

Petrochemicals Update: March 2021

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Petrochemical products are used in day to day activities and they play a crucial role in development and smooth functioning of various industries and human life. The disruptions caused in various industrial and normal activities due to the outbreak of Covid-19 pandemic thus had an impact on the petrochemicals industry as well. To understand the impact better, we have discussed the production and price trend of different petrochemicals here and the following petro-products are covered in the report.

I. Polymers

- Major feedstocks for polymers
 - Propylene
 - Ethylene

II. Synthetic fibres/yarn

- Major feedstocks for synthetic fibres/yarn
 - Purified Terephthalic Acid (PTA)
 - Mono Ethylene Glycol (MEG)

The major petrochemicals in India are broadly classified in three different segments as mentioned in Table 1 below. The table also details the share of the above mentioned petrochemical products in their respective segments and total petrochemical production during FY20.

Table 1: Share of major petro-products during the period FY20

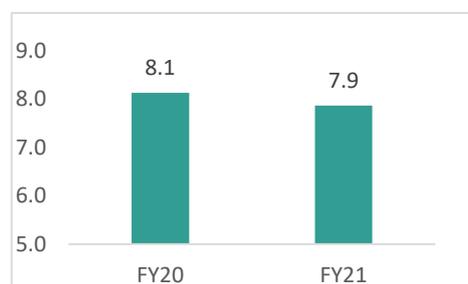
Major segments	(in mn tn)	% share in respective segments' production	% share in total petrochemicals production
Basic major petrochemicals: 19 mn tn	a. Polymers 12.4	65.1%	28.5%
	b. Synthetic fibres/yarn 3.9	20.4%	8.9%
Intermediates: 22.1 mn tn	a. Ethylene 6.5	29.2%	14.9%
	b. Propylene 4.9	22.1%	11.2%
	c. PTA 3.3	14.8%	7.5%
	d. MEG 2.0	9.1%	4.6%
Other petro-based chemicals: 2.4 mn tn	-	-	5.4%
Total major petrochemicals: 43.5 mn tn	-	-	-

Source: Department of Chemicals & Petrochemicals

Note: mn is million tonnes

Polymers

Chart 1: Polymers production during April-January (in million tonnes)



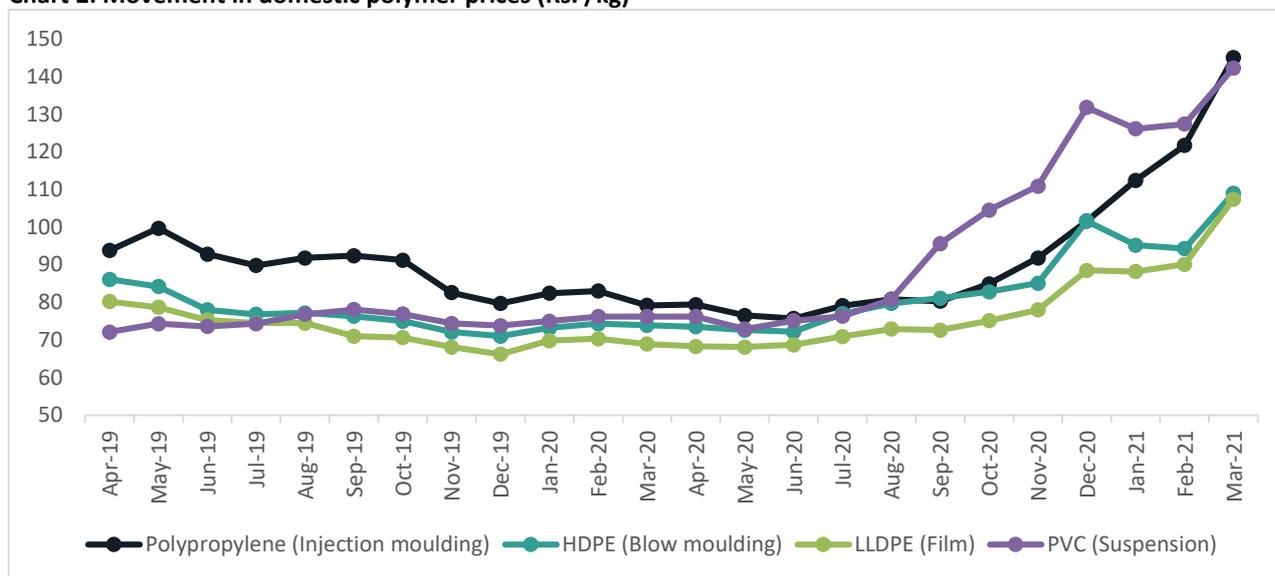
Source: CMIE

During the period April 2020 – January 2021, cumulative polymer production in India declined by 3.3% to 7.9 million tonnes. The output which had decreased by a sharp 43.5% y-o-y in April 2020 and a slower 6.3% in May 2020 due to Covid-19 induced lockdown witnessed some recovery as the production increased in some of the following months and the fall in output narrowed to the range of 1.3%-4.6%. Unlocking of economy and easing of lockdown restrictions are believed to have supported the improvement in polymers output during June 2020-January 2021. It is to be noted that polymers here include polyethylene, PVC, polypropylene, expandable polystyrene, EPS (thermocool).

Movement in domestic polymer prices

The domestic polymer prices had witnessed some downtrend in prices during the latter part of FY20 compared to the prices in the initial months of FY20. The prices of Poly Vinyl Chloride (PVC) however were not much volatile during FY20 compared to the other 3 varieties. Following this, the polymer prices were affected to some extent during April-May 2020 due to the outbreak of Covid-19 pandemic. The prices of the 4 varieties nevertheless increased for majority of the months during June 2020 - March 2021 as can be seen in the Chart 2 below. As a result, the domestic prices of polypropylene, High Density Polyethylene (HDPE) and Linear Low Density Polyethylene (LLDPE) increased by 6.7% to Rs.94 per kg, 11.5% to Rs.85 per kg and 9.3% to Rs.79 per kg, respectively, in FY21 on y-o-y basis and the price of PVC surged by 35.3% to Rs.142 per kg during the year.

Chart 2: Movement in domestic polymer prices (Rs. /kg)

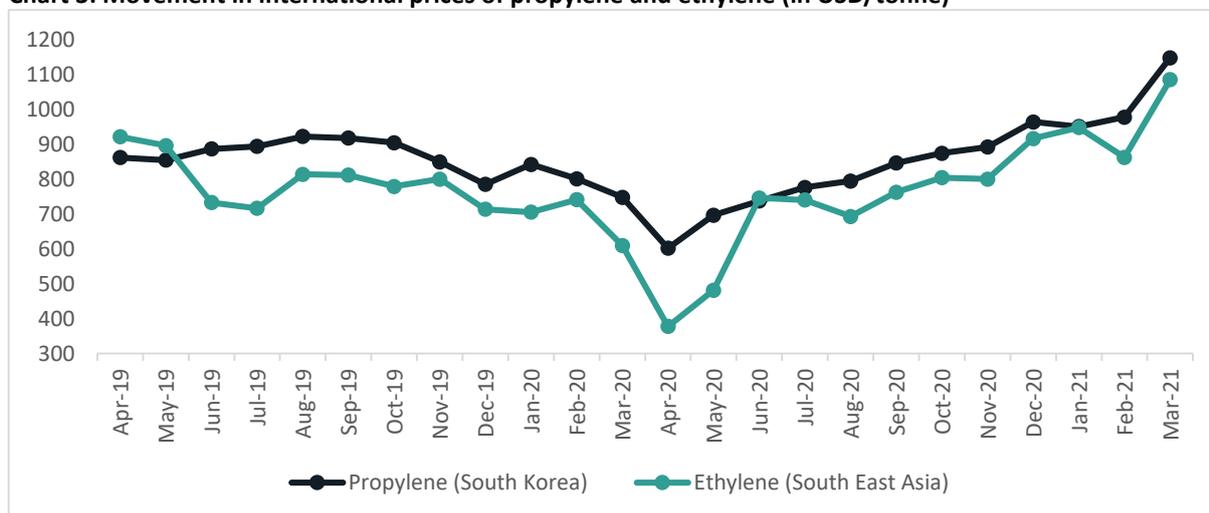


Source: CMIE

Slow-down in supply of polymers in the domestic market due to lower production and imports amid higher exports are believed to have led the price rise. While polymer imports declined by 13.4% in April 2020 – January 2021, exports of polymers increased by 14.9% during the period. In FY19, polymer imports accounted for about 45% of total polymer consumption in India which indicates India's dependence on polymer imports while exports accounted around 19% of the total domestic polymer production during the year.

Apart from these factors, recovery in polymer feedstock prices (propylene and ethylene) have also contributed to the growth in polymer prices. While the prices of propylene improved sequentially in each of the months May 2020 onwards till March 2021, the prices of ethylene recovered in most of the months during this period (refer Chart 3 below). The growth in prices was on account of tight supplies. On a y-o-y basis, the prices of propylene and ethylene remained almost stable as they declined by a marginal 0.1%-0.3% and averaged at USD 854 per tonne and USD 767 per tonne, respectively, during FY21. Polymers however had reported strong growth in prices in FY21 primarily on account of lower supplies.

Chart 3: Movement in international prices of propylene and ethylene (in USD/tonne)

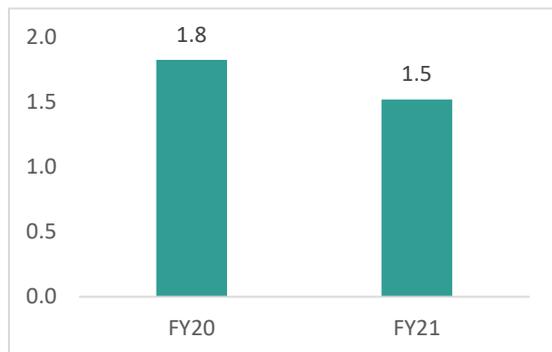


Source: CMIE

Man-made fibres (MMF)/Synthetic fibres/yarn

During April 2020 –January 2021, output of MMF declined by 16.7% y-o-y to 1.5 million tonnes on a cumulative basis. The production had fallen sharply in the initial 3 months of FY21 due to Covid-19 induced lockdown restrictions.

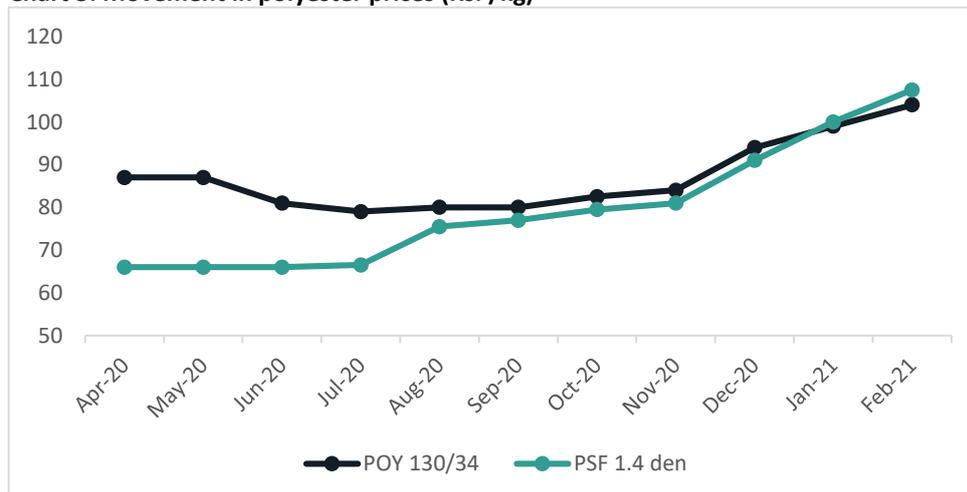
Chart 4: MMF production during April-January (in million tonnes)



In the following months, the decrease in output reduced and in fact the production increased by 10.3% in September 2020 backed by easing of lockdown restrictions. In the months of October 2020 – January 2021, the output however declined but the fall in production restricted to the range of 3%-6% during these months. The improvement in MMF output in the past few months is on account of unlocking of economy which is believed to have supported the demand for MMF.

Source: CMIE It is to be noted that MMF here includes texturized man-made filament yarn which has a highest share of 70.5% during April 2020 – January 2021 followed by polyester spun yarn (18.1%), rayon/viscose blended spun yarn (9.8%) and acrylic yarn (1.6%). Man-made fibre production primarily includes polyester and viscose. Polyester accounts for a majority of the total man-made fibre output close to 80% and viscose holds a share of about 15% in the total production.

Chart 5: Movement in polyester prices (Rs. /kg)



Source: Textile Excellence

The prices of Polyester Staple Fibre (PSF) 1.4 den variety remained range bound (Rs.66-Rs.67 per kg) during April-July 2020 while that of POY 130/34 (POY (Partially Oriented Yarn) is a type of Polyester Filament Yarn (PFY) and is made from polyester fibres) declined from Rs.87 per kg in April 2020 to Rs.79 per kg in July 2020 due to Covid-19 disruptions. After this, the prices of both the varieties increased sequentially in each of the months during August 2020 to February 2021 except for POY 130/34 for which the prices remained unchanged in September 2020. The price rise on m-o-m basis was highest in December 2020 as the prices of both the varieties increased by about 12%.

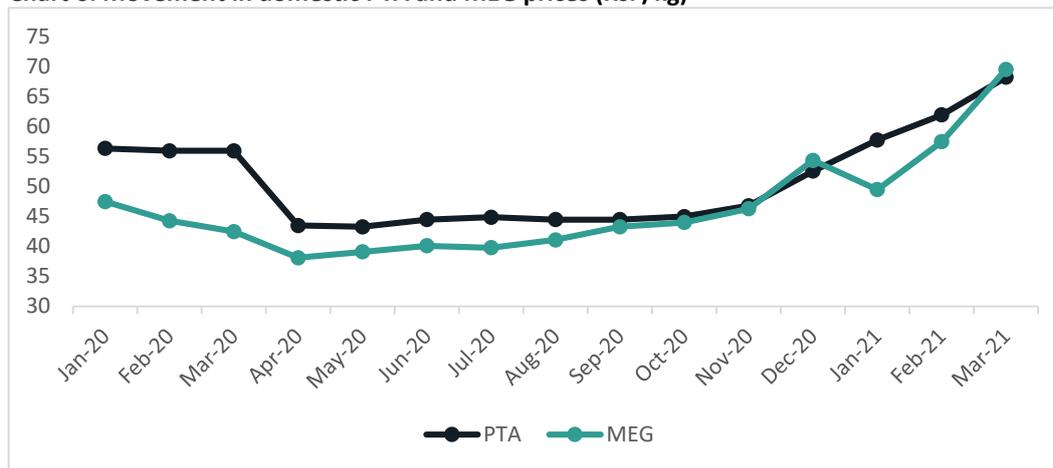
The growth in prices can be attributed to better demand for MMF backed by unlocking of domestic and international markets. Also, the firmness and an increase in raw material prices (PTA and MEG) is believed to have led the rise in prices of both the varieties during August-February 2021.

The primary or key raw materials used to make polyester are PTA and MEG. The prices of PTA and MEG had declined in the range of 20%-23% in April 2020 from their levels in January 2020 due to Covid-19 disruptions (refer Chart 6 below). Later on, while the prices of PTA remained stable at Rs.45 per kg during June-October 2020, the prices of MEG either remained stable or increased by Rs.1-2 per kg during this period. The prices of both the raw materials grew in November 2020 and increased by 12%-18% in December 2020 backed by improved downstream demand amid lower inventory in China. India is net importer of PTA and MEG and thus the demand-supply situation in the international market have an influence on the domestic prices.

During January-March 2021, the prices of both the varieties increased sequentially in each of the months except for the prices of MEG which declined by 9% to Rs.50 per kg on m-o-m basis in January 2021. In March 2021, the prices of both

the varieties touched their highest levels for the considered period and the price of PTA and MEG averaged at Rs.68 per kg and Rs.70 per kg, respectively, during the month.

Chart 6: Movement in domestic PTA and MEG prices (Rs. /kg)



Source: CMIE

The petrochemical prices have been witnessing improvement backed by recovery in demand amid disturbed supplies of petrochemicals due to the outbreak of Covid-19 pandemic. The improvement in crude oil prices have also influenced the upward momentum in petrochemical prices as petro-products are derivatives of crude oil. The Brent crude oil prices have spiked from the low level of USD 18.5 per barrel in April 2020 to USD 66 per barrel in March 2021. Apart from this, logistics disturbances (primarily shipping) in the international market and the recent winter storm in the USA in February 2021 have also contributed to the rise in prices.

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