and mineral fertilisers remained stable, although significant reductions were seen in the production of rubber. The isoprene monomer plant at Novokuibyshevsk was closed permanently in 2009 by SIBUR.

**SIBUR-Holding, Production 2009 (kilo tons)**

| <b>Product</b>                   | <b>2008</b>   | <b>2009</b>   | <b>2010 Target</b> |
|----------------------------------|---------------|---------------|--------------------|
| Natural gas liquids              | 3,222         | 3,565         | 4,167              |
| Stable gasoline                  | 649           | 806           | 740                |
| LPGs                             | 3,130         | 3 353         | 3,406              |
| Monomers & fractions             | 2,133         | 1,993         | 1,499              |
| Synthetic Rubber                 | 480           | 339           | 431                |
| Polymers                         | 537           | 597           | 563                |
| Organic chemicals                | 1,040         | 969           | 1,217              |
| Mineral fertilisers              | 2,564         | 2,681         | 2,990              |
| Fuels and lubricants             | 834           | 729           | 614                |
| <b>Total:</b>                    | <b>14,589</b> | <b>15,032</b> | <b>15,627</b>      |
| Dry stripped gas (million cu. m) | 13,306        | 14,822        | 15,215             |
| Tyres (thousand units)           | 10,650        | 7,602         | 8,692              |

SIBUR's investments in 2009 totalled 29 billion roubles, with the main focus on projects intended for completion in the 2012-2013 timeframe, including Tobolsk, Kstovo and Ust-Luga.

Completed projects last year included the second stage of the South-Balyk gas processing plant, the start of production of geosynthetic materials, and the completion of modernisation at Plastik at Uzlovaya. New types of rubber were launched at Voronezhskintezkaucuk and Krasnoyarsk Synthetic Rubber Plant, whilst SIBUR-Neftekhim launched a new line for production of plastic cables.

On 22 January VEB and the club of foreign banks signed a basic loan agreement totalling \$1.49 billion. The loan funds are intended to finance the construction of the Tobolsk polypropylene project. The foreign banks include Calyon, Deutsche Bank, Intesa Sanpaolo ING Bank, Societe Generale, KfW IPEX-Bank and Sumitomo Mitsui Banking.

#### **SIBUR agrees sale of Kaucuk Volzhskiy**

SIBUR Holding and ROEL Corporation have concluded a contract of purchase and sale of 100% of shares in Kaucuk at Volzhskiy. The sale complies with SIBUR's strategy of withdrawal from non core business and reduction of the number of production sites. Kaucuk is primarily a producer of MTBE, producing 135,000

tons in 2009. Formerly, the plant produced isoprene. SIBUR will remain the principal supplier of raw materials to Kaucuk and continue to market finished products under an agency agreement. The investor ROEL Corporation is planning to develop biochemical technologies on the production site of Kaucuk. The transaction is expected to be completed within three to four months. SIBUR-Holding produces MTBE at four other locations at Perm, Tobolsk, Chaikovsky (Perm region) and Togliatti, but it is not clear at the stage if the group intends to sell these plants. .

#### **SIBUR-Yokogawa contract**

SIBUR has signed a contract with Yokogawa Electric CIS for deliveries over three years of equipment for automation at its petrochemical plants. Under the new agreement, Yokogawa Electric CIS will increase the range of equipment for SIBUR provided at special prices, at the same time extending the warranty and other conditions. Among the major projects being prepared with the participation of Yokogawa Electric CIS, include the expansion of the central control system at the gas fractionating unit at Tobolsk-Neftekhim. In addition, it will be the first in Russia to introduce a system for simulation of the pyrolysis furnace at SIBUR-Neftekhim's Kstovo cracker.

#### **SIBUR-Ust Luga project**

SIBUR Holding has been granted permission to build a complex for transshipment of LPGs at the commercial port of Ust-Luga in the Leningrad region. The project is being undertaken by subsidiary SIBUR-Portenergo. Currently, the company has received all necessary approvals, completed the stage of design work and has begun developing working documentation. Construction is expected to start in the second quarter of 2010. The design capacity of the new complex is to include 1.5 million tpa of LPGs and 2.5 million tpa of light oil.

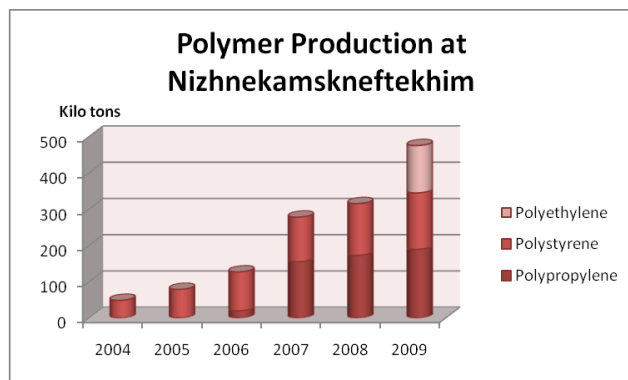
#### **Taneko-refinances \$2 billion loan**

Tatneft has begun talks with lenders to refinance a \$2 billion loan signed in April 2008 to construct the Taneko refinery complex. Another secured pre-export financing loan is most likely, following the company's \$1.5 billion pre-export deal that signed in November last year. As with the original \$2 billion loan, proceeds of that deal were used to back the first phase of the refinery and petrochemical complex at Nizhnekamsk.

The refinery is designed to increase the utilisation of oil production in Tatarstan. In total, Tatarstan produced 32.508 million tons of crude oil in 2009, 0.75% up on 2008. Of the total, Tatneft produced 25.850 million tons and the small oil companies in Tatarstan produced 6.657 million tons. Tatneftekhiminvest Holding aims to consolidate oil production in Tatarstan in the next few years at 31-32 million tpa. The oil refining priorities include increasing the volume of oil and bitumen processed in the republic; and increasing the effectiveness of technology and quality of oil products. The launch of new Taneko and TAIF-NK facilities will by 2015 allow increase oil processing to 23 million tpa, or 9.5% of the total Russian oil processing. Advanced processing of raw materials will be targeted in the local chemical and petrochemical sectors. Nizhnekamskneftekhim has stated, for example, that company aims to process up to 30% of locally produced polymers inside Tatarstan.

#### **Nizhnekamskneftekhim 2009**

Nizhnekamskneftekhim increased its commodity sales in 2009 by 0.6% against 2008 to 70.53 billion roubles. Whilst market conditions were very weak for most of the year, the start-up of the HDPE plant in February 2009



contributed significantly to the company's output for polymers. Having started polystyrene production in 2003-2004, Nizhnekamskneftekhim has subsequently added polyolefin capacities resulting in total polymer output of 475,558 tons in 2009. This figure is expected to be surpassed in 2010.

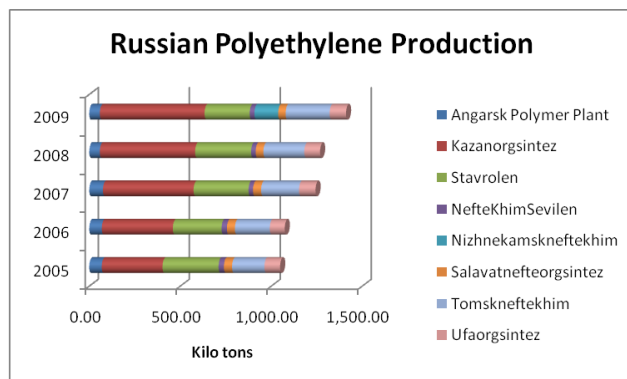
The company expects a profit of 2.9 billion roubles in 2009 against 7.5 billion roubles in 2008. The second half of 2009 was much better than the first half; with export sales helping Nizhnekamskneftekhim achieve high utilisation rates for most of its plants. Exports in 2009 totalled around \$1 billion which was similar to

2006 earnings. Last year, the company started up its new HDPE plant increasing total polymer capacity to 610,000 tpa, whilst two new SRT-VI cracking heaters were erected at the ethylene plant. At the Kama Fields Industrial Park, production units of 1,000 tpa of multifilament yarn and 9,000 tpa of stretch film were launched. Nizhnekamskneftekhim expects further investments this year in relation to downstream processing units and the ongoing modernisation of the petrochemical complex.



**Sulzer-Salavatnefteorgsintez**

Sulzer Chemtech is finalising a project to modernise the two major pillars of rectification at the cracker at Salavatnefteorgsintez. Accordingly, a contract for the modernisation was signed by Sulzer Chemtech in late December 2009 which is an important part of the expansion from 300 to 380,000 tpa. Equipment for both columns need to be placed on a platform of Salavat in late April this year. Salavatnefteorgsintez reports that it has completed the construction of the HDPE unit. Total investments in the project amounted to 6.3 billion roubles, located on a site of 5.4 hectares giving the possibility of further expansion.

**Bulk Polymers****Russian polymer production 2009**

PVC production in Russia totalled 526,860 tons in 2009, 9% lower than in 2008. Production dropped at all plants aside Plastikard, which increased volumes by 1% over the previous year. Lower production in 2009 is attributed to the reduced consumption of resin in the first half of last year. After warehouses of producers and traders emptied its stocks around April, the market started to improve and production levels revived as the year progressed. Production is expected to surpass 2009 volumes in 2010.

The main sources of polymer imports into Russia remain South Korea and China, with most products recording lower volumes in 2009 against 2008. Major falls were seen in HDPE and PVC imports. Russia imported a total of 114,950 tons of polystyrene last year which was 34% lower than in 2008. Imports of polystyrene strengthened in late 2009, with the trend expected to continue in 2010. ABS imports totalled 23,880 tons last year, which showed an increase of 11% over 2008. The sole Russian producer of ABS, Plastik at Uzlovaya, significantly reduced production in 2009 enabling greater import volumes. South Korea is the dominant importer of ABS into Russia.

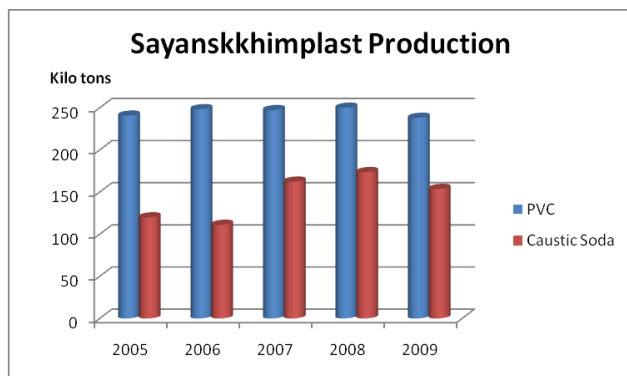
| South Korean Polymer Exports to Russia (unit-kilo tons) |         |         |        |
|---|---------|---------|--------|
| Product   | 2009    | 2008    | 2007   |
| PET   | 108.091 | 127.878 | 87.899 |
| PVC   | 34.739  | 44.213  | 46.614 |
| Polystyrene   | 38.513  | 39.128  | 24.450 |
| HDPE  | 39.994  | 101.155 | 84.749 |
| LDPE  | 6.974   | 15.452  | 10.781 |
| ABS   | 15.796  | 18.067  | 15.804 |

| Chinese Polymer Exports to Russia (unit-kilo tons) |        |         |         |
|--|--------|---------|---------|
| Product  | 2009   | 2008    | 2007    |
| PET  | 59.687 | 144.223 | 193.56  |
| PVC  | 71.889 | 173.647 | 106.191 |
| Polystyrene  | 32.538 | 52.09   | 49.802  |

Polyethylene production in Russia has risen each of the five years against the preceding year. Production totalled 1.41 million tons in 2009 against 1.27 million tons in 2008, effectively due to the start-up of the plant at Nizhnekamskneftekhim. This year, volumes are forecast to exceed 1.5 million tons. Polypropylene production in Russia increased 18% in 2009 to 594,550 tons. Aside Tomskneftekhim, all producers recorded increases helped to a large extent by export activity.

**Sayanskkhimplast PVC expansion**

Sayanskkhimplast increased PVC capacity at the end of 2009 to 280,000 tpa, 12% above the original design. Other capacity increases included chlorine by 2% to 153,000 tpa and caustic soda 2.4% to 173,000 tpa. Expansions have been facilitated by modernisation of the existing units, technical re-equipment, etc.



Work was carried out in several steps without affecting current production. Sayanskkhimplast has started the construction of the fourth furnace for VCM pyrolysis, aimed at the increase in PVC capacity to 300,000 tpa. The company longer term is aiming to increase PVC capacity to 400,000 tpa by 2015. However, these plans would depend on greater availability of ethylene, either from Angarsk Polymer Plant or through the construction of its own ethane based cracker based on Kovytk deposits. At current production levels, Angarsk Polymer Plant would not be able to supply Sayanskkhimplast with around 200,000 tpa of ethylene, so some sort of investment will be required. In 2009, Sayanskkhimplast

accounted for 45% of Russian PVC production.

**ABS Market in Russia (unit-kilo tons)**

|                | 2009 | 2008 | 2007 |
|----------------|------|------|------|
| Production     | 7    | 14.6 | 18.3 |
| Exports        | 0.1  | 0.2  | 0.5  |
| Imports        | 23.9 | 26.9 | 26   |
| Market Balance | 30.8 | 41.3 | 43.8 |

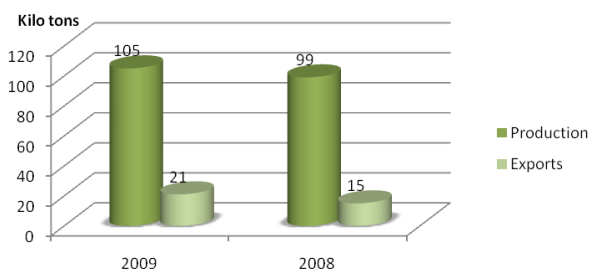
**Russian ABS imports**

The reduction in output in major industries that consume plastics impacted sharply on ABS plastics consumption in 2009. Domestic market consumption dropped from 41,700 tons in 2008 to 30,700 tons in 2009. The sole producer Plastik at Uzlovaya, part of the SIBUR group, stopped production for four months due to stagnation in the car industry. Overall for 2009, the company reduced

production by 52% from 14,600 tons to 7,000 tons.

Imports declined in 2009, although demand started to increase in the second half of the year partly in response to the government supported revival of the car industry. As a result, ABS imports fell by only 11% in 2009 compared against 34% for polystyrene. Demand for ABS plastics is not expected to rise earlier than the end of the spring, with a consumption forecast of 35-36,000 tons for 2010.

**Russian BOPP Production & Exports**



**Russian BOPP production**

BOPP production in Russia totalled 105,000 tons in 2009, 6% higher than in 2008. Around 20% of production was exported in 2009, against 15% in the previous year. Domestic demand has remained

relatively resilient over the past year, despite a fall in consumption, and is expected to perform well this year.

**Aromatics & derivatives**

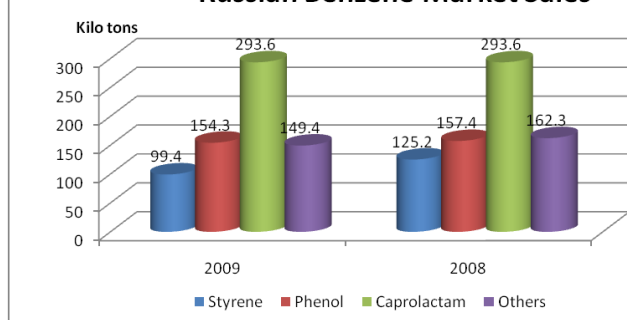
**Russian benzene production 2009**

Benzene production in Russia totalled 1.05 million tons in 2009, which was 9% lower than in 2008. Captive consumption at the main producing plants felt the downturn mostly due to impact on styrene. Increases in benzene production were noted step by step throughout the year, and the gap in production volumes against 2008 narrowed quickly in the last quarter of 2009. Market based sales of benzene totalled 68,600 tons in December 2009, which was 46% higher than the preceding December. Commodity sales of benzene for the whole of 2009 totalled 696,700 tons, which is 6% or 46,700 tons lower than in 2008.

Increases in benzene production in 2009 were noted at the Ryazan refinery, owned by TNK-BP, rising 19%, Chelyabinsk Metallurgical Combine which increased 17% and Angarsk Polymer Plant which increased by 4%. However, most of the major benzene producers reduced production last year, with styrene and phenol output

impacting on the demand for benzene. Commodity sales of benzene on the Russian domestic market were dominated by Gazprom-Neft at Omsk, Stavrolen at Budyennovsk, West-Siberian Metallurgical Complex and Slavneft-Yaroslavlorgsintez.

**Russian Benzene Market Sales**



Styrene was the main factor affecting benzene consumption in 2009, with both captive and commodity sales down on the previous year. For commodity sales, a total of 99,400 tons of benzene was sold to styrene producers in 2009, which was 26% lower than in 2008.

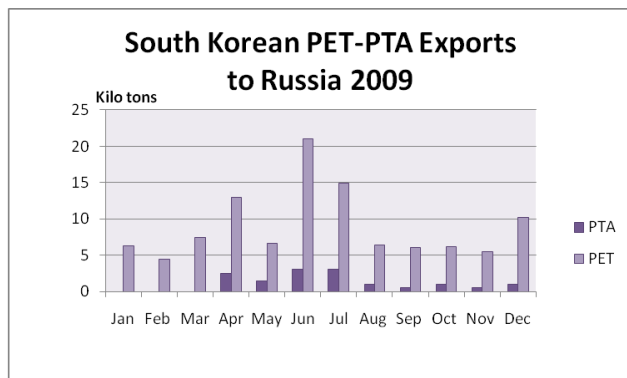
Nizhnekamskneftekhim purchased 48,900 tons of benzene on the open market in 2008, to supplement its own production, but deliveries were reduced to 8,500 tons in 2008. Total consumption of benzene in the production of phenol in 2009 also fell, although only by 2% to 154,300 tons. The prolonged shutdown at Saratovorgsintez was the significant factor in reducing benzene consumption. Caprolactam producers purchased around the same volume of benzene in 2009 as 2008, totalling 293,200 tons.

**Russian orthoxylene consumption 2009**

Orthoxylene consumption in Russia totalled 108,500 tons in 2009, 2% down on 2008. Phthalic anhydride accounted for 79,200 tons of orthoxylene sales on the domestic market, 2% up on 2008. Sales to the paints and solvent industries dropped 27% to 14,900 tons. Gazprom-Neft from the Omsk refinery accounted for 50% of sales on the domestic market, followed by Ufaneftekhim (31%) and Kinef (19%).

## Russian PTA

Despite an increase in PTA production at Polief in 2009, a rise in domestic PET production by around 40% over 2008 has re-opened opportunities for imports into the Russia. South Korea was responsible for 14,107 tons of imports into Russia in 2009, although this was considerably less than the PET shipments which totalled 108,091 tons. South Korea also started exports of PTA to Lithuania in May 2009 and for the whole year exported 27,848 tons. Senezh suffered shortages of PTA in 2009, whilst SIBUR-PETF was reported not to have faced any supply problems. Senezh purchased around 12,000 tons of PTA from South Korea, seven times higher than in 2008. With anti-dumping duties being applied by China to South Korean imports, efforts may increase to sell more PTA to Russia and Lithuania.



Both SIBUR-PETF and the Senezh plant are undergoing planned maintenance in the first quarter, which will reduce demand for PTA in the short term. SIBUR-PETF is closing the Tver plant for two weeks in the second half of March. The second quarter could see imports start to rise again as PET producers run plants at full capacity, whilst the expected start-up of the Alko-Naphtha plant could provide a new opportunity for PTA sales. Although the plant is located at Kaliningrad on the Baltic coast, any imports required will be attributed to Russia and any shipments sold by Polief will be considered as domestic sales. With a capacity of 220,000 tpa of PET, Alko-Naphtha could be in line to consume in the range of 180,000 tpa of PTA. Thus, if the new plant starts by the middle of the year, as planned, then Russian imports of PTA could exceed 100,000 tpa in 2010.

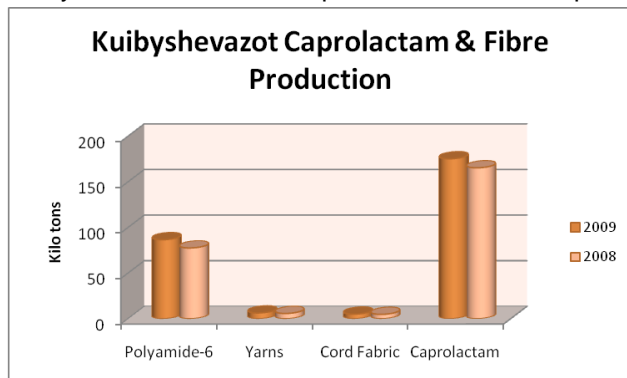
Polief is estimated to have increased PTA production by 15% in 2009, although precise data is not yet available. PTA exports from Russia fell last year, dropping 27% to 28,400 tons. Of this, 15,900 tons or 55% were shipped in the first quarter when one of the Polief PET lines was idled. The main destination for Russian PTA exports is Belarus, accounting for around 60%, followed by Lithuania and Poland. As both PET units at Polief are now operating, both exports and domestic merchant sales are expected to drop further in 2010.

## Polief-VTB update

VTB Bank closed a deal on 25 December 2009 for the purchase of 32.5% in Polief. The application for the purchase of shares in Polief by VTB took place in late November. The stake has been acquired from Selena. It is not clear where this transaction will take Polief, but there is some talk that there may be some integration with the paraxylene facilities at Ufaneftekhimi.

## Kuibyshevazot 2009

Kuibyshevazot increased production for most products in 2009, despite the recession and the reduced output in the first half of the year. Caprolactam production rose 6% and polyamide 11.7%. Increases were also noted for technical yarns and cord fabric. Urea production dropped 0.5% to 312,600 tons and ammonia dropped 9% to 556,900 tons.

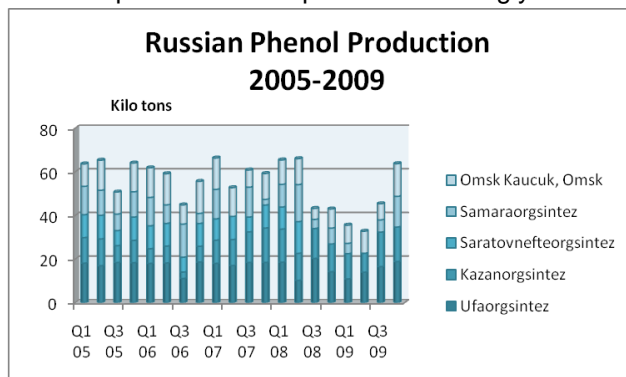


Along with growth in production, the company introduced environmental measures which reduced gross emissions in 2009. Resource-saving technologies in 2009 reduced consumption rates of raw materials for caprolactam and urea. A new air separation unit was introduced last year, in addition

to the completion of the fourth unit for the production of polyamide-6. Despite an increase in physical production, revenues declined 16.5% to 16 billion roubles and net profit fell to 279.8 million roubles.

### Russian phenol consumption 2009

Russian phenol consumption rose strongly in the second half of 2009 against a tightening supply side caused primarily by the extended shutdown at Saratovorgsintez. During 2009, production of phenol-formaldehyde resins and bisphenol A grew over 2009 helping to sustain demand for phenol. Overall, phenol consumption dropped 12% in 2009, but should be higher in 2010. Due to the expected continued stoppage at Saratovorgsintez, phenol supply is forecast to tighten further this year. The four active producers are currently running at close to full capacity, with fourth quarter output in 2009 totalling 63,700 tons. Overall, Russian phenol production totalled 177,300 tons in 2009 against 209,600 tons in 2008. Imports have remained small-scale until now, but may need to rise unless domestic availability improves.

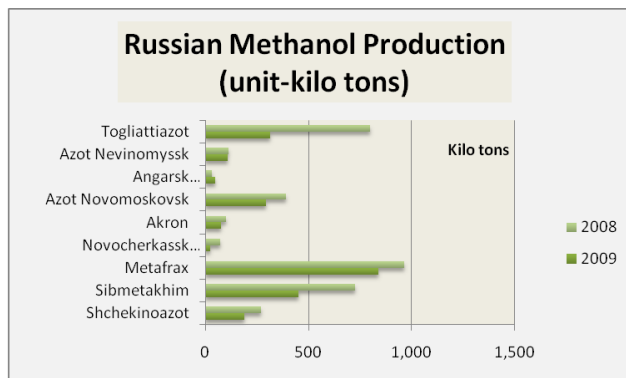


### Methanol & gas based chemicals

#### Mendeleevskazot-general design contract awarded

Mendeleevskazot has awarded a contract in January to the Scientific Research and Project Institute for Urea & Organic Synthesis, at Dzerzhinsk, to undertake general design and equipment delivery for the Ammonium project. The project involves methanol, ammonia and urea. The contract is worth 1.5 billion roubles with project financing already started by the Foreign Trade and investment Bank VEB. On the Japanese side, Sumitomo has approved \$350 million finance for the project which is expected to take 35 months to construct.

The licensor of the project is Haldor Topsoe, with Mitsubishi Heavy Industries acting as the contractor. In November 2008, Mitsubishi Heavy Industries and Sojitz Corporation signed agreements on providing a package of engineering specifications, design, etc. The new complex will depend on gas from Gazprom in volumes of around 800 million cubic metres per annum. Most of the intended output will be sold in Tatarstan to aid agriculture, with some methanol being delivered to Nizhnekamskneftekhim. The Mendeleevsk complex may act as a form of competition for Togliattiazot, which is the only company in Russia with world scale plants for both ammonia and methanol.



#### Shchekinoazot-Khimvolokno

Shchekinoazot managed to survive relatively well due to reduced raw material prices and financial support from the banks. Nearly all the company's investment resources are targeted on the construction of the

450,000 tpa methanol plant which is scheduled to start sometime in 2010. Although the capacity is only marginally higher than the existing methanol plant, the new technology will facilitate much lower energy costs and thus improve profit margins.

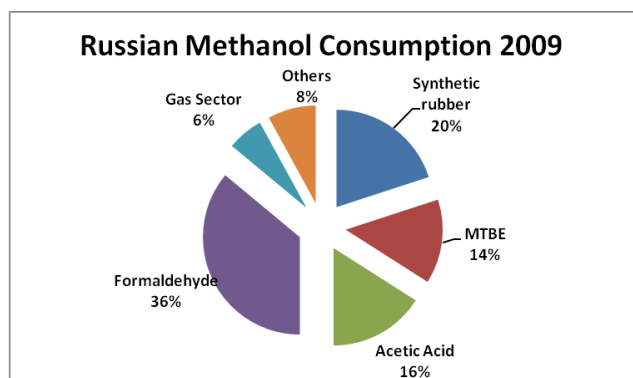
Shchekinoazot does not anticipate major changes in financial performance in 2010. Whilst sales' volumes are expected to be higher, the rises in energy costs will tend to offset or put pressure on margins. Last year, one of the most successful developments for Shchekinoazot was the increase in captive consumption of methanol into phenol-formaldehyde resins. Utropin production has been started, whilst quality improvements have been made in the production of dimethyl esters. Neighbouring plant Khimvolokno has started the production of 280 tons of spanbond and 850 tons of high-strength threads per month.

#### Togliattiazot-gas prices

Togliattiazot stopped more than half the units at the end of 2009 due to high gas prices. Currently, it is not operating seven of eleven units, including five for the production of ammonia and one for urea and methanol. Samararegiongaz is talking of lowering prices, but so far no results. Without some concessions, Togliattiazot could incur serious losses although it denies it will be forced to stop production completely. Togliattiazot consumes about 360 million cubic metres of gas per month, of which about 220 million cubic metres comes from set gas prices and the remainder at a higher equation decided by the State.



The set price in the Samara region from 1 January 2010 was established at 2835 roubles per thousand cubic metres which is 39% higher than at the start of 2009 and 15% above Q4 2009. Discussions are underway with Samararegiongaz to examine if it is possible to reduce the price of the fuel by almost 17%, which could equate to savings for Togliattiazot of around 80 million roubles a month.



#### **Russian methanol consumption 2009**

Russian methanol consumption dropped 10% in 2009 to 1.5 million tons. Most of the product is still processed into formaldehyde, followed by MTBE, synthetic rubber and the gas sector. Acetic acid's share in total consumption increased in 2009, but only in relative terms as production volumes remained similar to 2008. Production of methanol declined 35% in 2009 to 2.343 million tons, with exports down 3% to 940,000 tons. The main fall was seen in intra-plant sales, which dropped 22%. Demand over the winter months has yet to show declines, despite expectations by producers. Methanol prices are expected to rise in

February and March due to higher energy costs which have increased 8% from the start of 2010.

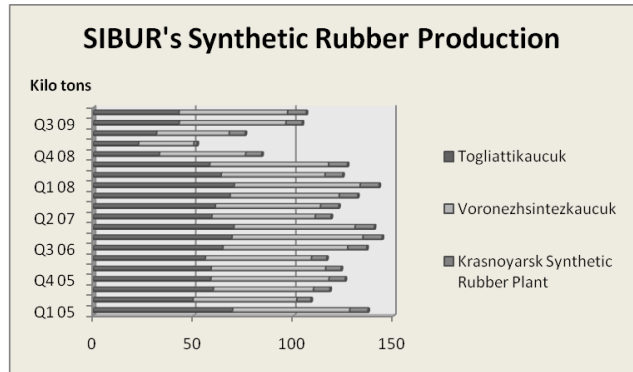
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### **Synthetic Rubber**

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#### **SIBUR-Holding rubber production 2009**

SIBUR-Holding produced 338,512 tons of synthetic rubber in 2009 at its three plants, against 478,517 tons in 2008 and 513,878 tons in 2007. In view of the rising production levels in the latter part of last year, SIBUR has forecast a total of 431,000 tons for 2010. Voronezhsintezkavuk produced 171,269 tons of synthetic rubber in 2009, which is 21.1% less than in 2008. Polybutadiene rubber production at Voronezh amounted to 76,554 tons, SBR 62,561 tons, thermoelastomers 25,692 tons, and latex 3,665 tons. Sales for Voronezhsintezkavuk were divided between exports of 92,700 tons and domestic shipments of 83,300 tons.



Togliattikavuk produced 140,250 tons of synthetic rubber in 2009, 38% down on 2008. Production of butyl rubber and copolymers were suspended at the start of the year due to weak demand. Butyl rubber totalled 40,700 tons in 2009, 8% lower, whilst isoprene rubber dropped 52% to 58,000 tons. Last year, the company started the reconstruction of the isoprene monomer plant in order to introduce the one-step synthesis process. The project will increase the design capacity of isoprene monomer to 100,000 tpa and significantly reduce production costs. The one-step synthesis process is scheduled to begin in 2014.

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### **Other products**

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#### **Russian potassium chloride production 2009**

Silvinit reduced the production of potassium chloride in 2009 by 31.4% to 3.5 million tons against 5.1 million tons in 2008. Silvinit is planning in 2010 to invest over 3 billion roubles, as well as increase the production of potassium chloride by 20% (against 2009) to 4.2 million tons. Silvinit has started the production of 99% potassium chloride, to support the 98% and 95% grades already in operation. The product grade 99% is used in the chemical industry, building materials, organic synthesis, pharmaceuticals and medicine, etc. The company has finished building of a complex of a new mine, with an annual capacity of 4 million tpa of silvinit ores.

The other main Russian producer Uralkali produced 2.621 million tons of potassium chloride in 2009, a 45.3% reduction against the 2008 total of 4.793 million tons. The decline in 2009 production volumes was prompted by a substantial fall in global demand for potash fertilisers. Lower potash consumption in several markets resulted in the company working at reduced utilisation throughout 2009. The demand for potash fertilisers, however, started to recover gradually in late 2009. In November 2009, Uralkali produced about 307,600 tons of potassium

chloride, a 44.6% increase over November 2008. The company's output in December was 199,400 tons, a 53.5% increase over December 2008.

### **Evrokhim-phosphoric acid modernisation**

Evrokhim is modernising its phosphoric acid facilities at Kingisepp in the Leningrad region, at a cost of 600 million roubles. This is aimed at helping the plant to produce phosphoric acid by reducing the four stage process to two-stage, in addition to increasing the concentration from 24% to 34%. The modernisation will also lead to a reduction in energy consumption levels, whilst the project provides for the transportation of a by-product phospho-polyhydrate. The investment programme will be completed by 2011.

### **Khimgrad investments**

Danish group Hempel is considering the possibility of developing the production of paints in Tatarstan *both* in the special economic zone Alabuga and in the Technopolis Khimgrad in Kazan. The cost of the project is estimated in the range of €15-18 million. Production capacity of 18 million litres of paint per annum is expected to start in 2012, if approval is given by Hempel in the second quarter this year.

Sberbank has opened a credit line ZAO Danaflex for 198.5 million roubles for a period of five years. The loan funds are intended to finance the first stage of constructing a unit for the production of flexible packaging materials at Technopolis Khimgrad. This is the third joint investment project between Sberbank and ZAO Danaflex.

### **Nankorund-Dzerzhinsk**

Dzerzhinsk based Nankorund plans to start production in February 2010 of pure aluminium oxide, following investment support from the local administration in Nizhniy Novgorod. The initial production volumes are expected at 5 tons per month which will be expanded to 10 tons per month in 2011 and 15 tons in 2015. Nankorund was created in 2008 under the combined efforts of the Nizhniy Novgorod regional venture fund, and companies VTB and GK Binar. Nankorund has been set the task of introducing resource and power saving technologies.

### **Kaustik-magnesium hydroxide project**

Russian technology group Rosnano has agreed to support the construction of a new magnesium chloride plant by Kaustik at Volgograd. The project will be used as a flame retardant additive to be sold on the domestic market, in addition to exports. The total project budget is 3.1 billion roubles, of which Rosnano will provide 167 million roubles in addition to providing a loan to Nikokhim for 1.11 billion roubles.

The project includes the design and construction of an environmentally safe and economically efficient plant for nanostructured magnesium hydroxide, with a capacity of 25,000 tpa. The EPC contract has been allocated to Andritz AG (Austria). The project is expected to start construction in the first quarter of 2010, with the launch pilot to take place in the third quarter of 2011. Production at full capacity is targeted for 2013.

Russia has a shortfall of flame retardants. Whilst it currently imports only 5-6,000 tpa of magnesium hydroxide, demand is growing at 10-20%. The availability of locally produced magnesium hydroxide may help to speed up consumption levels in an effort to try and reduce the number of fires that take place from unsafe furniture, buildings, etc. Laws have been introduced increasing requirements for fire safety, as well as the introduction of new rules for the cable industry and construction. This will introduce stricter requirements for non-flammability and non-toxicity products, which will stimulate the growth of this market in the future. The share of imports in Russia's market flame retardants comprises about 75%, with the domestic market lacking many kinds of flame retardants such as bromine-containing, high-quality aluminium trihydrate, high-quality magnesium hydroxide, and phosphorous flame retardants.

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## **Organic Chemicals**

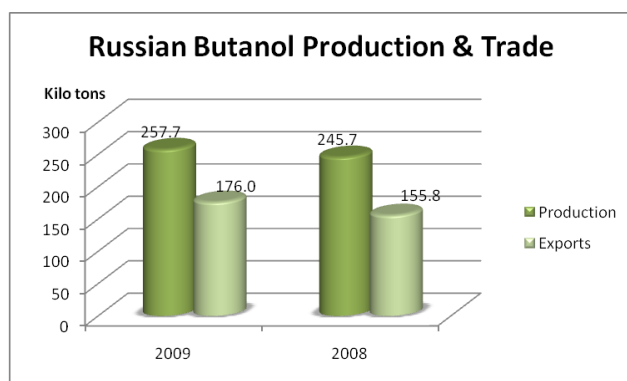
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### **Russian oxygenated solvents 2009**

Russian acetone exports increased 12% in 2009 to 42,500 tons, with domestic consumption reduced by 10% to 54,600 tons. The main exporter of acetone in the past year was Samaraorgsintez, accounting for 57% of total shipments or 24,300 tons. Other exports were undertaken by Ufaorgsintez (2,000 tons), Omsk Kaucuk (13,000 tons), and Kazanorgsintez (3,000 tons). Kazanorgsintez reduced exports due to increased consumption in bisphenol A production. The main destination for Russian exports included Belarus, China and Finland, which

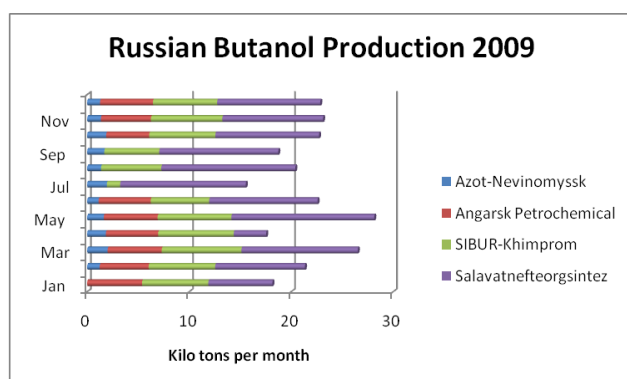
accounted for 74% of shipments. The main reason for reduced domestic consumption in 2009 was the extended shutdown of the MMA plant at Dzerzhinsk Orgsteklo, although Sintez at Dzerzhinsk increased its purchases.

Russian production of butyl acetate totalled 44,700 tons in 2009, 4% down on 2008. Azot at Nevinomyssk accounted for 41% of production and Dmitrievsky Chemical Plant 35%. Ethyl acetate production totalled 21,100 tons which was 31% down, due mainly to reduced competitiveness in the global market. Russia exported 35,900 tons of butyl acetate, 14% higher than in 2008. Russia's largest consumer of butyl acetate is Finland, but its share has fallen in total exports to 28% against 43% in 2008. Panama accounted for 26% of Russian butyl acetate exports in 2009, followed by Turkey 21%.



Exports will remain a priority for domestic companies producing butanols over the next few years. The domestic market is growing slowly, but export opportunities will help to keep Russian plants running at close to full capacity. Production for the four plants totalled 257,720 tons which was 5% up on 2008. SIBUR-Khimprom at Perm increased volumes by 9% over 2008, Salavatnefteorgsintez 8%, and Azot at Nevinomyssk 2%, whilst Angarsk Petrochemical Company reduced production by 7%. China is the main destination for Russian butanol exports, accounting for 92% of total shipments.

On the domestic market, butanols are used mainly in the production of butyl acetate and butyl acrylate. Other applications include plasticizers, additives to lubricants, and as a solvent in the manufacture of certain types of paints and coatings. Domestic demand is fully met by domestic production, and imports into the country are almost non-existent.



#### **SIBUR-Khimprom, butanols modernisation**

SIBUR-Khimprom at Perm is undertaking modernisation of its butanols plant, by replacing the vacuum system of production by BOC Edwards. Replacing the old vacuum system for dry vacuum pumps will help to reduce the cost of production including lower energy consumption.

#### **Sterlitamak Petrochemical Combine, investments**

Sterlitamak Petrochemical Plant increased turnover by around 35% in 2009, due principally to the start-up of synthetic rubber production, based on raw materials

supplied by Nizhnekamskneftekhim. A total of 31,600 tons of rubber copolymers and 40,000 tons of antioxidants were produced. The company is currently modernising its antioxidant facilities for Agidol-2, and is also investing 341 million roubles into the production of Agidol-110 with a capacity of 2,000 tpa. Around 90% of the equipment has been provided for the production of Agidol-110, with around 40% of installation completed. Agidol-110 is used as a highly effective antioxidant and heat stabiliser for rubber and latex, polymers and glues.

The technical upgrading of the Agidol-2 unit is being undertaken to increase capacity to 1,500 tpa and to reduce costs. Investments into this project have totalled 89 million roubles, with commissioning to take place in February 2010. Agidol-2 is used for white and light products in order to stabilise rubber, rubber, latex, oil, plastics, etc. Sterlitamak Petrochemical Plant is the sole producer of antioxidants in Russia.

#### **Promsintez, investment plans**

Promsintez at Chapayevsk, in the Samara region, has announced plans to invest \$110 million in its development and modernisation over the next few years. For 2010, the company is to build a \$3.6 million plant to produce grammonite and granulite explosives. In 2011, Promsintez is to invest \$50 million in the construction of a monomethylaniline plant with a capacity of 36,000 tpa. Another \$56.4 million is projected at a later stage to be invested in the modernisation of the company's nitrobenzene, nitric acid and sulphuric acid plants. Promsintez is 96.6% owned by Visial Trading Limited (Cyprus).

### Russian epoxy resins 2009

Russian epoxy resin production fell 40% in 2009, to 6,790 tons. Large consumers cut their purchases significantly against 2008. Russia's largest producer of epoxy resins Sverdlov at Dzerzhinsk, which accounts for around 30% of production, performed relatively well under the market conditions. Other producers saw capacity utilisation drop sharply; i.e., Pigment at St Petersburg produced 1,000 tons from a plant capacity of 20,000 tpa and the Kotovsky paint factory operated on a similar ratio against its capacity of 9,000 tpa. Finnish paint company Tikkurila is considering the purchase of the Kotovsky paint factory, located in the Tambov region, and a decision is expected in the next few months. The epoxy resin market in Russia has started to see some degree of recovery in 2010, but it is slow and any improvements this year are likely to be modest.

### Ukraine

#### Ukrainian Chemical Production (unit-kilo tons)

| Product           | Jan-Dec 09 | Jan-Dec 08 |
|-------------------|------------|------------|
| Acetic Acid       | 82.6       | 154.5      |
| Adipic Acid       | 0.0        | 29.3       |
| Ammonia           | 3109.4     | 5026.8     |
| Benzene (-95%)    | 187.5      | 213.1      |
| Benzene (+95%)    | 75.8       | 139.5      |
| Caprolactam       | 19.8       | 43.1       |
| Caustic Soda      | 46.2       | 79.0       |
| Ethylene          | 0.0        | 85.0       |
| Ethyl Acetate     | 17.7       | 23.9       |
| Formaldehyde      | 22.4       | 80.3       |
| Methanol          | 60.2       | 171.4      |
| Polyethylene      | 0.0        | 48.4       |
| Polypropylene     | 99.1       | 84.1       |
| Polystyrene       | 20.6       | 35.7       |
| Polyvinyl Acetate | 5.2        | 9.8        |
| Soda Ash          | 680.0      | 977.9      |
| Titanium Dioxide  | 105.6      | 125.9      |
| Toluene           | 4.8        | 6.2        |
| White Spirit      | 69         | 73.8       |

#### Ukrainian chemical production 2009

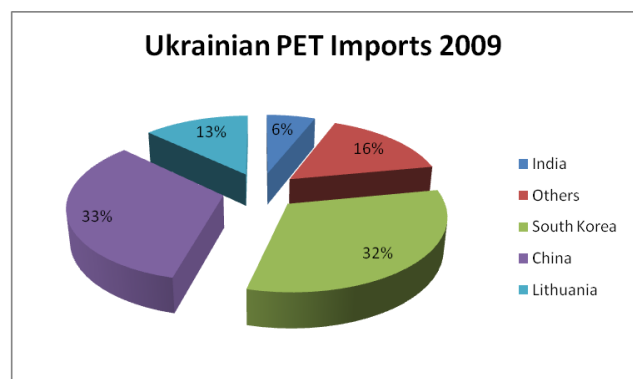
Chemical production fell dramatically in Ukraine in 2009, as a consequence of a series of problems relating to the economy and feedstocks. Market conditions and high gas prices were the main factors affecting producers, and nearly all products saw a decline of some degree over the preceding year.

The Ukrainian Cabinet has approved a number of measures designed at supporting the chemical industry, including freight and electricity tariffs, but producers still face a hard year ahead. The continued outage of Karpatneftkhim's petrochemical facilities at Kalush, which began in June 2008, is a key absence for the country's chemical industry. Polypropylene production at Lisichansk was the main polymer to see an improvement. Azot at Severodonetsk was forced to lower output of methanol, acetic acid and formaldehyde in 2009 due to mainly the cost of gas combined with the effects of a weaker market. Azot continues to examine the prospects for restarting its idle 220,000 tpa plant for LDPE, which was closed in the 1990s due to a lack of ethylene. The capacity of the plant is 220,000 tpa, and would be of help to the Ukrainian market but there are no cheap solutions available.

#### Ukrainian polymer & organic chemical imports 2009

Polymer and organic chemical imports into Ukraine were down across the board in 2009, aside one or two exceptions. Ukraine imported 15,030 tons of PVC films in 2009, 22% less than in 2008. Polypropylene films dropped 21% to 24,490 tons, which mainly comprises BOPP and is mainly imported from Russia. In total, imports of polymer films dropped 24% in 2009 to 52,310 tons with polyethylene films seeing the largest fall of 33% to 12,790 tons.

#### Ukrainian PET Imports 2009



Ukraine's imports of PET from India grew sharply in 2009, although the leading importers remain China and South Korea. Russian PET is supplied to Ukraine only in small quantities. Supplies from India in 2009 increased from Industries and JBF Industries. The cost of pellets in the domestic market of Ukraine depends a large extent on its Asian hryvnia exchange rate. Consumers of PET faced a difficult situation from the collapse of the hryvnia in 2008, with prices more than doubling. Prices have eased back since but still remain high in terms of the local currency. If Ukraine had its own production of PET it would naturally reduce the dependence from

imports, but until now there has been no investor interest in building a plant.



Ukraine imported 47,080 tons of polypropylene in 2009, 17% lower than in 2008. Russia accounted for 10,120 tons or 21% of the total, mainly from Nizhnekamskneftekhim, Stavrolen and Tomskneftekhim. Other key suppliers included Slovnaft from Slovakia and BOP from Poland.

Ukraine imported 1,390 tons of pentaerythritol in 2009, 34% down on last year. Slovakia accounted for 40% of imports of pentaerythritol which is not produced in Ukraine and is used in the production of alkyd paints. Butyl acetate imports rose 48% in 2009 to 700 tons, whilst ethyl acetate imports dropped 34% to 460 tons. In 2009, Ukrainian produced 17,700 tons of ethyl acetate, which was 35% less than in 2008. White spirit imports totalled 2,660 tons which was 5.4 times lower than in 2008. In 2009, Ukraine produced 69,000 tons of white spirit, which was 7% less than in 2008. There are two producers of white spirit in Ukraine, at the Azov Oil Company at Marupol and the Shebelinka GPP.

Imports of phthalic anhydride into Ukraine totalled 3,000 tons in 2009, 40% down on 2008. Imports were sourced from Belarus (61%) and Russia (39%). The sole Ukrainian producer Lizinvest expects to restart phthalic anhydride production in February, after halting operations in October for maintenance and remaining down due to market conditions. Lizinvest produced a total of 4,800 tons of phthalic anhydride in 2009 against 2,500 tons in 2008. Exports totalled 3,700 tons in 2009, thus leaving a net market balance of 4,100 tons.

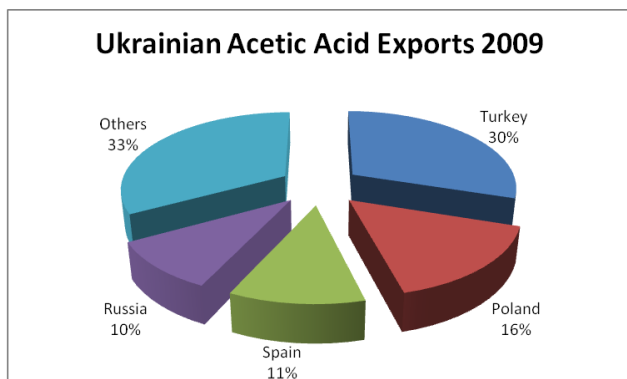
#### **Ukrainian exports of polymers & organic chemicals 2009**

Ukraine exported 11,300 tons of PVC plasticizers, 38% less than in 2008. The most important exporter in Ukraine is Prominvest Plastic which accounted for 85% of shipments in 2009. All PVC plasticizer exports are sold to masterbatch producers, with Russia accounting for 78% of trade.

Ukrainian exports of polymer films (PE, PP, and PVC) totalled 22,050 tons in 2009, 18% down on 2008. PVC film exports increased 8% to 2,760 tons, whilst polyethylene films dropped 20% to 15,840 tons. The main consumers of Ukrainian films include Slovakia, Russia, Kazakhstan and Moldova.

#### **Ukrainian methanol derivatives 2009**

Ukrainian consumers of methanol, formaldehyde and urea-formaldehyde concentrate increased purchases from Russia in 2009 due to lower prices. On the one hand Ukraine is forced to pay high prices for natural gas from Russia, and on the other hand prices of methanol and related derivatives from Russian producers are much lower than available in Ukraine.



Russian producers of methanol still benefit from relatively low gas prices, despite increases at the start of 2010. Whilst help to rail tariffs have been provided by Russian Railways, domestic consumption has been assisted by increases in formaldehyde resin capacity in 2009. Methanol production in Russia is expected to be much higher than in 2010.

Azot at Severodonetsk expects a difficult year in view of rising gas prices, and competition from Russia. High gas prices may force Azot to suspend production of methanol in 2010. This would also impact on acetic acid production which dropped significantly last year. Acetic acid production dropped 41% in 2009 to 82,574 tons, with the domestic market declining 37% to 33,100 tons. Exports saw the most noticeable fall in 2009. The main consumers of acetic acid in Russia include the food and paint industries, particularly for acetate solvents. Consumption is relatively low, however, in comparison to production and thus exports play a prominent part in Azot's sales distribution.

#### **Acetic Acid Market in Ukraine**

|                | Jan-Dec 09 | Jan-Dec 08 |
|----------------|------------|------------|
| Production     | 82.6       | 154.5      |
| Exports        | 60.5       | 114.4      |
| Imports        | 11         | 12.4       |
| Market Balance | 33.1       | 52.2       |

For urea, Odessa Portside Plant reduced production of urea by 10% in 2009 to 848,700 tons, Styrol 35.6% to 560,400 tons. However, Dneprozot increased the production by 7.4% to 695,000 tons, Azot at Severodonetsk increased by 1.4% to 407,200 tons and Azot at Cherkassy by 6% to 662,500 tons.

**Crimean Titan 2009**

Crimean Titan produced a total of 86,500 tons of titanium dioxide in 2009, 20,000 tons higher than expected. The main problem of the company at present is VAT payments to the State for exports, amounting to 130 million hryvnia. The state refuses to hold any offsets. Also, Crimean Titan is faced by difficulties in raw material supply from the Irshansky and Volnogorsky deposits.

Crimean Titan was created 7 July 2004 with the aim of establishing a processing facility for the extraction of ilmenite ore, and titanium dioxide production. The founders were Titan and RSJ Erste Beteiligungsgesellschaft GmbH now renamed OstChem. Crimean Titan is the largest producer of titanium dioxide in East Europe, with a capacity of 80,000 tpa. The company produces pigment grades TiOx-220 and TiOx-230, used in paint, plastics and rubber industries. Other grades include TiOx-270 which is used in the production of coatings, printing inks, and TiOx-280 which is used as a universal pigment in the manufacture of industrial coatings and paints. Titanium dioxide accounts for 90% of Crimean Titan's sales, with other products including iron oxide pigments, aluminium sulphate, sodium aluminate, sodium silicate, iron sulphate, etc.

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**Belarus**

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**Belarussian Chemical Output (unit-kilo tons)**

| <b>Product</b>        | <b>Jan-Dec 09</b> | <b>Jan-Dec 08</b> |
|-----------------------|-------------------|-------------------|
| Potassium Fertilisers | 2458.0            | 7374.0            |
| Nitrogen Fertilisers  | 727.4             | 1454.8            |
| Phosphate Fertilisers | 177.2             | 174.9             |
| Ethylene              | 142.8             | 142.8             |
| Benzene               | 106.4             | 95.8              |
| Caprolactam           | 115.1             | 119.6             |
| Phthalic Anhydride    | 18.8              | 15.9              |
| PET                   | 196.9             | 222.5             |

**Belarussian chemical industry 2009**

Revenues from production in the Belarussian chemical and petrochemical industry in 2009 increased by 35.4% in comparison with 2008 and amounted to 12.98 trillion Belarussian roubles. Last year, the production of paint materials in the country increased by 3.7 times in comparison with 2008 and reached 2.58 million tons. Belarus produced a total of 177,200 tons of phosphate fertilisers in 2009, which is 1.3% more than in 2008. Nitrogen fertilisers amounted to 727,400 tons, half of the level in 2008 whilst potash fertilisers declined twice to 2,485 million

tons. Over 2009 the country produced 3.525 million pieces of car tyres, or 1.2% up on 2008, 1,064 million pieces of lorry tyres 0.2% up and 483,500 thousand pieces of agricultural tyres (7.4% down).

The production of synthetic resins and plastic materials decreased by 12.2% to 353,200 tons, whilst chemical fibres and yarns production totalled 200,300 tons, 11.2% down on 2008. For 2010, production levels are expected to remain stable as long as oil and gas supplies continue to arrive. Oil supplies from Russia have faced several problems since the start of the year, and for gas Gazprom increased prices to Belarus to \$168 per thousand cubic metres in the first quarter of 2010, against \$150 in 2009.

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**Central Asia**

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**Turkmenistan-Japanese investments**

Turkmengaz has signed a memorandum of mutual understanding with the Japanese companies JGC Corporation and Itochu Corporation concerning future projects on processing of natural gas. These companies in the past have invested considerable sums in the Turkmenbashi refinery. Japan and Turkmenistan have now created a joint group, which aims to designate possible cooperation in oil and gas, processing and chemical branches. Mitsubishi Heavy Industries and Mitsubishi Corporation are to study possibilities of civil-engineering design at Tedzhen for ammonia, methanol and urea. Turkmenkhimiya and Sojitz Corporation are also examining the prospects for constructing a caustic soda plant in Turkmenistan.

**UzKorGasChemical project update**

Kogas (Korea Gas Corporation) has been in efforts to accelerate the construction of the Ustyurt Gas Chemical Complex. The project faced the prospects of delays in the latter part of 2009 due to questions over potential ethane reserves for petrochemical production. The JV UzKorGasChemical is expected to start construction in 2010, which will result in 400,000 tpa of polyethylene and 100,000 tpa of polypropylene at the Gas Chemical Complex. The entire project has been allocated an estimated value of \$3.3 billion, involving the production of 3 billion cubic metres of gas per annum at Ustyurt based on the Surgil deposits. A further 1.5 billion cubic metres of gas will be supplied from other fields in Ustyurt region.

**Uzbek ammonia modernisation**

Max-Chirchik and Ferganaazot in Uzbekistan are undertaking investments into the modernisation of ammonia units, which will allow the plants to stabilize their work to reduce energy consumption, as well as build capacity for the production of ammonium nitrate and urea. The cost of reconstruction is estimated to require about \$50 million financing. The projects are being undertaken by the Fund for Reconstruction and Development of Uzbekistan, the Development Bank of China, as well as the Uzbek bank loans and own funds of the companies.

Relevant Currencies

Czech crown. Kc. \$1= 18.607. €1 = 25.9874; Hungarian Forint. Ft. \$1 = 193.375. €1 = 270.678; Polish zloty. zl. \$1=2.845. €1 =3.9717; Bulgarian leva.\$1 = 1.4015. €1= 1.9574; Romanian Lei. \$1 = 2.9282. €1= 4.0897; Croatian Kuna HRK. \$1 = 5.2431. €1= 7.3238; Ukrainian hryvnia. \$1 = 8.038. €1 = 11.2263; Rus rouble. \$1 = 30.115. €1= 42.0663

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