

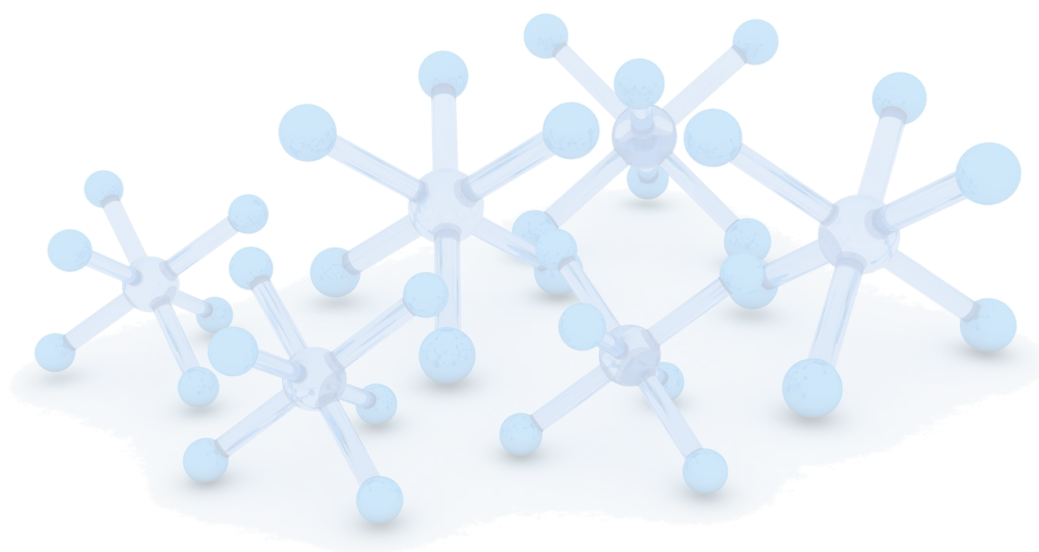


## **Building Resilience in MSMEs to Strengthen the Indian Chemical Industry**

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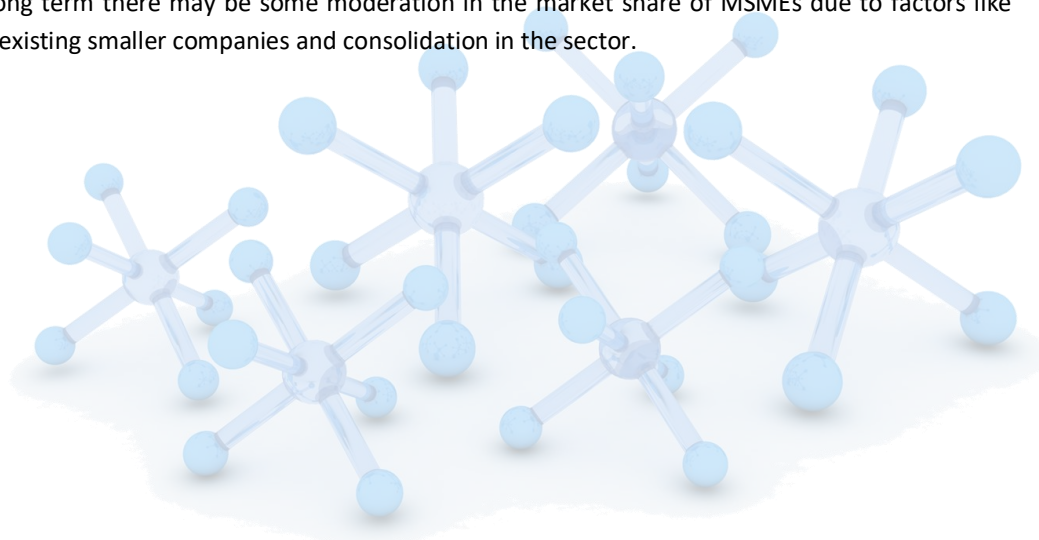
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## Executive Summary

- Indian chemical and plastic industry are major contributor to GDP and employ close to 6 million people. While the domestic chemical sector is estimated to be ~ USD 178 billion, the plastic sector is ~Rs. 2.25 crore. While there are large players in the chemical sector, the MSME segment is estimated to account for ~25-30% of the sector and plays a crucial role in the domestic chemical manufacturing and employment generation. Further, the MSME sector accounts for 85-90% of the polymer processing segment of plastic industry. While the MSMEs are concentrated towards segments where scale is not critical and R&D requirement is low, they also have presence in the niche speciality chemical segments.
- The impact of Covid-19 pandemic on the chemical industry was limited. While there was sharp contraction in production during Q1 FY2021 when the intensive containment measures were adopted, there was recovery in subsequent quarters with sharp recovery in H2 FY2021.
- The chemical and plastic industry are poised for multi-year growth over the next few years driven by expected increase in domestic demand as well as opportunities in the export segment. The domestic demand growth for chemicals will be driven by increasing per capita income, changes in consumption trends and adoption of global practices by end user industries. On the other hand, the export sector growth will be supported by industry's strengths like low cost of production, availability of skilled labour, relatively better intellectual protection rights regime and track record of Indian companies in the CRAMS segments for agrochemicals and pharma APIs; and opportunities arising from supply chain diversification by global chemical companies. The plastic sector is also expected to witness growth due to similar factors.
- The MSMEs will be playing a crucial role in leveraging the growth potential for chemical and plastic sector, however there are several challenges faced by the chemical and plastic industry in general and MSME sector, which needs to be addressed. Government of India has taken several measures which will provide support to the domestic chemical sector and MSMEs. Further, the larger companies in domestic sector should also provide support to MSMEs to better integrate them in the supply value chain. The success of these measures will be crucial for building resilience in the MSMEs to strengthen the Indian Chemical Industry.
- While MSMEs will play a crucial role in the growth trajectory of the chemical and plastic sector, in the medium to long term there may be some moderation in the market share of MSMEs due to factors like scaling up of existing smaller companies and consolidation in the sector.



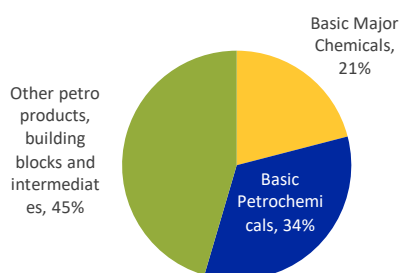
## Overview of domestic chemical sector

The domestic chemical industry can be broadly classified into - basic chemicals, basic petrochemicals and specialty chemicals. Basic chemicals segments such as organic and inorganic chemicals, bulk petrochemicals, other chemical intermediates, plastic resins, synthetic rubber, man-made fibres, dyes and pigments and printing inks.

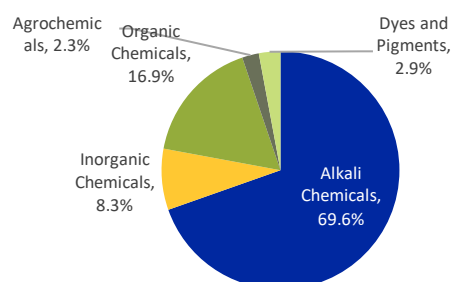
The building block of petrochemicals can be further classified into Olefins, which contains one or more pairs of carbon atoms linked by a double bond, and Aromatics, which are hydrocarbon with ring like molecular structure. The key olefins are ethylene, propylene and butadiene. These are used in industrial production of other chemicals, plastics and plastic products and industrial production of synthetic rubber. The key aromatics are benzene, toluene and xylene. There are used in the manufacture of synthetic detergents, plastics, synthetic fibres etc.

The Indian chemical industry is estimated to be worth ~\$ 178 billion<sup>1</sup> (including fertilisers and pharma APIs), of which bulk and petrochemicals account for ~44% and specialty chemicals account for ~21% share. Domestic production is estimated to be ~\$166 billion<sup>2</sup>, with the remaining being met by imports. Indian is net importer with exports worth \$39 billion and imports worth \$51 billion. India ranks 6th in world and 4th in Asia, in terms of chemical sales and is the third largest consumer of polymers and the fourth largest produce of agrochemicals globally. The Indian specialty chemical segment is estimated to be around \$32 billion<sup>3</sup>.

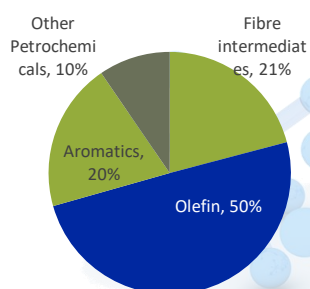
**Exhibit 1: Share of major chemical segments (MT<sup>4</sup>)**



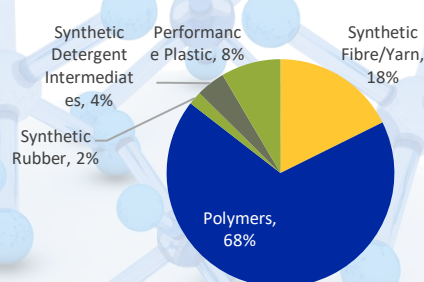
**Exhibit 2: Share of key basic major chemicals (MT<sup>4</sup>)**



**Exhibit 3: Share of key intermediates and other petro products (MT<sup>4</sup>)**



**Exhibit 4: Share of key basic petrochemicals (MT<sup>4</sup>)**



Source: DCPC, ICRA Research

<sup>1</sup> FICCI and DCPC

<sup>2</sup> PWC – FICCI Report – India: A global manufacturing hub for chemicals and petrochemicals

<sup>3</sup> FICCI – Indian Specialty Chemical Industry - Biggest Beneficiary of The Global Paradigm Shift

<sup>4</sup> Domestic Production

The chemical industry is an important contributor to the Indian economy, with around 80,000 products, which find use in various industries and employs around an estimated 2 million people. The segment is a major component of the domestic manufacturing sector and has weightage of 7.87% in IIP, contributing to around 1.4% of the national GVA, ~8.8% of manufacturing GVA and accounts for 11.3% of India's exports<sup>5</sup>.

The domestic industry comprises large and medium-sized domestic players, global MNCs and a large number of MSME units including the informal sector, with substantial overlapping between the two. The estimated share of the unorganized sector is relatively high in certain chemical segments like dyes and pigments, flavours and fragrances, agrochemicals and certain niche specialty chemicals. Further the MSME/informal players are having presence in other chemical segments also, however the share of the MSME will be lower in segments where there are high R&D/advanced technology requirements or wherever there is a requirement of scale as in petrochemicals etc.

As per the revised classification of MSME companies, while more no of companies in segments like specialty chemicals may be classified as MSME due to increase in investment threshold, companies in segments with low investments (due to low value-added nature of the products but with high turnover due to higher volumes) may move out of the ambit of MSME segment. However, certain niche specialty chemical companies may now fall under the MSME category, due to increase in threshold for investments of up to Rs. 50.0 crore.

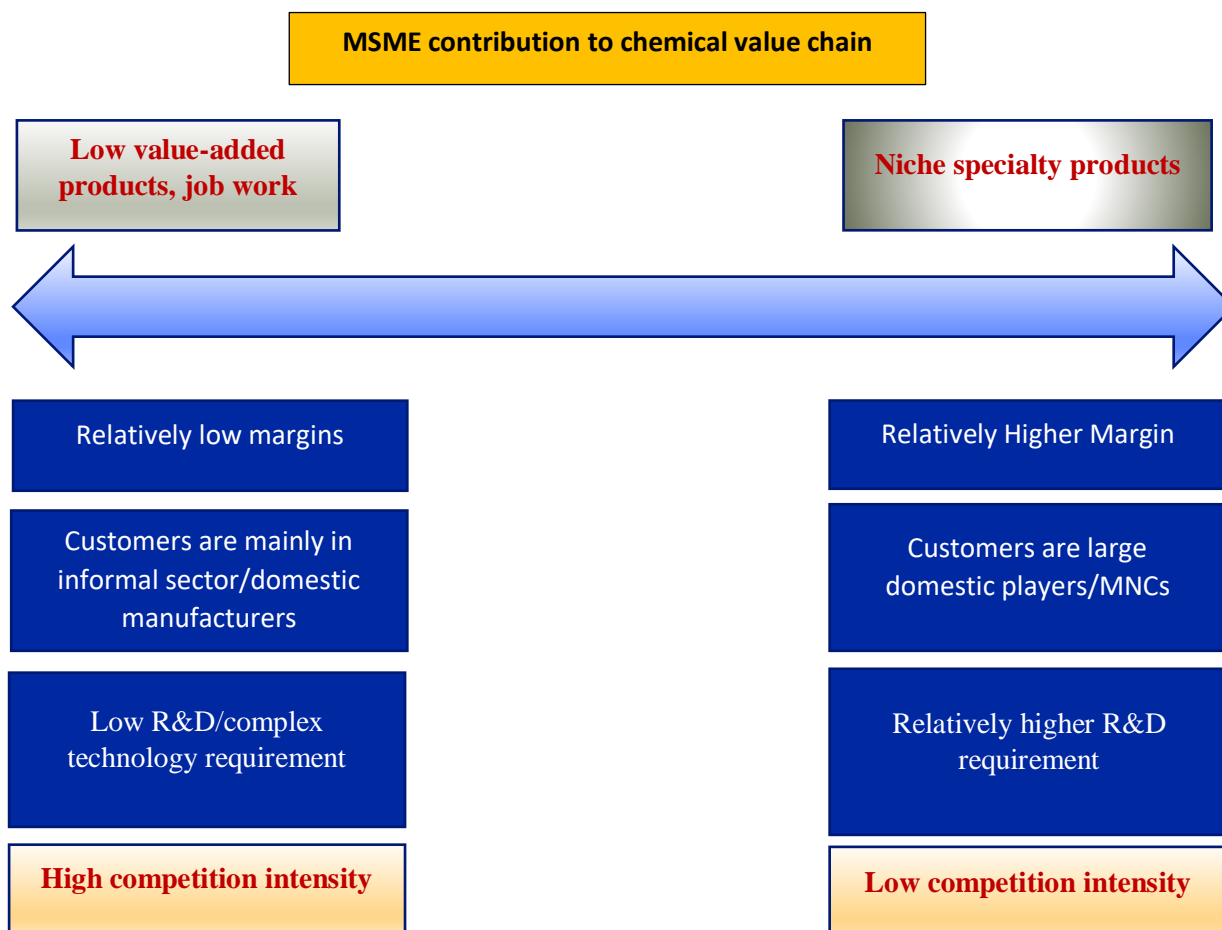
In July 2020, a composite criteria for classification of MSME companies was notified by Ministry of MSME, compared to earlier investment based criteria with lower threshold

- a) Micro - Investment in plant and machinery or equipment:  
Not more than Rs.1 crore and annual turnover, not more than Rs. 5 crore.
- b) Small - Investment in plant and machinery or equipment:  
Not more than Rs.10 crore and annual turnover, not more than Rs. 50 crore.
- c) Medium - Investment in plant and machinery or equipment:  
Not more than Rs.50 crore and annual turnover, not more than Rs. 250 crore.

While, it is difficult to quantify the informal sector share in different segments, as per industry sources, the informal sector can be as high as 45-50% in agrochemicals, ~60-65% in dyes and pigments and in case of other specialty chemicals can range between 50-75%. However, based on the share of MSME sector in overall manufacturing segment in India, other industry sources and ICRA estimates, the share of MSME companies in overall chemical sector is estimated to be ~25-30%. The MSME sector plays a critical role in Chemical manufacturing industry value chain, which includes on one end production of low value-added products, doing job work for larger domestic players, undertaking processes like purification, blending etc. or on the other end it could be catering to niche segments like specialty ingredients, where the market size is small but needs high quality products and hence there is limited competition.

<sup>5</sup> DCPC and other industry sources





The chemical industry is geographically concentrated in the states of Gujarat and Maharashtra, with the former accounting for ~33% of domestic production, while the latter has ~16% share. Other states which also have chemical units include West Bengal (~5%), UP (~5%), Uttarakhand (~4%) and AP (~4%). The remaining ~33% production is spread across various states<sup>6</sup>. The high concentration in Gujarat and Maharashtra is due to supporting factors like better port connectivity, skilled manpower, business friendly policies and infrastructure.

### Indian Plastic Sector

Indian plastic value chain comprises the polymer manufacturers (who supply virgin polymers), equipment manufacturers which supply the plastic processing machinery, plastic processors who process the polymers into processed plastics and end user segments. There are also recycling players who are part of value chain. **Among, the above while the polymer manufacturers are large petrochemical entities, the polymer processing segment comprise of ~30000 processing units, of which around 85-90% are in the MSME segment.** The Indian plastic sector is estimated to employ around 4 million people. The plastic industry market size is estimated to be ~Rs. 2.25 lakh crore<sup>7</sup>.

<sup>6</sup> Industry sources and ICRA estimates

<sup>7</sup> All India Plastic Manufacturers Association (AIPMA)

## Key industry trends and Covid-19 impact

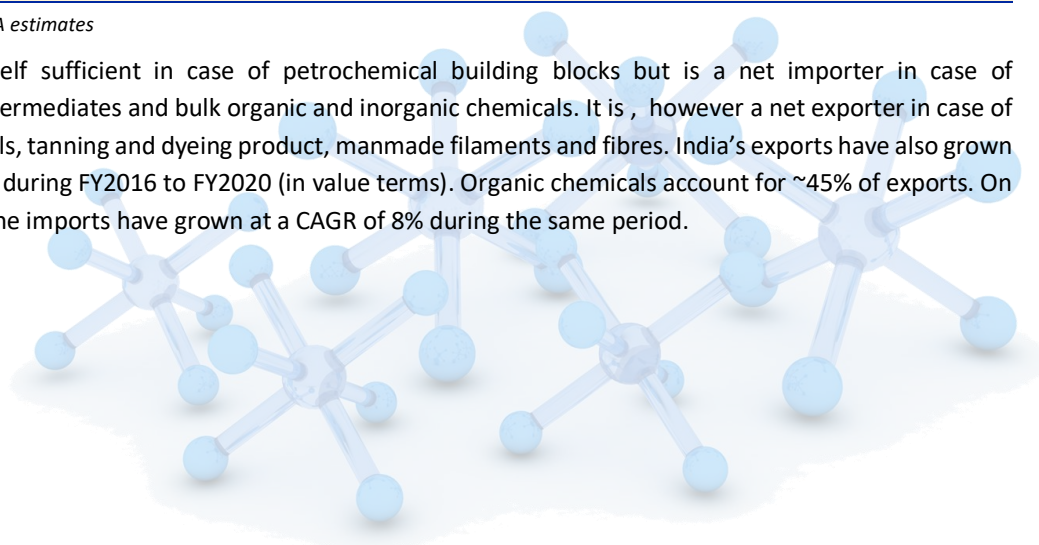
The domestic chemical production (in MT) has grown at a CAGR of ~5% during FY2016 to FY2020, driven by growing demand on the back of growth in Indian economy, changing consumer preferences with increase in disposable income and adoption of global practices by end user industries. The key subsectors like basic chemicals witnessed a ~4.8% CAGR growth during the same period, while basic petrochemicals witnessed growth of 6.3%. The intermediates and other petrochemical grew at a CAGR of 4.1% during the same period. In several segments, the demand had outpaced the growth in domestic production, which was met by imports. The specialty segment is estimated to have grown at a CAGR of 11.7% during FY2016 to FY2020.

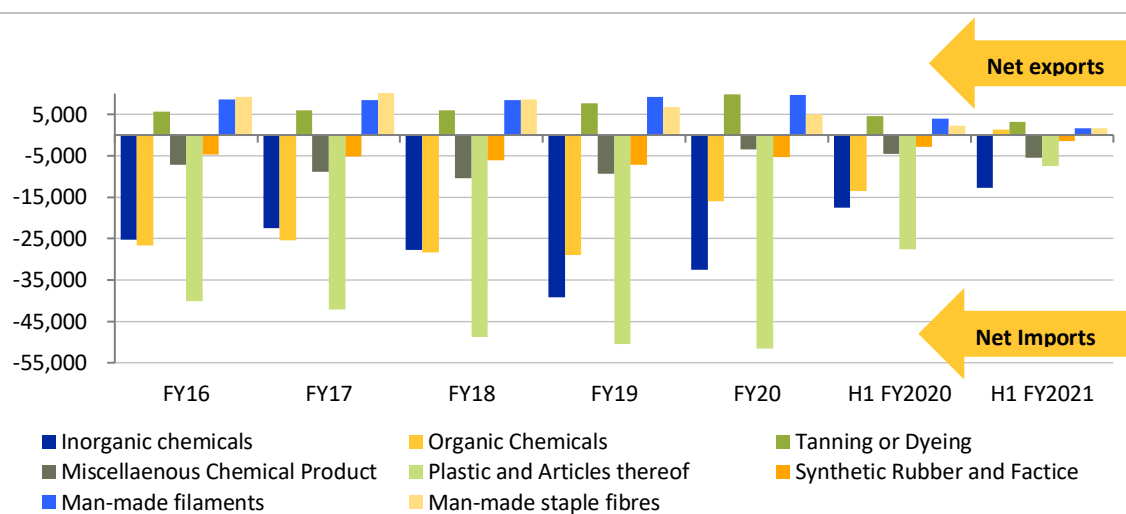
**Exhibit 5: Production trend for key chemical segments (MT)**

	FY16	FY17	FY18	FY19	FY20	FY21	4 year CAGR (FY20)	YoY % change FY21
<b>Alkali Chemicals</b>	6,801.9	7,008.6	7,631.3	8,042.7	8,456.8	7,776.5	5.6%	-8.0%
<b>Inorganic Chemicals</b>	1,001.5	1,052.9	1,058.5	1,063.8	1,063.4	928.8	1.5%	-12.7%
<b>Organic Chemicals</b>	1,588.8	1,638.4	1,798.9	1,884.4	1,846.6	1,885.9	3.8%	2.1%
<b>Agrochemicals</b>	187.5	213.7	212.7	216.7	192.2	254.7	0.6%	32.5%
<b>Dyes and Pigments</b>	304.3	320.3	367.3	381.5	384.2	327.0	6.0%	-14.9%
<b>Synthetic Fibre/Yarn</b>	3,558.4	3,599.4	3,625.2	3,601.5	3,892.8	3,163.0	2.3%	-18.7%
<b>Polymers</b>	8,838.8	9,163.1	9,275.9	10,040.5	12,403.7	12,143.6	8.8%	-2.1%
<b>Synthetic Rubber</b>	241.5	284.8	307.7	350.9	358.1	341.5	10.3%	-4.6%
<b>Synthetic Detergent Intermediates</b>	565.5	663.7	742.8	687.2	714.7	736.4	6.0%	3.0%
<b>Performance Plastic</b>	1,700.3	1,799.3	1,718.8	1,588.8	1,671.6	1,519.6	-0.4%	-9.1%
<b>Fibre intermediates</b>	4,679.0	4,588.0	4,711.1	4,657.3	5,358.9	5,059.1	3.5%	-5.6%
<b>Olefin</b>	8,527.5	8,794.3	9,013.0	8,857.2	11,835.4	12,039.4	8.5%	1.7%
<b>Aromatics</b>	5,483.6	5,361.0	5,338.6	5,542.9	4,924.7	4,804.8	-2.7%	-2.4%
<b>Others</b>	2,159.2	2,173.5	2,080.1	2,192.5	2,364.2	2,314.2	2.3%	-2.1%
<b>Total</b>	<b>45,637.9</b>	<b>46,661.0</b>	<b>47,881.6</b>	<b>49,107.7</b>	<b>55,467.3</b>	<b>53,294.5</b>	<b>5.0%</b>	<b>-3.9%</b>

Source: DCPC and ICRA estimates

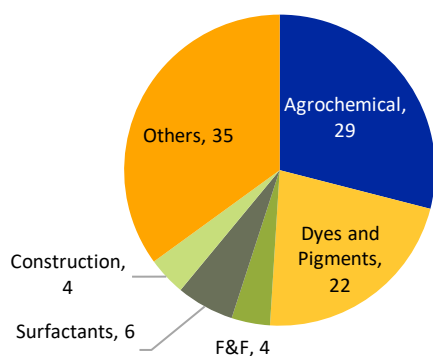
India is largely self sufficient in case of petrochemical building blocks but is a net importer in case of petrochemical intermediates and bulk organic and inorganic chemicals. It is , however a net exporter in case of specialty chemicals, tanning and dyeing product, manmade filaments and fibres. India's exports have also grown at a CAGR of 11% during FY2016 to FY2020 (in value terms). Organic chemicals account for ~45% of exports. On the other hand, the imports have grown at a CAGR of 8% during the same period.



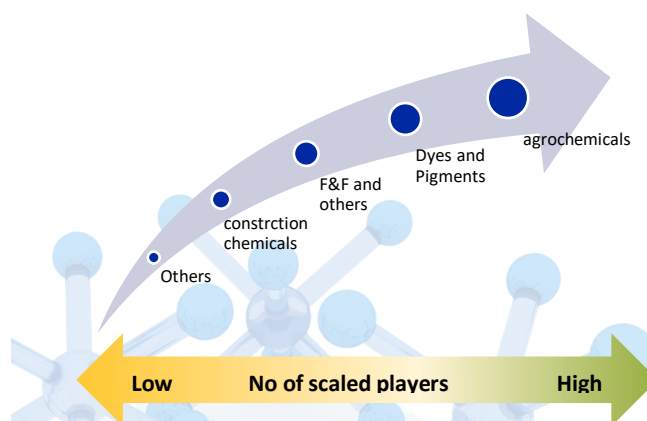
**Exhibit 6: Import and export trend for key chemical segments (in Rs. Crore)**


Source: DCPC, ICRA Research

The domestic specialty chemical segment is estimated to be around \$ 32 billion and is characterized by low volumes but high value addition and high margin. Some of the key segments include agrochemicals, dyes and pigments, flavours and fragrances, surfactants, construction and others like water chemicals, polymer additives, fluorochemicals etc. Within the specialty chemical subsegment, the level of formalisation is dependent on the R&D requirement, integration with global supply chain, specialised nature of products etc. Among the key sub segments, agrochemicals has the most scaled up players followed by dyes and pigments.

**Exhibit 7: Break up of Indian Specialty Chemical Sector (%)**


Source: ICRA Research, FICCI

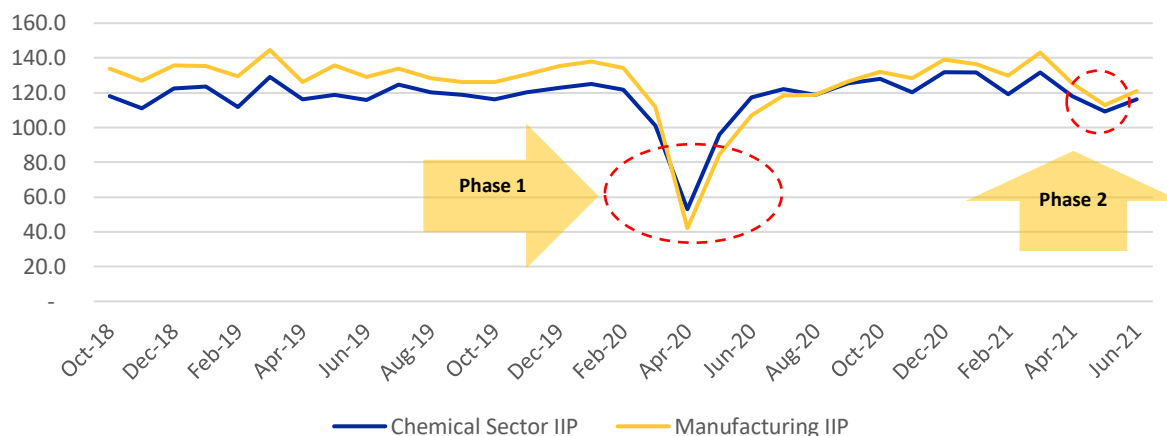
**Exhibit 8: Agrochemicals has large number of scaled up players**


During FY2021, however due to the Covid-19 pandemic and related lockdown measures, the demand and production witnessed disruption. The chemical IIP, which has been largely following the overall manufacturing IIP trend for India, witnessed sharp contraction in the month of April 2020, when there was maximum impact of the containment measures, however in the subsequent months, there has been consistent recovery and by month of September 2020, the production level had reached pre Covid-19 levels. In terms of key segments, while basic petrochemicals, intermediates, other petrochemicals, basic chemicals (alkali, inorganic chemicals) and dyes and pigments witnessed contraction, certain segments like agrochemicals and synthetic detergent intermediates witnessed growth driven by healthy demand from rural regions and demand for cleaning products. The demand recovery continued with some monthly volatility and witnessed strong performance in Q4 FY2021. However, with intensified second wave since April 2021 and limited lockdowns imposed, the IIP



again witnessed some contraction, but the rate of contraction was low compared to the first wave due to less intensive lockdowns and the industry being better prepared to operate with restrictions.

**Exhibit 9: Chemical Sector IIP and manufacturing IIP trend**



Source: DCPC, RBI, ICRA Research

The adverse impact of the Covid-19 pandemic on the financial performance of the chemical sector companies was limited since the demand contraction was mainly in Q1 FY2021 and by Q2 FY2022, the demand had started recovering. Further, the sector also benefited from lower raw material costs during 9m FY2021, due to lower crude prices, which partly mitigated the impact of the lower demand in H1 FY2021.

Nonetheless, the industry witnessed some pressure during H1 FY2021, with the decline in revenue and profitability, the pressure on collections impacted the working capital cycle. The adverse impact was more acute on small and medium sized companies. However, the industry recovered in H2 FY2021 and the specialty chemical segment witnessed growth during the period driven by strong domestic demand revival and demand from the export market. The industry also benefited from some of the global trends (discussed in detail in growth drivers) with favourably impacted the export demand, while specific sub segments like agro-chemicals, surfactants, Iso Propyl alcohol etc witnessed healthy demand during the pandemic in the domestic market.

The impact on Covid-19 was also mitigated by support measures provided by Government (details in subsequent section)

**Exhibit 10: Comparison of Covid-19 first wave and second wave**

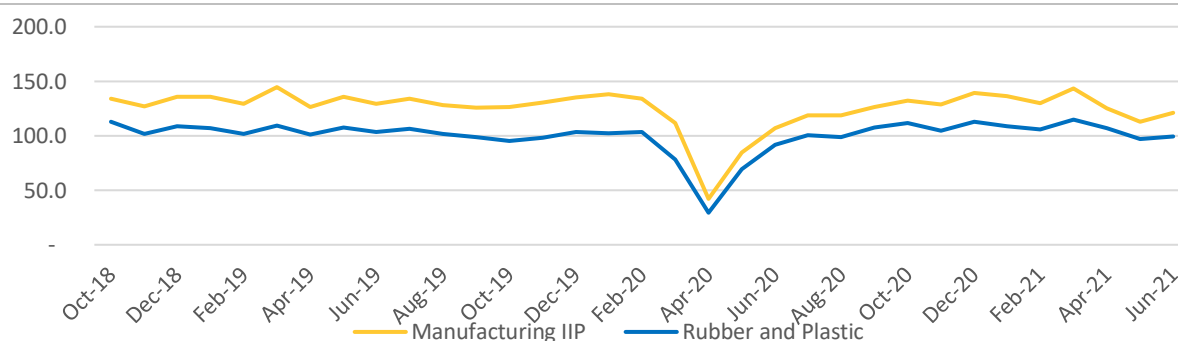
Segments	Wave 1	Wave 2
Labour	<ul style="list-style-type: none"> <li>The production was impacted by labour migration during Q1 FY2021 and part of Q2 FY2021</li> </ul>	<ul style="list-style-type: none"> <li>Due to better preparation like use of local labour and providing accommodation etc., mitigated the impact. The migration was also lower compared to wave 1</li> </ul>
Logistics	<ul style="list-style-type: none"> <li>Due to stringent containment measures, production and supply was also impacted by logistics constraints</li> </ul>	<ul style="list-style-type: none"> <li>The impact on logistics was less severe compared to wave 1</li> </ul>
Demand	<ul style="list-style-type: none"> <li>Due to both domestic demand and exports being impacted during the peak of wave 1, the demand from customers was impacted</li> </ul>	<ul style="list-style-type: none"> <li>The demand witnessed some moderation but was less severe since containment measures was less stringent and export demand remained better</li> </ul>

Segments	Wave 1	Wave 2
Working Capital Cycle	<ul style="list-style-type: none"> <li>The collection period was stretched during the wave 1 due impact of pandemic across supply chain</li> </ul>	<ul style="list-style-type: none"> <li>The impact was relatively less severe, although some stretch in collection period was witnessed</li> </ul>
Liquidity	<ul style="list-style-type: none"> <li>Due to stretched collection period and impact on operations, the liquidity witnessed some pressure during H1 FY2021. However, relief measures from RBI mitigated the impact.</li> </ul>	<ul style="list-style-type: none"> <li>The impact on liquidity was less severe due to the trends witnessed in aforementioned factors.</li> </ul>

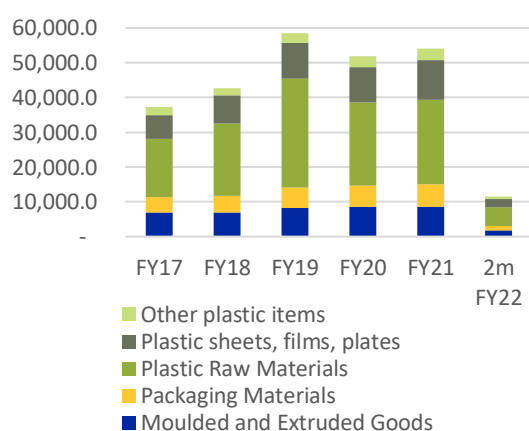
## Impact of Covid-19 on plastic sector

While plastic sector was also adversely impacted during the first wave due to the impact of lockdown in Q1 FY2021, there has been recovery in demand in H2 FY2021 with easing of containment measures and growth in demand. During the second wave, the impact has been less adverse, although some impact has been there on processors on account of localised restriction and some moderation in demand from specific end user segment. During FY2021, in volume terms, the exports of plastic raw materials witnessed ~10% growth and ~11% growth in plastic sheet, film and other segments. The exports of key plastic segments witnessed ~4% growth in FY2021, despite Covid-19 and was estimated at ~\$ 7.2 billion.

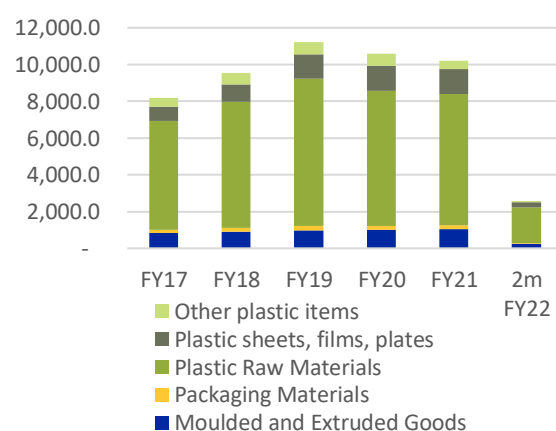
**Exhibit 11: Rubber and Plastic Sector IIP and manufacturing IIP trend**



**Exhibit 12: Plastic export trend (Rs. in Cr)**



**Exhibit 13: Plastic import trend (Rs. in Cr)**



Source: DGCIS, RBI, ICRA Research

## The characteristics and performance trend of key chemical segments

### Basic Chemicals

The Covid- 19 pandemic had impacted demand for basic chemicals though the severity varied across the industry. Demand from segments like food packaging, pharma, sanitary and medical applications, witnessed a surge, primarily due to stockpiling, an increase in delivery services, and the high healthcare-focused activities. Other major consuming sectors, such as automotive and construction were severely impacted, especially during H1 FY2021. Most basic chemicals have a diverse range of end-user industries thereby softening the impact of severe slowdown in anyone industry on consumption. The basic chemicals segment can be further divided in to various subsections and ICRA's outlook on the individual subsegment is given below.

**Exhibit 14: Key basic chemical segments**

Segments	Key end user segment	Covid-19 impact and outlook
Caustic Soda	<ul style="list-style-type: none"> <li>Paper, alumina, soaps, detergents, chemicals, water treatment, mining, glass</li> </ul>	<ul style="list-style-type: none"> <li>Performance in FY21 remained weak due to lower realisation and impact on volumes</li> <li>FY22 expected to witness growth driven by improvement in realisation and expected increase in production levels</li> <li>While the second wave of Covid-19 has led to some weakening of demand, with easing of containment measures, demand is expected to improve.</li> </ul>
Soda Ash	<ul style="list-style-type: none"> <li>Construction, automobile, FMCG</li> </ul>	<ul style="list-style-type: none"> <li>Long term prospects remain intact with no major capacity additions in the near term</li> <li>Demand had witnessed healthy recovery in the aftermath of Covid-19, supported by detergent segment</li> </ul>
Carbon Black	Tyres, plastics, rubber goods, inks and toners	<ul style="list-style-type: none"> <li>After muted demand in H1 FY2021 due to the impact of Covid-19, especially on Tyre segment, there has been demand revival in H2 FY2021</li> <li>The demand outlook is favourable for next two years driven by expected recovery in the tyre segment</li> </ul>
Methanol	<ul style="list-style-type: none"> <li>Chemicals, construction</li> </ul>	<ul style="list-style-type: none"> <li>There some impact on demand in FY2021 , but demand is expected to improve with significant dependence on imports</li> <li>With rise in methanol prices in global market, due to supply related constrains, the domestic production is expected to remain profitable in FY2022, despite higher gas prices</li> </ul>

Segments	Key end user segment	Covid-19 impact and outlook
Acetic Acid	<ul style="list-style-type: none"> <li>Textiles, Paints, Adhesives, Pharma, Agrochemicals</li> </ul>	<ul style="list-style-type: none"> <li>The demand is expected to remain firm for the segment due to increasing use of acetic acid derivatives in applications like packaging, pharmaceuticals and textiles</li> </ul>
Phenol	<ul style="list-style-type: none"> <li>Electronics, Automobiles, Construction, Agrochemicals, Pharma</li> </ul>	<ul style="list-style-type: none"> <li>The demand outlook for phenol was muted in H1 FY21 due to impact of Covid-19, due to exposure to construction and auto sector. However, in H2 FY21 there was some demand recovery</li> <li>The demand is expected to witness improvement in FY22, with revival in economy, although the second wave of Covid-19 will have some adverse impact</li> </ul>

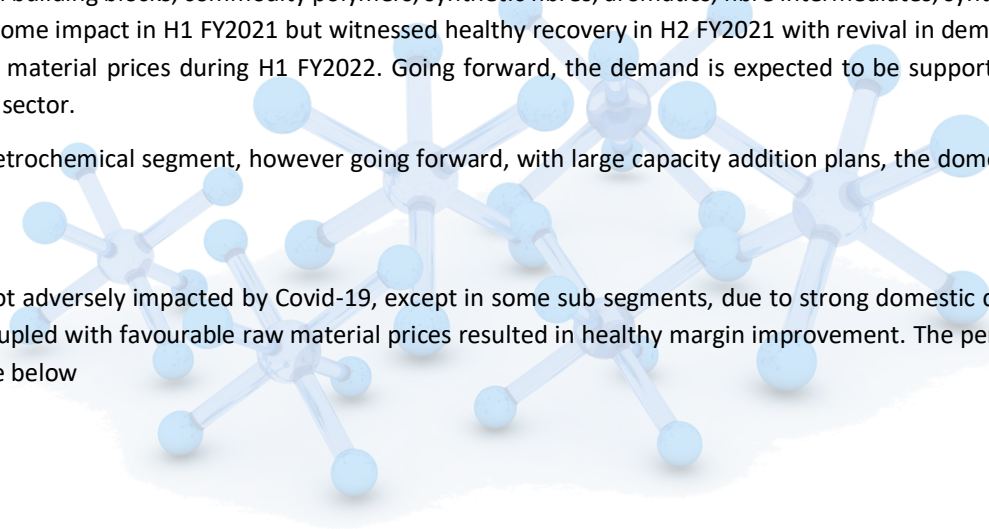
### Petro Chemicals

The petrochemicals segments are olefin building blocks, commodity polymers, synthetic fibres, aromatics, fibre intermediates, synthetic rubber, flexible packaging films, oxo alcohols. The segment also witnessed some impact in H1 FY2021 but witnessed healthy recovery in H2 FY2021 with revival in demand. The profit margin witnessed healthy improvement supported by lower raw material prices during H1 FY2022. Going forward, the demand is expected to be supported by growth in demand from end user industries, including specialty chemical sector.

India is a net importer in several key petrochemical segment, however going forward, with large capacity addition plans, the domestic capacity is expected to increase and reduce the import dependence.

### Specialty Chemicals

The specialty chemical segment was not adversely impacted by Covid-19, except in some sub segments, due to strong domestic demand revival in H2 FY2021 and healthy demand from export market, which coupled with favourable raw material prices resulted in healthy margin improvement. The performance and trends of some of the key sub segments are discussed in the table below



**Exhibit 15: Key specialty chemical segments**

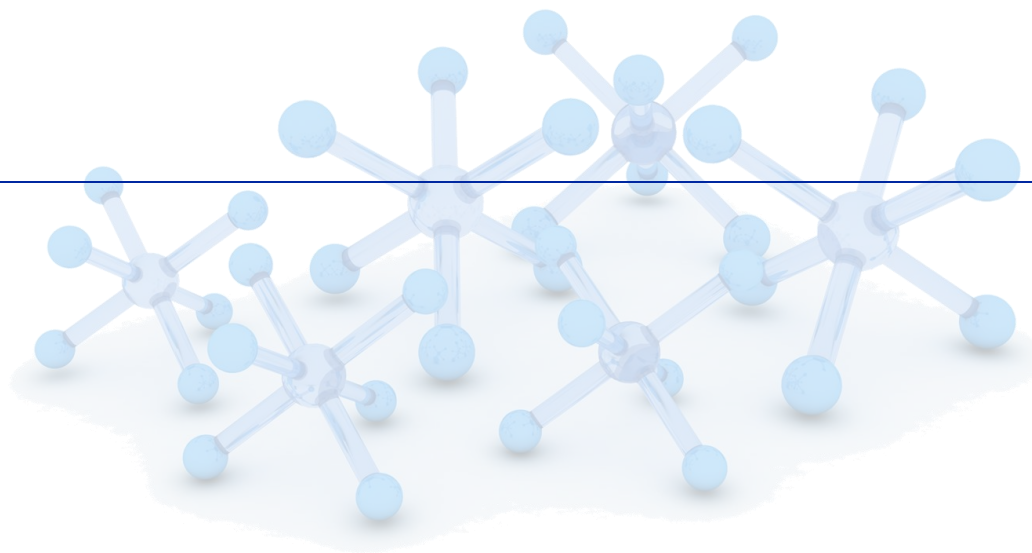
Segments	Highlights <sup>8</sup>	Key growth drivers	Key Challenges	Covid-19 impact and outlook
<b>Agrochemicals</b>	<ul style="list-style-type: none"> <li>India is 4<sup>th</sup> largest producer with estimated size of \$5.8 billion (~\$3.3 billion exports)</li> <li>Has largest share of scaled up players among specialty chemical segment</li> <li>Informal sector is estimated to be 40-45%</li> </ul>	<ul style="list-style-type: none"> <li>Low crop yield and pest infestations</li> <li>Low agrochemical penetration (0.6 kg/hectare as against 2.6 kg/hectare global average)</li> <li>Rising farmer awareness</li> <li>Molecules coming off patent</li> <li>Low cost technical manpower</li> <li>Ability to develop strong product pipeline</li> </ul>	<ul style="list-style-type: none"> <li>Agro-climatic risks</li> <li>Development of genetically modified crops</li> <li>Regulatory risks</li> <li>Forex risks and raw material dependence on imports</li> <li>Spurious products</li> </ul>	<ul style="list-style-type: none"> <li>Performance remained healthy in FY2021, aided by strong domestic as well as export demand</li> <li>Outlook stable for the segment driven by robust domestic as well as export demand</li> <li>The issue of ban on 27 pesticides in India for domestic use remains work in progress</li> </ul>
<b>Dyes and Pigments</b>	<ul style="list-style-type: none"> <li>Domestic market estimated to be ~\$ 7 billion</li> <li>Informal sector is estimated to be around 60-65%</li> <li>Maharashtra and Gujarat account for around 85-90% of the total dyestuff production</li> <li>~70% demand is from textile sector</li> </ul>	<ul style="list-style-type: none"> <li>Domestic demand to grow in-line with economic growth</li> <li>Diversification in global supply chain from China</li> <li>Opportunity to move up the value chain for domestic organised players</li> </ul>	<ul style="list-style-type: none"> <li>Raw material volatility linked to crude prices</li> <li>Regulatory and ESG risks</li> <li>Domestic demand susceptible to cyclicalities in sectors like textile</li> </ul>	<ul style="list-style-type: none"> <li>The demand for dyes &amp; pigments was impacted in FY2021 due to Covid-19, however there was some recovery in H2 FY2021.</li> <li>Outlook stable for FY2022, with demand recovery expected to continue</li> </ul>
<b>Flavours and Fragrances</b>	<ul style="list-style-type: none"> <li>Market estimated to ~\$1.4 billion</li> <li>While India is a small player in global F&amp;F market, it has high market share in certain natural ingredients segments.</li> </ul> <p>About 80-85% of the F&amp;F market is for base ingredients.</p>	<ul style="list-style-type: none"> <li>Shift towards natural flavours and fragrances</li> <li>Strong India focus by MNCs due to low cost, strong supply base for natural ingredients and large consumption market</li> <li>Rural penetration of FMCG products</li> </ul>	<ul style="list-style-type: none"> <li>Vulnerability to agro-climatic risks</li> <li>Threat from substitutes</li> <li>Forex risks</li> </ul>	<p>The outlook remains stable, owing to its use in FMCG, pharma and food and beverage industries, which have been less impacted by the pandemic.</p>

<sup>8</sup> The market size data is based on industry sources like FICCI and ICRA estimates



Segments	Highlights <sup>8</sup>	Key growth drivers	Key Challenges	Covid-19 impact and outlook
<b>Surfactants</b>	<ul style="list-style-type: none"> <li>Market estimated to be ~\$3.0 billion</li> <li>The home care segment accounts for ~50% share, personal care ~20%, industrial and others accounting for remaining.</li> <li>Large share with unorganized players catering to unorganized soaps and detergent market</li> </ul>	<ul style="list-style-type: none"> <li>Premiumisation of personal care products and demand for processed foods</li> <li>Increasing adoption of cleaning products</li> <li>Schemes like Swachha Bharat Mission</li> <li>Export opportunities in specialty chemical segment</li> </ul>	<ul style="list-style-type: none"> <li>Limited bargaining with suppliers</li> <li>ESG risks for some products</li> <li>Raw material volatility</li> </ul>	<ul style="list-style-type: none"> <li>The surfactant segment benefited in FY2021 from heightened demand for cleaning products and the same is expected to continue at least in the near term, although there may be some rationalisation in the medium term.</li> <li>In the medium to long term, the demand outlook remains favourable aided by growth in demand for the personal and home care segment as well for the use of surfactants in niche sectors and export market</li> </ul>
<b>Construction Chemicals</b>	<ul style="list-style-type: none"> <li>While B2B segment is dominated by MNCs, B2C segment has high share of unorganized players</li> </ul>	<ul style="list-style-type: none"> <li>Infrastructure development and increasing urbanisation</li> <li>Low per capita consumption compared to other developed countries</li> <li>Increasing adoption of global best practices</li> </ul>	<ul style="list-style-type: none"> <li>High competition in B2C segment from unorganized players</li> <li>Generic risks for chemical sector</li> </ul>	<ul style="list-style-type: none"> <li>The demand had weakened on account of impact of Covid-19 pandemic on construction and infra sector during H1 FY2021, however there was healthy recovery in H2 FY2021.</li> <li>The medium to long term outlook remains favourable, driven by expected infrastructure growth, increasing urbanisation, low consumption of construction chemicals in construction at present and increasing adoption of global standards. However, near term impact of Covid related containment measures remain a sensitivity factor</li> </ul>

Segments	Highlights <sup>8</sup>	Key growth drivers	Key Challenges	Covid-19 impact and outlook
<b>Fluorochemicals</b>	<ul style="list-style-type: none"> <li>Domestic market mainly driven by refrigerant sector</li> <li>Fluorination is finding an increasing use in the Life science and Pharma space.</li> </ul>	<ul style="list-style-type: none"> <li>Demand from auto, construction, personal care and pharma, apart from refrigerant segment</li> <li>Increased demand expected for specialty fluorochemicals</li> <li>Opportunity from export markets due to diversification from China</li> </ul>	<ul style="list-style-type: none"> <li>Dependence on imported Fluorspar</li> <li>Increased environmental regulations</li> </ul>	<ul style="list-style-type: none"> <li>The performance of refrigerant segment was adversely impacted in FY2021 due to impact of Covid-19 on white goods and refrigeration segment, however demand from other fluorochemical segments remained healthy.</li> <li>Companies with diversified presence in specialty fluorochemicals or CRAMs for pharma segment were able to buck the downturn.</li> <li>The near term outlook for refrigerant segment remains subdued due to the impact of second wave, but for full year FY2022, demand is expected to witness recovery.</li> </ul>



## Growth opportunities for chemical sector

The Indian chemical sector is expected to grow at a CAGR of 8.0-11% in the next few years and grow to \$ 260-\$ 300 billion by FY2025. The growth will be driven by both increase in domestic demand and increased exports, especially in the specialty chemical segment. The growth opportunities are driven by following factors:

### Domestic demand drivers

- **Growing economy** - With India being one of the faster growing economies, the demand for chemicals is expected to witness healthy growth since they find end use in several critical industries like - Auto, Construction, F&B, Oil and Gas, plastics and packaging, metals, agriculture and pharmaceuticals sector. While, Covid-19 had resulted in a contraction in the economy in FY2021, the economy is expected to witness recovery in FY2021, despite the second wave of Covid-19 having some adverse impact.
- **Changes in consumption pattern with growth in per capita income** – In several chemical categories, the per capita consumption of chemicals in India is much lower compared to developed and developing countries. However, with growth in per capita income, changes in consumption pattern with shift towards more quality products and consumer goods and adoption of global best practices in sectors like construction, manufacturing, effluent treatment etc.
- **Government push for increased petrochemical capacity in India** – Recognizing the need for increased feedstock availability and to reduce import dependence, the Government is also taking some support measures under the 'Atmanirbhar Bharat' and 'Make in India' schemes by addressing some of the issues faced by the sector to make it more attractive (measures discussed later). Currently, there are several large petrochemicals projects being implemented in India either by refining companies going for forward integration or standalone petrochemical companies adding capacities. There are projects worth ~\$ 17 billion<sup>9</sup> which are under implementation and are expected to become operational between 2021 to 2024, which will increase capacities for products like HDPE/LLDPE, oxo alcohols, PVC, xylenes , Butanol etc. Further, there are also project worth \$ 87 billion<sup>10</sup> which are under consideration.

### Export demand drivers

- Increased diversification under 'China+1'** – China is the world leader in chemical production and accounts for 36% of global chemical revenue. China had established itself as a dominant global leader by ensuring feedstock availability to meet large scale requirement, developing low cost processes and low cost of labour. However, from 2014 there has been increased environmental scrutiny leading to closure of many polluting industries. While, some of the units were subsequently back online with implementation of better pollution control measure, the same coupled with increase in labour expenses, has reduced the cost arbitrage with Indian players. Further, the global MNCs have started looking at diversifying their supply chains to become self-sustained. Considering that the size of Chinese chemical market is considerably larger than that of India, any diversification can provide significant opportunities for the Indian specialty chemical sector
- Cost arbitrage** – Indian continues to provide cost benefits due to lower operational cost as well as low labour cost, which considering the increasing cost of operations in China and other regions makes it attractive.
- Availability of skilled labour** – India has a good pool of technical skilled labour, which is essential for the specialty chemical sector

<sup>9</sup> PWC FICCI – India: A global manufacturing hub for chemicals and petrochemicals

<sup>10</sup> PWC FICCI – India: A global manufacturing hub for chemicals and petrochemicals

- d. **Favourable intellectual property rights** - India has good track record in intellectual property right (IPR) protection, which is crucial for attracting global players to continue to outsource more value added parts of their manufacturing activities to strategic partners over a long term basis
- e. **Established track record in several sectors** – Indian players have established track record in several segments like agrochemicals, pharma APIs, pigments and flavours and fragrances, of supplying to global players as contract manufacturer and supplier and over the years have moved up the value chain. There is also healthy opportunity for Indian players for growth in CRAMs and the custom synthesis business.

## Growth opportunities for plastic sector

The plastic sector is also poised for healthy growth over next few years driven by opportunities in both domestic and export market.

### Domestic growth drivers

- **Packaging segment** – The demand for multi layer films, BOPP films, wraps, thin wall moulding and rigid packaging is expected to increase driven by sectors like FMCG, processed food, textiles, toys, packaged and fast food industry, supported by changes in the retail sector.
- **Infrastructure** – The expected infrastructure growth will drive demand for pipes, tanks, wires and cables storage tanks etc.
- **Agriculture** – With increasing adoption of technology for water management and changes in agri supply chain, the demand for plastics in micro irrigation, greenhouse films, low tunnels, crates/pallets etc. is expected to grow.
- **Healthcare** – Demand for disposable medical products, packaging and specialised products like heart valves, hearing aids and prosthetics is expected to grow
- **Others** – Demand for plastic is also expected to be driven by auto sector, consumer durables, industrial components etc.

### Export growth drivers

Like the chemical sector, export demand growth drivers include advantages in terms of low cost of production and supply chain diversification by global players



## MSME sector expected to remain a key part of the sector growth

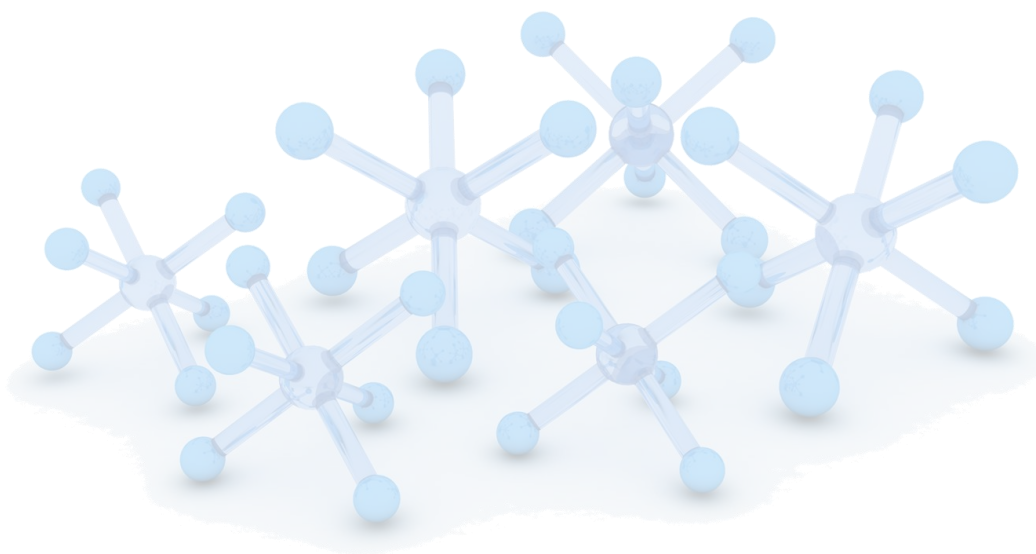
The MSME sector will continue to be a key part of the industry eco system and contribute to the expected growth in the **chemical and plastic sector**, over the next few years, driven by the factors discussed earlier. There are significant opportunities in the export market, wherein the MSMEs can become the part of the global supply chain. This can be done either by direct exports or by supplying inputs to larger domestic players, who in turn will be catering to the export market.

However, there are several challenges faced by the chemical industry and MSME sector in particular, which are discussed in the next section, which needs to be addressed to be able to leverage the opportunities.

Further, the share of the MSME sector in the chemical industry may witness some moderation over the next few years due to following factors:

- Scaling up of companies will lead to some of companies not meeting the MSME threshold
- As the sector moves up the value chain with increasing R&D spend/technology adoption/increasing environmental compliance, there will be some shift in market share from informal/MSME sector to formal/larger entities.
- Consolidation in the sector

Nonetheless, the MSME sector will continue to remain a major contributor for the chemical and plastic sector, due to its huge employment potential and Gov't initiatives to support the sector.





## Key challenges faced by chemical and plastic industry

In order to exploit the opportunities, however the domestic chemical and plastic industry need to overcome several challenges, which include:

- **High import dependence for feedstock** - A major share of India's petrochemical building blocks are used for bulk polymers; the other end-user segments have to predominantly rely upon imports for their feedstock requirements. This exposes the sector to volatility in forex rates and imported product prices.
- **Competition and impact of FTA** – Domestic players, especially in petrochemicals, face strong competition from South East Asian countries with whom India has FTAs. This had resulted in inverted duty structure in several cases, acting as disadvantage for domestic players and has been one of the reasons for moderate capacity additions by some petrochemical segments.
- **Low R&D and technology adoption** – Globally, R&D spend for USA is 2.8% for GDP, while for China it is 2.1% of GDP, whereas for India it is only ~0.7%<sup>11</sup>. However, to move up the value chain it will be needed for domestic companies to increase R&D expenses. Further, it will also be crucial for the sector to for enhanced technology adoption to improve the quality of products.
- **Lack of scale** - Majority of the specialty chemical manufacturers in India operate at a significantly lower scale, which impacts their ability to compete with the Chinese counterparts.
- **Logistics related constraints** - Due to poor logistics, domestic manufacturers face difficulties in obtaining raw materials from suppliers at competitive prices. While, the bulk chemical industry is mainly concentrated in the West coast, especially Gujarat, due to availability of raw materials and port connectivity, significant demand comes from the end-user industries located in the Southern and Eastern regions, leading to high transportation cost.
- **Environmental risks** - While environmental regulations (and enforcement) in India have been relatively stricter than China, the level of enforcement varies depending upon the location and the size of the enterprise. While, the large and medium players have been increasingly adopting global standards, it remains a challenge for smaller units and steps will have to be taken to address the issues.

## Challenges specific to MSME sector

- **Access to funding** – availability of easy credit and funding options for the MSME sector for working capital, capacity expansion and technology upgradation remains critical. While there are several schemes specific to MSME sectors to provide funding support, access to funding remains a challenge.
- **Risks of technology obsolescence** - with low R&D spend and limited access to technology, the MSME segment's ability to scale up and move up the value chain is impacted.
- **Manpower skilling** – skilling up of manpower to move up the value chain remains a constraint for MSME sector
- **Constraints related to environmental regulation compliance** - environmental compliance is a constraint for MSME sector, which restricts their ability to move up the value chain or gain share in export market, especially in certain segments like dyes and pigments, which has high effluent treatment requirement.
- **Supply chain inefficiencies** - The MSME segment also faces challenges of supply chain inefficiencies, which impacts the growth in the sector. Further, the marketing setup for smaller players are inadequate and limit their ability to grow

<sup>11</sup> EAC, FICCI and other sources

- **Lack of awareness about intellectual property rights related issues** - Focus on intellectual property rights (IPR) is critical to move up the value chain, however the MSME segment is constrained by lack of awareness about IPR related issues
- **Regulatory issues** - There are plethora of regulations relating to MSME sector, with lack of synchronisation among different agencies on interpretation of regulations, which impacts ability of the MSME players to effectively benefit from the various support measures provided by Gov't

## Gov't measures to mitigate impact of Covid-19 and other measures to support the domestic industry

To mitigate the impact of Covid-19, GOI had announced specific measures to support industry in general and MSME in particular. Some of these measures included:

- Covid-19 relief measures announced by RBI, which provided for moratorium on interest and principle payments during the period of March to August 2020, resolution framework for Covid-19 related stress (Resolution Framework 1.0 in Aug 2020 and Resolution Framework 2.0 in May 2021)

- RBI had initially allowed moratorium of 3 months from March 2020 to May 2020, on interest and principle payments, which was subsequently extended till Aug 2020.
- Subsequently, the Resolution Framework 1.0 was announced in Aug 2020
- This had provided a window to enable lenders to implement a resolution plan in respect of eligible borrowers, while classifying such exposures as standard, subject to specific conditions
- If the resolution plan was approved, the lending institutions may allow extension of the residual tenor of the loan, with or without payment moratorium, by a period not more than two years.
- The resolution plan also provided for conversion of a portion of the debt into equity or other marketable, non-convertible debt securities issued by the borrower, subject to conditions
- With the re-intensification of Covid-19 in May 2021, Resolution Framework 2.0 scheme was announced,

- **Emergency Credit Line Guarantee Scheme (ECLGS)** - On account of the disruptions caused by the second wave of COVID 19 pandemic to businesses across various sectors of the economy, Gov't had announced the ECLGS scheme to provide liquidity support through loans with favourable interest rate and 4 year repayment tenure including 12 month moratorium on principle. The scheme has been periodically modified based on developments related to the pandemic and in May 2021, the tenure was extended to 5 years, with repayment of interest only for first 24 months. Validity of ECLGS has been extended till 30.09.2021 or till guarantees for an amount of Rs.3 lakh crore are issued. Disbursement under the scheme are permitted up to 31.12.2021

- Measures under the economic stimulus package for various sectors including manufacturing

Apart from the relief measures due to Covid-19, there were several specific measures and schemes for Chemical sector under various broader initiatives including under the 'Atmanirbhar Bharat' policy, which tries to address some the challenges discussed earlier and include the following:

- **Rationalisation of duty structure and anomalies under FTA and other trade protection measures**
  - Local availability of petrochemical feedstocks, especially naphtha, has always been a challenge for the downstream chemical sector as over 80% of the refineries have forward integration in the production

of petrochemicals. Competitiveness in the industry is likely to improve with the basic customs duty on naphtha reduced from 4% to 2.5%.

- The domestic sector face competition from imports from countries with which Indian had FTAs, which had resulted in inverted duty structure impacting the competitiveness of domestic manufacturing. Some of these anomalies have been addressed or are being addressed by providing some trade support measures. Further, measures like Anti Dumping Duty has been extended on various chemicals or likely to be implemented with several investigations currently underway
- Under the FTA, duty concessions are required to be extended only to such imported goods which are 'made in' the exporting country. Each FTA contains a set of rules of origin, with the criteria that must be fulfilled for goods to attain 'originating status' in the exporting country. However they have been misused, due to which now the importer is required to conduct due diligence before importing the goods to meet the prescribed originating criteria. For this, list of minimum information which the importer is required to possess while importing the goods has been provided in the rules along with general guidance. The rules further lay down strict timelines for initiating and conclusions of origin related verification.

#### CARTOTAR-2020

- The extent of information expected to be possessed by an importer is defined.
- Importer is required to keep origin related information specific to each B/E for minimum five years from date of filing B/E.
- Mandates inclusion of specific origin related information in B/E.
- Provides for scenario wherein verification from exporting country can be initiated.
- Sets timelines for receiving information from verifying authorities where same is not provided in Trade Agreements.
- Sets timelines for finalising decision based on information received from importer/verifying authorities.
- Action which may be taken on import of identical goods, when it is determined that goods do not meet originating criteria.

- **Mandatory BIS standards** - The DCPC, has mandated imports of certain chemicals and petrochemicals to comply with specified levels/grades set by the Bureau of Indian Standards (BIS). These will also act as non-tariff measures to support domestic industry from competition from cheaper and lower quality imports
- **Various other support measures** – Gov't has various schemes and support measures for the sector, to incentivise innovation and R&D and improve knowledge base, some of which includes:
  - Skill development programmes
  - Setting up of Development council and advisory forum
  - Scheme for setting up centre of excellence in field of petrochemicals
  - Chemical promotion and development scheme
- **Intellectual property rights protection measures** - In June 2019, India had accepted three important classification treaties of the World Intellectual Property Organization that are designed to ease the search for trademarks and industrial designs.
- **Public procurement policy** - As a part of the Make in India initiative, the Department of Chemicals and Petrochemicals (DCPC) has notified all procuring entities to comply with the local content criteria for a set of chemicals, petrochemicals and pesticides irrespective of the purchase value. At present, the policy is

applicable to over 28 chemicals, petrochemicals, pesticides and dyestuff. The minimum local content will progressively increase till FY25 (~50% in FY19 to ~80% by FY23-25)

- **Export promotion scheme** - Various export promotion schemes have been implemented by the Government to improve India's share in global trade.
- **Production linked incentive scheme** – The objective of PLI scheme is to promote manufacturing within the country and reduce import dependence. Department of Pharmaceuticals, in July 2020<sup>12</sup>, had announced the scheme for around fourteen fermentation-based Active Pharmaceutical Ingredient (APIs), twenty-three chemically synthesised APIs, and four key starting materials (KSMs) starting from FY2022–23, wherein incentives will be provided for six consecutive years. **Further, PLI schemes are being explored for other chemical segments also, which if provided may boost investments in these sectors and will be positive for the industry.**
- **Draft chemical (management and safety rules)** - In December 2020, the Government released the fifth draft of the Chemical (Management & Safety) Rules (CMSR), which will supersede the two existing rules – Manufacture, Storage and Import of Hazardous Chemical Rules, 1989, and the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996. The draft CMSR has details about notification, registration and restrictions, or prohibitions, as well as requirements related to labelling and packaging of substances, and introduce Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) like registration requirements for certain priority substances having a quantity of  $\geq$  one tonne per year.
- **Proposed new PCPIR policy 2020-35** - In order to promote investment in the chemical and petrochemicals sector, the Government had launched the Petroleum, Chemicals and Petrochemical Investment Regions (PCPIRs) policy in April 2007, with PCPIRs being developed in the states of Andhra Pradesh (Vishakhapatnam), Gujarat (Dahej) and Odisha (Paradip), however except for Dahej, the progress in other two locations has been moderate, while the previously proposed PCPIR in Tamil Nadu (Cuddalore and Nagapattinam) has been scrapped majorly due to protests from the local residents and authorities. In order to address some of the issues, the Government has proposed the new policy, with some major changes including reduction in size of PCPIR from 250 sq. km to 50 sq. km, with specific cluster-integration strategy and viability gap funding for infrastructure projects and smart utilities for a value of up to 20% each and Central Gov't taking over the lead role.
- **Scheme of setting up plastic park** - The DCPC has formulated a scheme for setting up plastic parks to create an ecosystem for the domestic downstream plastic processing industry through a cluster-development approach to consolidate and synergise the capacities, to attract investments and to boost exports, by facilitating the development of quality infrastructure and modern research and development (R&D) measures and achieve environmentally sustainable growth through new methods of waste management, recycling, etc. Six plastic parks have been approved under the scheme so far and the Government is planning to build more. Funding of up to 50% of the project cost, subject to a ceiling of Rs. 40.0 crore per project, will be provided by Government of India, while the remaining investment in the SPV can be from State Gov't or State Industrial Development Corporation, which shall be at least 26% of cash equity in the project (excluding any land value).

<sup>12</sup> [pharmaceuticals.gov.in](https://www.pharmaceuticals.gov.in)

## Schemes specific to MSME sector

Schemes for MSME under 'Atmanirbhar Bharat Abhiyan'<sup>13</sup>

- Rs 20,000 crore Subordinate Debt for Stressed MSMEs – Government of India to provide a support of Rs. 4000 crore to Credit Guarantee Trust for Micro and Small Enterprises. It will also make provisioning of Rs. 20000 crore as subordinate debt, which will provide equity support to stressed MSME units.
- Rs 50,000 crore Equity infusion for MSMEs through Fund of Funds - On 13th May 2020, Fund of Fund for MSME Scheme was announced, under which ~Rs. 50,000 crore can be infused as Equity for MSME. This will establish a framework to help MSMEs in capacity augmentation and to provide an opportunity for MSMEs to get listed in stock exchanges. NSIC Venture Capital Fund Ltd., a subsidiary company of National Small Industry Corporation Ltd. (NSIC) incorporated under Companies Act 2013. It has been identified as SPV for Fund of Funds. SBI Cap Ventures Ltd and Khaitan and Company has been selected as Fund Manager/ Asset Management Company and Legal Advisor for SRI Fund Ministry is taking further steps for operationalization of the fund of Funds. The SRI Fund scheme is in initial stage of implementation.

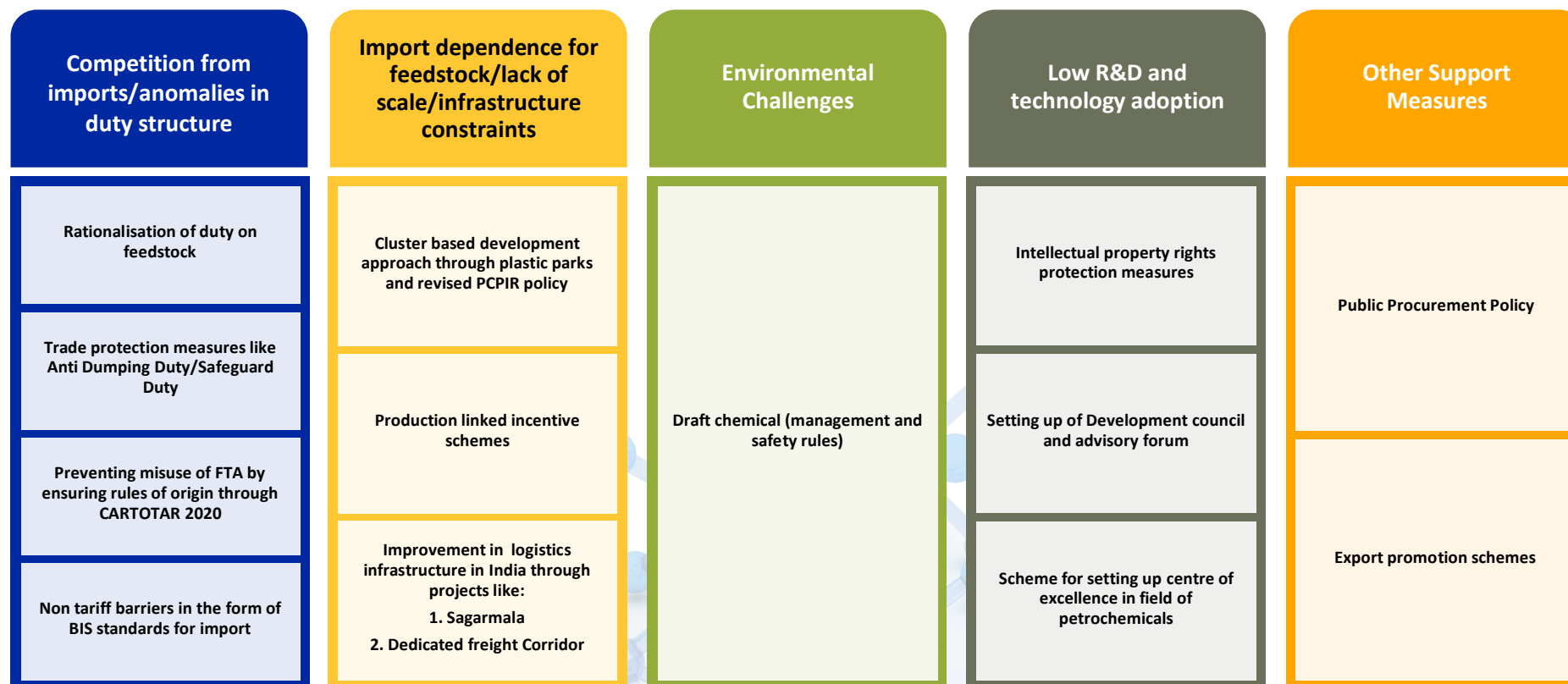
These initiatives will help in attracting investments as Debt as well as Equity and creating more jobs in the MSME sector. Apart from these, the Ministry of MSME runs numerous schemes targeted at a) providing credit and financial assistances, b) skill development training, c) infrastructure development, d) marketing assistance, e) technological and quality upgradation and, f) Other Services for the MSMEs across the country.



<sup>13</sup> Ministry of Micro, Small & Medium Enterprises



Exhibit 16: Summary of key challenges and steps taken to mitigate the same



## Measures to be taken by industry

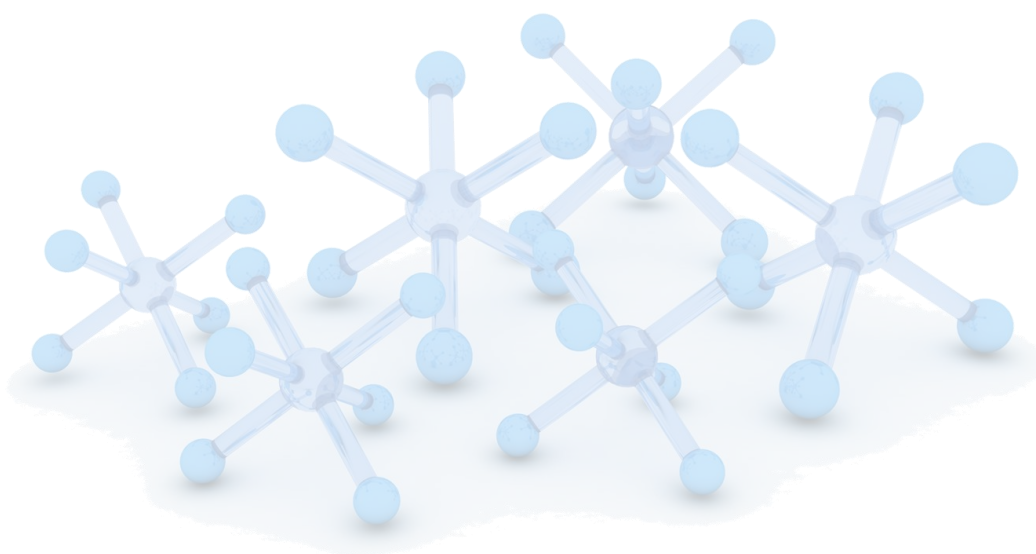
While the aforementioned measures by GOI will provide support to the domestic industry, there are several steps which the industry can take to leverage the opportunities. In fact, several companies have already taken some of these measures in the last decade.

- **Increased R&D spend** – Companies which consistently invest in R&D have been able to move up the value chain and develop sustained advantage.
- **Technology adoption through tie ups, acquisition and consolidation** – Apart from R&D spend, technology adoption can also be done through tie up with global players, consolidation with domestic or MNC companies or acquisition of smaller companies with access to complementary technology.
- **Customer and product diversification** – In order to scale up and reduce risk, companies which over time manage to diversify customer base, end users and geographies; are able to have sustainable growth and meaningful market share.
- **Cost savings through efficiency measures** – While process improvement, investment in digital technology and automation and other measures aid in cost savings and improved efficiencies, companies have also gone for vertical integration through greenfield projects or through acquisitions, which provides long term cost advantages.
- **Environment and sustainability** – Companies which aim to increase global footprint in the export market, need to ensure all environmental and sustainability related regulations are complied, and if they have a focused and proactive policy on the same, it will be a source of advantage.
- **Stakeholder engagement through associations** – There are already several associations for chemical sector and specific sub segments which engage with various stakeholders and Government for various policy measures like regulations, trade protection measures, incentives etc. It is crucial for the associations to be regularly engaged with Gov't to ensure that sector level challenges are adequately highlighted and feedback is given on adequacy of Gov't support measures, so that they can be fine-tuned.

- **Collaboration with MSME sector** - In order to achieve the potential for growth, it will also be imperative for larger domestic and global players to have more collaboration with MSME sector to integrate them as part of domestic and global value chain. Some of the key areas of such collaboration include:
  - Technology upgradation
  - IT and Digitisation
  - Compliance with global standards and regulations on environmental, social and Governance issues
    - Labour issues
    - Environmental compliance
    - Health and safety
  - Manpower training
  - R&D collaboration
  - Ensuring timely payments

## Conclusion

- The Indian chemical industry witnessed healthy growth between FY2016 to FY2020, driven by increasing domestic demand as well as growth in exports for some key sub-segments. The specialty chemical segment has also witnessed healthy growth during the period and India is a net exporter in this segment. During FY2021, while there was an adverse impact on the sector's performance in Q1 FY2021 due to the impact of the Covid-19 pandemic and related containment measures, demand witnessed a recovery since Q2 FY2021 with easing of containment measures and it continued in the next two quarters, which, coupled with healthy export demand in several segments, mitigated the adverse impact witnessed in H1 FY2021. Further, the margins were also supported by lower crude-linked raw material prices during 9M FY2021. Nonetheless, the MSME sector, which has a significant share in several chemical segments, was adversely impacted during H1 FY2021. However, several steps taken by the Government to mitigate the impact on manufacturing industries, including relief provided by the RBI, the ESLGC schemes and the restructuring scheme, apart from some specific schemes for the MSME sector, have mitigated the impact.
- Going forward, with the global majors trying to diversify their supply chain in the wake of COVID-19 exposing the vulnerabilities of supply chain concentration, the Indian specialty chemical industry is well placed to exploit the opportunity and the same along with the Govt's - 'Atmanirbhar Bharat' and 'Make in India' policy, should drive multi-year growth for the sector
- Further, domestic demand is also expected to grow, aided by growth in the economy, changes in the consumption pattern with increase in per capita income and adoption of global practices by the end user industries.
- With the expected growth in demand, the Indian chemical and plastic sector should benefit, including the MSME sector, although ICRA expects that in the medium to long term, the share of MSME segment in the chemical sector may moderate with scaling up of companies, increasing consolidation and companies moving up the value chain.
- There are several challenges faced by the industry (including MSME), which needs to be addressed, however, the Government has taken several industry-specific measures and policies in recent years, which should mitigate the risks and provide support to the sector to leverage the opportunities. Nonetheless, successful implementation of schemes and policy measures and translation of the same into improved sector performance remains a sensitivity factor.



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