

Assessment of the PVC stabilizers industry

Platinum Industries Ltd

June 2023

Contents

1	Global macroeconomic overview	6
1.1	GDP outlook for 2022-25	6
1.2	Trend in GDP growth across major economies	7
1.3	Impact of Covid-19 on the manufacturing sector	8
1.4	Changing outlook on manufacturing in China	9
2	Indian macroeconomic overview	10
2.1	India to remain fastest growing economy despite GDP growth of 6% in fiscal 2024	10
2.2	The economy's path from pre-pandemic to current times	11
2.2.1	Opportunities that could raise India's medium-term potential	11
2.2.2	Possible constraints to achieving potential growth	11
2.3	Macroeconomic indicators	12
2.4	Inflation forecast to soften in FY24, but headwinds building up	12
2.5	Share of industrial sector and its components in GVA	13
2.6	Index of Industrial Production (IIP) exhibited recovery	13
2.7	India's favourable demographics to fuel growth	14
2.8	Indian chemical sector expected to grow 1.5x by 2025	15
2.9	PLI scheme for chemicals	16
3	Global chemical and speciality chemical industries	17
3.1	India's positioning in the global chemical industry	17
3.2	Global speciality chemical market to log 4-5% CAGR by 2026	18
3.3	APAC – key contributor to global speciality chemical market in 2021	20
3.4	China's chemical industry performance	21
3.5	China's speciality chemical market is eroding	21
3.6	Indian market expected to grow sharply as compared to other regions	22
4	Indian chemical and speciality chemical industries	23
4.1	Indian chemical industry	23
4.2	Indian speciality chemical industry	23
4.3	Favourable global factors	24
4.4	Key growth drivers for the Indian chemicals industry	25
5	Overview of PVC Stabilizers	26
5.1	Introduction to PVC stabilizers	26
5.2	PVC stabilizer usage and application	26
5.3	PVC stabilizer categorization by chemistry	26
5.4	PVC stabilizer market trend	27
6	Global PVC stabilizer market assessment	29
6.1	Global PVC stabilizers market	29
6.2	Global PVC stabilizer market growth driver	29
6.3	Market size by region	29
6.4	Market size by application segment	30
6.5	Market Size by product type	31
6.6	Global player landscape	31
7	India PVC stabilizer market assessment	32
7.1	India PVC stabilizers market	32

7.2	India PVC stabilizers manufacturing landscape.....	33
7.3	Growth drivers for PVC stabilizers market	34
7.3.1	India PVC industry development and growth outlook.....	34
7.3.2	India PVC demand by application segments	34
7.3.3	Government initiatives to drive PVC demand	35
8	Middle East and North Africa (MENA) PVC stabilizer market	37
8.1	MENA PVC stabilizers market overview	37
8.2	MENA player landscape.....	37
8.3	MENA region by application.....	37
8.4	Market Size by product type.....	38
8.5	MENA region growth drivers	38
8.6	PVC stabilizers market for countries - Egypt, Turkey, and Saudi Arabia.....	39
9	Platinum Industries Ltd Market Positioning	42
9.1	Platinum Industries Ltd market positioning	42
9.2	Product portfolio	42
9.3	Manufacturing infrastructure	42
9.4	Focus on research and development.....	42
9.5	The non-lead product category accounted for majority of sales in FY22.....	42
9.6	Strong customer base	43
10	Benchmarking with Indian Peers	44

List of figures

Figure 1: Expected global GDP growth rate (%).....	6
Figure 2: Manufacturing PMIs.....	8
Figure 3: India GDP outlook.....	10
Figure 4: CPI inflation development (% , y-o-y).....	13
Figure 5: Share of industrial and its components in GVA.....	13
Figure 6: Value of IIP.....	14
Figure 7: Annual Average IIP (manufacture of chemicals and chemical products).....	14
Figure 8: Capacity utilisation for major chemicals.....	16
Figure 9: Production of major chemicals ('000 MT).....	16
Figure 10: Global chemical industry size (\$ trillion).....	17
Figure 11: Global chemical industry by segment (\$ trillion).....	17
Figure 12: Global speciality chemical market size (\$ billion).....	20
Figure 13: Market share of key countries in speciality chemicals in 2021.....	20
Figure 14: Growth of China's chemical industry (\$ billion).....	21
Figure 15: Trend in China's chemical exports (\$ billion).....	21
Figure 16: Region-wise growth in speciality chemicals (2021-26, CAGR).....	22
Figure 17: Indian chemical industry development (\$ billion).....	23
Figure 18: Indian chemical industry by sub-segments.....	23
Figure 19: Indian speciality chemicals industry's trajectory (\$ billion).....	24
Figure 20: Global PVC stabilizers market (Thousand tons).....	29
Figure 21: Market size by region (CY2022, By volume).....	30
Figure 22: Market size by application (CY2022, By volume).....	30
Figure 23: Market size by product type (CY2022, By volume).....	31
Figure 24: India PVC stabilizers market development (Thousand tons).....	32
Figure 25: India PVC stabilizers market by application (FY22, By volume).....	32
Figure 26: India PVC stabilizers market by product type (FY22, By volume).....	33
Figure 27: India PVC demand (Thousand tons) to record healthy growth over the next five years.....	34
Figure 28: PVC demand by application segments (FY22).....	34
Figure 29: Urban infrastructure to lead demand growth over next five fiscals.....	36
Figure 30: MENA PVC stabilizer market (Thousand tons).....	37
Figure 31: MENA region by application.....	37
Figure 32: Market size by product type (2022, By volume).....	38
Figure 33: Egypt PVC stabilizers market (Thousand tons).....	39
Figure 34: Turkey PVC stabilizers market (Thousand tons).....	40
Figure 35: Saudi Arabia PVC stabilizers market (Thousand tons).....	40

Figure 36: Platinum Industries Ltd sales of PVC stabilizers (in metric tons)	43
Figure 37: Platinum Industries Ltd sales of PVC stabilizers (in lakhs)	43

List of tables

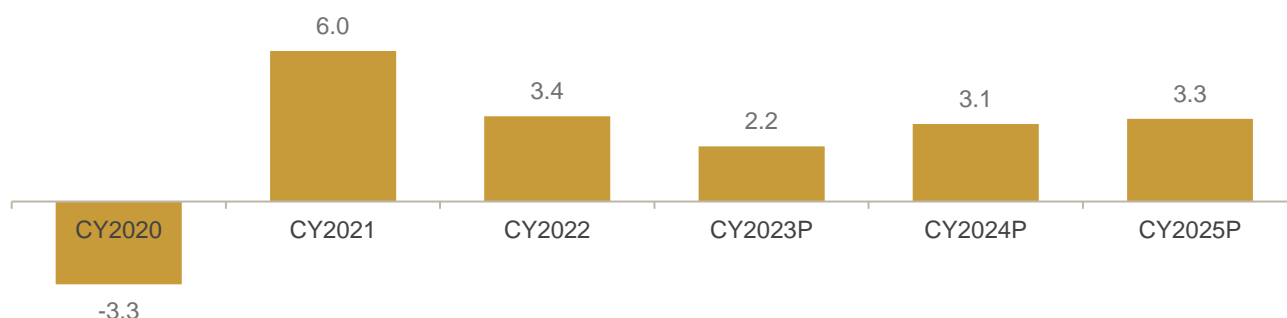
Table 1: GDP growth projection for major economies	7
Table 2: CPI inflation projection (annual percentage change)	7
Table 3: Competitiveness of India vs China.....	9
Table 4: Demand side (Rs Trillion at constant prices)	11
Table 5: Supply side (Rs Trillion at constant prices).....	12
Table 6: Key projections.....	12
Table 7: Chemical exports	17
Table 8: Chemical imports	18
Table 9: Comparison between commodity and speciality chemicals	18
Table 10: Major sub-segments within the speciality chemicals market (value terms) in fiscal 2022.....	24
Table 11: Capacity of top 3 manufacturers in India by sales.....	33
Table 12: Revenue from operations.....	44
Table 13: Gross profit and gross margin.....	44
Table 14: EBITDA and EBIDTA margin.....	44
Table 15: Profit after tax.....	44
Table 16: Return on equity and capital employed	45
Table 17: Gross fixed asset turnover ratio	45

1 Global macroeconomic overview

- Global gross domestic product (GDP) growth is estimated at 3.4% for 2022. S&P Global has lowered its growth forecasts for period 2022 and 2023 and raised forecasts for inflation. Rising rates, increased European energy insecurity, and the lingering effects of COVID-19 are hitting growth almost everywhere; Asia-Pacific remains a relative outperformer.
- The Russia-Ukraine war seems to have entered a phase of attrition, and while the conflict hasn't yet spilled over to neighbouring countries, the risk of miscalculations, mistakes, or other unexpected events is as high as it's been since the end of the Cold War more than 30 years ago. Financial conditions are currently tightening as central banks raise rates quickly, foreshadowing slower growth. Most leading and sentiment indicators are pointing toward slower growth as well.
- Eurozone is forecast to take the biggest hit to growth from the war, given its proximity to the war zone and higher exposure to volatile global energy costs. S&P Global expect a sharp slowdown in eurozone growth in 2023. An unprecedented deterioration in the terms of trade has pushed inflation to record highs. Western Europe will avert a severe recession as energy conditions improve. S&P Global still forecast a mild, two-quarter recession as high inflation erodes household incomes and financial conditions tighten. Yet, the risk of severe, energy-induced contractions in output has decreased thanks to temperate early winter weather, high natural gas storage levels, and lower energy prices.
- Asia-Pacific will be a bright spot in the global economy in 2023. S&P Global assumes that domestic resilience and solid growth in mainland China--albeit off a weak base--will keep regional growth at a healthy level. Strong consumption in the more domestically led economies of India, Indonesia, and the Philippines will also lift the average.
- Most Asia-Pacific countries have internalised Covid-19 and seem to be gaining pace in industrial activity. But they remain affected by volatile commodity prices. Core inflation has shot up in some Asia-Pacific economies, less so in others. It has soared in Australia, South Korea, and New Zealand and has remained high in India. On the other hand, it has stayed low in China and Japan and modest in Hong Kong, Indonesia, Malaysia, Taiwan, and Thailand

1.1 GDP outlook for 2022-25

Figure 1: Expected global GDP growth rate (%)



P: Projected

Note: Data for calendar year

Source: S&P Global Economics, Oxford Economics

1.2 Trend in GDP growth across major economies

Table 1: GDP growth projection for major economies

Region	2021	2022	2023P	2024P	2025P
US	5.7%	1.8%	0.7%	1.2%	1.8%
Eurozone	5.2%	3.3%	0.3%	1.0%	1.7%
UK	7.4%	4.3%	-0.5%	1.5%	1.8%
China	8.1%	2.7%	5.5%	5.0%	4.7%
Japan	1.7%	1.5%	1.0%	1.1%	1.1%
India	-5.8%	9.1%	7.0%	6.0%	6.9%
Brazil	5.0%	2.9%	0.8%	1.7%	2.0%
Saudi Arabia	3.2%	7.5%	3.2%	2.6%	2.5%
Turkey	11.6%	5.2%	2.1%	2.8%	3.4%

Note: Fiscal year for India's GDP growth outlook, calendar year for other countries

Source: S&P Global (Q2, 2023 Global Outlook), CRISIL MI&A Consulting

Sharp monetary tightening puts the brakes on global growth

Central banks are reversing their relaxed policy stance in response to continuing cost pressures in global supply chains, amplified after Russia's military actions in Ukraine destabilized energy, food, and other key commodity markets. Global economic activity has remained resilient so far, but signs of slowing activity are appearing. The US economy grew by an annualized 1.1% in the first quarter of the calendar year, slowing compared with the previous quarter (2.6%). At the same time, manufacturing activity in China contracted for the first time since the country reopened after ending its zero-Covid policy. Inflation remains high in several key economies prompting central banks to continue with rate hikes. The US Federal Reserve (Fed), Bank of England and European Central Bank (ECB) all hiked interest rates at their May 2023 policy meetings.

Inflation, energy security and geopolitical uncertainty are risks

Persistent supply-side price pressures in the food and energy markets may fuel inflation, and the evolving repercussions of the Russia-Ukraine conflict could undermine global trade and economic growth. Other notable risks stem from governments prioritizing energy security and affordability over sustainability in the short term.

Table 2: CPI inflation projection (annual percentage change)

Region	CY2022	CY2023P	CY2024P
US	6.3	4.7	2.8
Europe			
Eurozone	8.4	5.9	2.7
Germany	8.7	6.7	2.9
France	5.9	5.4	2.3
Italy	8.7	6.5	2.3
Spain	8.4	4.6	3.2
UK	9.1	5.8	1.4
Asia-Pacific			
China	2.2	2.3	2.7
Middle East			
Saudi Arabia	2.5	2.9	2.2

P: Projected, Data for calendar year

Source: S&P Global (Q2, 2023 Global Outlook)

Inflation relief packages unveiled by US and European economies in 2022 to combat inflation

US: The US Congress passed the Inflation Reduction Act, 2022 committing \$370 billion dedicated to curbing harmful emissions and promoting green technology. The Act also aims to help individuals who need better healthcare benefits and financial stability in times of inflation, in addition to reducing the effects of inflation.

France: France unveiled a €20 billion anti-inflation package to assist struggling people deal with rising energy and food prices. The package includes increasing certain welfare payments and pensions by 4%, raising civil servants' salaries by 3.5%, fuel rebates by €0.12 a litre from September-October 2022 and promoting private companies to provide employees with tax-free bonuses of up to €6,000.

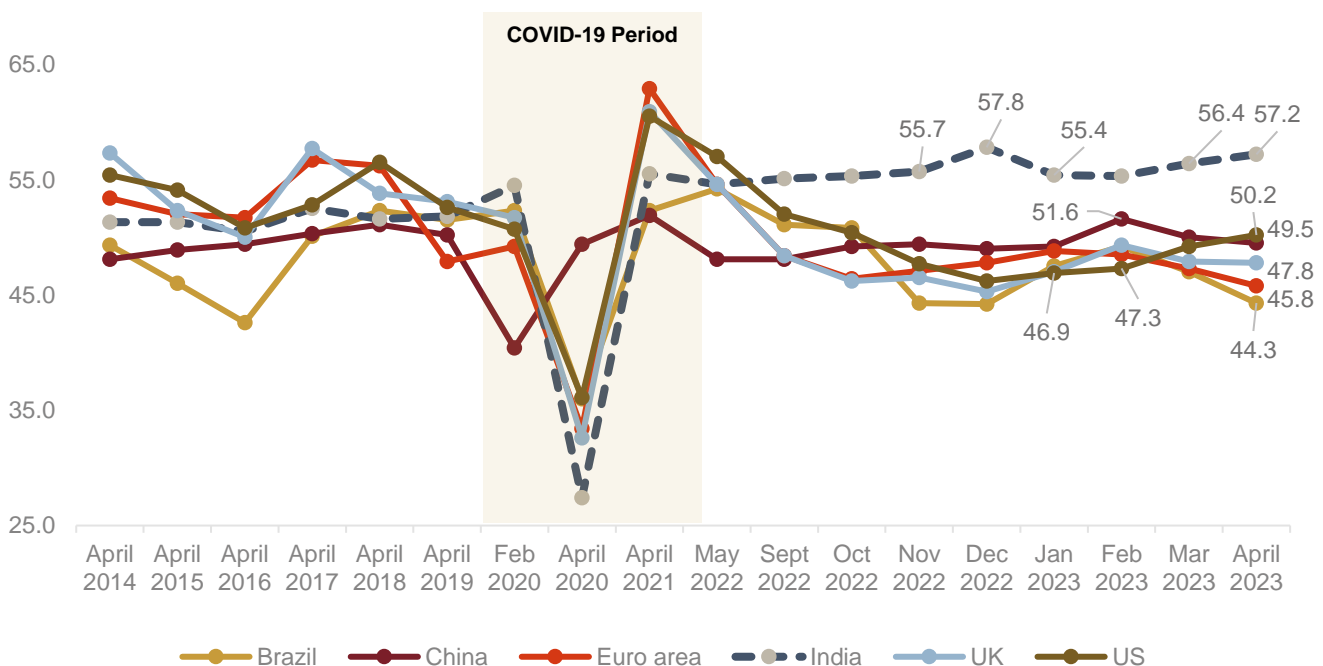
Germany: Germany unveiled a fresh €65 billion inflation relief package to help households cope with the rising prices. The package includes cheaper public transportation, one-off payment of €300 to pensioners to help them cover rising energy bills, and reduction in the tax on petrol.

Italy: Italy approved a €17 billion package to tackle inflation arising from high energy cost and consumer prices. The package includes cutting electricity and gas bills for low-income families, tax cuts and re-evaluation of pensions. It also aims to support farmers against drought.

1.3 Impact of Covid-19 on the manufacturing sector

Manufacturing Purchasing Managers' Index (PMI) numbers across economies have exhibited roughly similar patterns in the past few years. The index plummeted during the Covid-19 peak period in the wake of the initial lockdowns across the world, and rebounded sharply, even above pre-pandemic levels, as restrictions were relaxed and fiscal incentives to boost the economy became common across countries. PMI has since followed a pattern wherein the scare of each pandemic wave has impacted it severely, with the trend moderating in the later months of 2021 and continuing into 2022, even in the wake of the Russia-Ukraine conflict.

Figure 2: Manufacturing PMIs



Source: S&P Global

The S&P Global India's manufacturing PMI in April 2023 rose to 57.2 from 56.4 in the month before, reflecting a robust and quicker expansion in new orders. Production growth took another step forward in April. Companies also benefited from relatively mild price pressures, better international sales, and improving supply-chain conditions.

1.4 Changing outlook on manufacturing in China

The U.S.-China trade war and the supply and demand shocks brought on by the COVID-19 crisis are forcing manufacturers everywhere to reassess their supply chains. Since 2018, the U.S. and China have been involved in a war of tariffs and retaliatory tariffs. The effects of the U.S.-China trade war can be felt throughout the supply chain, from raw material suppliers to manufacturers, wholesalers, and retailers. With the recent pandemic, companies have begun to express concerns about manufacturing in China. The pandemic, which originated in Wuhan, disrupted supply chains and crippled business production the world over. The COVID-19 pandemic has exposed the vulnerability of global supply chains, highlighting the danger of relying on just one country, China, for everything from raw materials to contract manufacturing to production facilities, prompting many to seek alternative locations.

India to benefit from China's downturn

The COVID-19 pandemic highlighted the risk of high Chinese dominance in the global supply chain and led to the China+1 strategy or supply chain derisking taking shape. This creates an opportunity for Indian manufacturers, which have a cost advantage. This is expected to support the growth momentum for key end-user industries and augurs well for the speciality chemicals market.

Table 3: Competitiveness of India vs China

Parameter	US/Europe	China	India
Labour cost			
Environmental compliance			
Plant capex			
Government policy support			
Conduciveness of recent geopolitical landscape			

Note: Colour of the pie indicates relative advantage of a particular country/region vis-à-vis others in relation to a particular parameter. A fully coloured pie indicates maximum advantage compared with the other two regions.

Source: CRISIL MI&A Consulting

Several Indian companies are looking to set up global-sized plants to cater to growing domestic and global demand. The government is also supporting manufacturing in India. Due to India's competitive advantage in multiple industries, favorable production characteristics, a favorable business environment and positive government policies, India is expected to be the next best prospect to benefit from this changed position. The government has implemented production-linked incentive (PLI) programs for a variety of industries, such as textiles and electronics, as well as boosting import levies on several products. Global macro tailwinds in some industries such as textiles, speciality chemicals, pharmaceuticals, metals, and electronic manufacturing, along with sensible government reforms, are projected to put India on a sustainable economic path.

2 Indian macroeconomic overview

2.1 India to remain fastest growing economy despite GDP growth of 6% in fiscal 2024

India is expected to grow at a faster clip than its peers, driven by stronger domestic demand. Investment prospects are optimistic given the government's capex push, progress of the Production-Linked Incentive (PLI) scheme, healthier corporate balance sheets, and a well-capitalized banking sector with low non-performing assets (NPAs). For fiscal 2023, real GDP growth is expected to be 7.0% in FY23, according to the second estimates released by the National Statistical Office (NSO).

Growth estimates revised by NSO for pandemic years (fiscal 2022, 2021 and 2020) retained for fiscal 2023

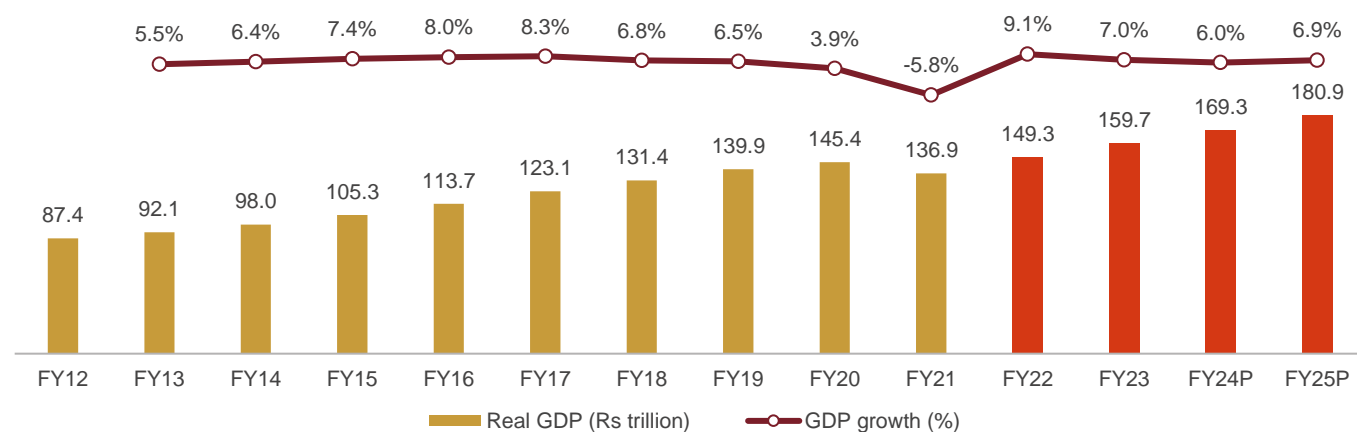
- Alongside quarterly estimates, the National Statistics Office (NSO) released revised estimates until last fiscal and second advance estimates for this fiscal.
- The second advance estimates maintained the GDP growth estimate for this fiscal at 7.0%, same as the previous estimate.
- Growth estimates were revised up for the previous 3 years — 9.1% (compared with 8.7% previously) for fiscal 2022, -5.8% (-6.6) for fiscal 2021, and 3.9% (3.7%) for fiscal 2020. This suggests that the impact of Covid-19 waves (in fiscals 2021 and 2022) was not as severe as thought previously.

GDP growth slows on domestic and external factors

India's real gross domestic product (GDP) grew 4.4% on-year in the third quarter in fiscal 2023, slower than 6.3% previous quarter and 5.2% in the same quarter last fiscal. Real GDP growth was dragged down by slowing growth in key economies - which impacted India's exports – as well as cooling domestic demand. The advanced economies will inevitably face slower growth in CY2023 as their interest rates are already at decadal highs. They account for 45% of India's exports, which will bear the brunt of weaker demand. Demand is expected to slow further as transmission of RBIs rate hikes continues and raises borrowing costs. Besides the global slowdown, a forecast of El Nino, which disturbs Indian monsoons, is another risk to monitor — it could hit rural incomes.

The above-mentioned factors are expected to slow India's GDP growth to 6.0% next fiscal from 7.0% this fiscal. However, CRISIL MI&A Consulting still expects India to remain the fastest-growing economy compared to other major economies (mentioned in table 1).

Figure 3: India GDP outlook



P: Projected

Source: CRISIL MI&A Consulting, Central Statistics Office (CSO), S&P Global Economics, Oxford Economics

Factors that will shape growth in fiscal 2024 and next

MI&A Consulting

- The global slowdown will impact domestic industrial activity through the exports channel
- The one-time lift to contact-based services from domestic demand will abate next fiscal, but government capex will stay supportive
- Corporate revenue will continue to grow in double digits, helped by buoyant domestic demand

2.2 The economy’s path from pre-pandemic to current times

After three volatile years of pandemic and war, India has managed to stage a broad-based recovery. In fiscal 2023, all sectors, including contact-based services, are estimated to have recovered above fiscal 2020 levels.

Government spending on infrastructure was strong during and post the pandemic. Although private capex was tepid during the pandemic, a gradual pick-up has been seen in the last two years, supported by lighter balance sheets, enhanced bank appetite to lend, improving capacity utilization, and push from production-linked incentive schemes.

2.2.1 Opportunities that could raise India’s medium-term potential

Investment revival

India’s growth prospects face many encouraging opportunities, and some challenges. The government is already leading the investment revival with centre’s capex recording double-digit growth in the past two years. Total central government capex is further budgeted to rise to 6.2% of GDP in fiscal 2024, higher than 5.4% average recorded during pre-Covid decade. Along with direct intervention, the government is continuing with its Production Linked Incentive (PLI) scheme for attracting private investment in select manufacturing sectors.

Additional factors driving investments

Advantage from investments related to the supply-chain de-risking strategy of global multinationals: The world is yet again reckoning a shift in investments out of China, given rising costs of production, policy uncertainty, and tensions with the US. In the fragmented geopolitical milieu, India has a favorable positioning at present. The fact that India has one of the largest domestic markets, which is poised to grow faster than most emerging market peers, adds to its attractiveness as an investment destination.

2.2.2 Possible constraints to achieving potential growth

The global environment is expected to remain subdued, as major advanced economies slow to their trend growth rates (IMF expects global GDP growth to average 3.2% in next five years, compared with 3.4% in the preceding five years). Ageing population, elevated interest rates and stretched fiscal positions are expected to drag growth in these economies over the medium run.

Table 4: Demand side (Rs Trillion at constant prices)

	GDP	PFCE	GFCE	GFCF	Exports	Imports
FY20 (3 rd RE)	145.34	82.56	14.91	45.92	28.14	33.22
FY21 (2 nd RE)	136.87	78.24	14.78	42.56	25.57	28.67
FY22 (1 st RE)	149.25	87.03	15.75	48.78	33.05	34.93
FY23 (SAE)	159.71	93.42	15.95	54.26	36.86	41.51
FY22 over FY20 (%)	2.69%	5.41%	5.63%	6.23%	17.45%	5.15%
FY23 over FY20 (%)	9.89%	13.15%	6.98%	18.16%	30.99%	24.95%

PFCE: Private final consumption expenditure; GFCE: Government final consumption expenditure; GFCF: Gross fixed capital formation

PE: Provisional estimates, RE: Revised estimates, SAE: Second advanced estimates

Source: NSO, CRISIL MI&A Consulting

Table 5: Supply side (Rs Trillion at constant prices)

	GVA	Agri and allied	Mining	Manufacturing	Electricity, gas, etc.	Construction	Trade, hotels, etc.	Financial services, real estate, etc.	Public admin and others
FY20 (3 rd RE)	132.36	19.94	3.17	22.59	3.01	10.43	26.90	28.98	17.32
FY21(2 nd RE)	126.81	20.76	2.89	23.25	2.88	9.84	21.59	29.58	16.00
FY22 (1 st RE)	137.98	21.49	3.10	25.82	3.16	11.29	24.56	30.98	17.55
FY23 (SAE)	147.12	22.21	3.21	25.96	3.45	12.32	28.05	33.11	18.80
FY22 over FY20 (%)	4.25%	7.77%	-2.21%	14.30%	4.98%	8.25%	-8.70%	6.90%	1.33%
FY23 over FY20 (%)	11.15%	11.38%	1.26%	14.92%	14.62%	18.12%	4.28%	14.25%	8.55%

PE: Provisional estimates, RE: Revised estimates, SAE: Second advanced estimates

Source: NSO, CRISIL MI&A Consulting

2.3 Macroeconomic indicators

Table 6: Key projections

	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24P
Real GDP growth (%)	8.3	6.8	6.5	3.9	-5.8	9.1	7.0	6.0
CPI ¹ (% , average)	4.5	3.6	3.4	4.8	6.2	5.5	6.7	5.0
CAD ² /GDP (%)	-0.7	-1.8	-2.1	-0.9	0.9	1.2	2.5	2.0
FAD ³ /GDP (%)	3.5	3.5	3.4	4.6	9.2	6.9	6.4	5.9
Exchange rate (Rs/\$, March-end)	65.9	65	69.5	74.4	72.8	76.2	82.3	83.0
10-year G-sec yield (% , March-end)	6.8	7.6	7.5	6.2	6.2	6.8	7.4	7.0

E: Estimated; P: Projected

¹Consumer price index; ²Current account deficit; ³Fiscal deficit

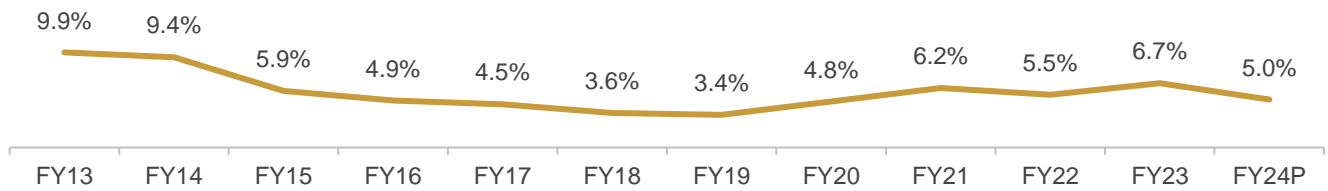
Source: CSO, RBI, CRISIL MI&A Consulting

2.4 Inflation forecast to soften in FY24, but headwinds building up

Headline Consumer Price Index (CPI) inflation declined to 5.5% on-year in fiscal 2022 from 6.2% in the previous fiscal. CRISIL MI&A Consulting expect CPI inflation to average 5% this fiscal (FY24) from 6.7% in the last fiscal.

Food inflation is expected to moderate in FY24, on account of high base effect and expectation of good rabi output. However, El Nino conditions pose an upside risk for food inflation. Fuel inflation, which shot up due to Russia-Ukraine conflict is expected to cool significantly in FY24 partly due to high base effect. Core inflation is expected to moderate but remain relatively higher than food and fuel inflation. This is because of pass through pressures on producers and resilient demand for services.

Figure 4: CPI inflation development (% , y-o-y)



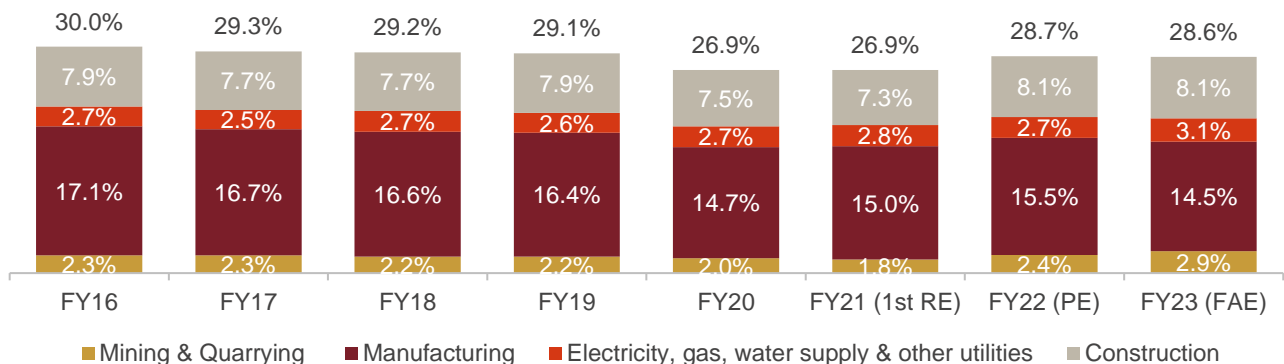
P: Projected

Source: CSO, CRISIL MI&A Consulting

2.5 Share of industrial sector and its components in GVA

In fiscal 2022, the industrial sector (including construction sector) accounted for 28.7% of nominal gross value added (GVA), at current prices. According to the NSO's first advance estimates for fiscal 2023, the manufacturing sector exhibited growth of 8.1% compared to fiscal 2022. In fiscal 2023, the share of manufacturing to account for 14.5% of nominal GVA as per NSO's first advance estimates.

Figure 5: Share of industrial and its components in GVA



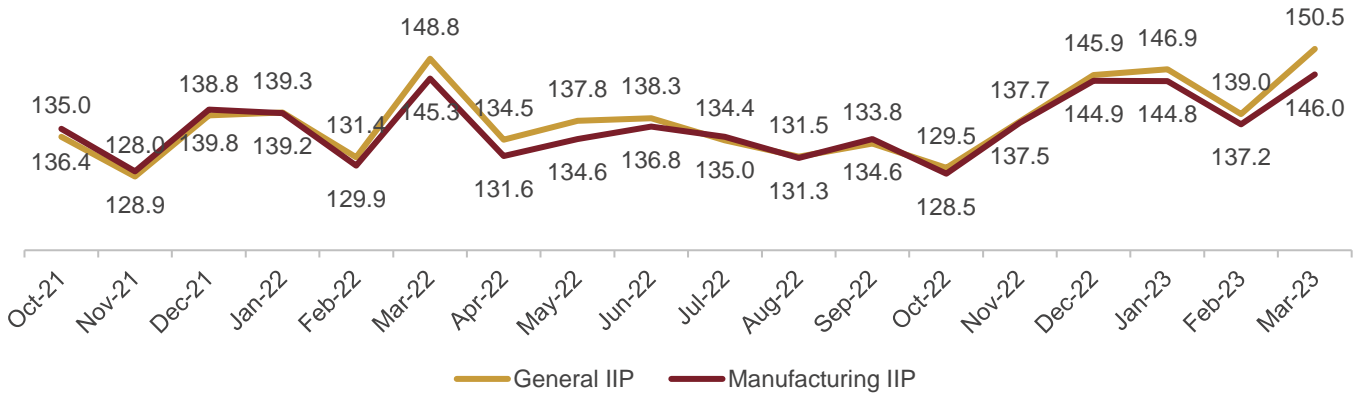
PE: Provisional forecast, FAE: First advance estimate, AE: Advance estimates, Note: Advance estimates for FY23; Data at current prices

Source: National Accounts Statistics, first advance estimates of national income 2022-23

2.6 Index of Industrial Production (IIP) exhibited recovery

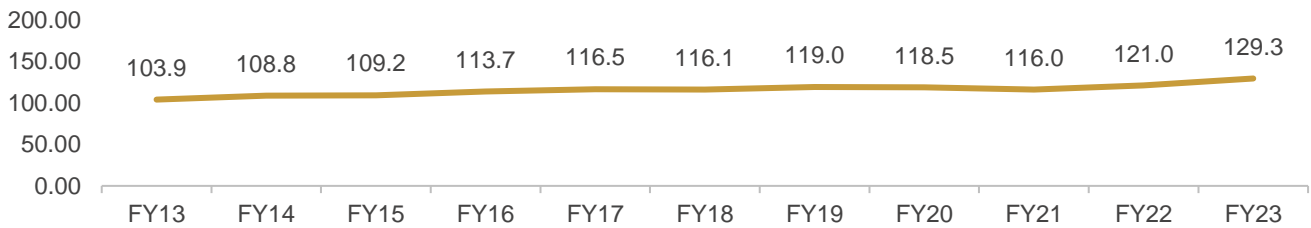
IIP grew 1.1% in the month of March 2023 compared to March 2022. Overall, in fiscal 2023, IIP grew 5.1%, compared with 11.4% in fiscal 2022. Exports weighed heavy since the second half of last fiscal, while domestic demand was relatively supportive. Exports may become a bigger drag on industrial growth in fiscal 2024, given a sharper slowdown in major advanced economies.

Figure 6: Value of IIP



Source: Ministry of Statistics and Programme Implementation

Figure 7: Annual Average IIP (manufacture of chemicals and chemical products)



Note: The figures for FY23 are provisional

Source: Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers

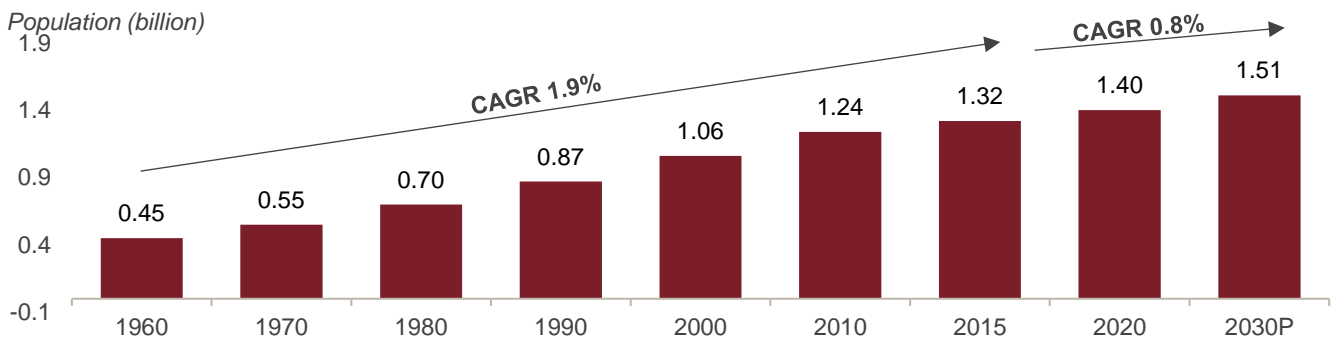
2.7 India's favourable demographics to fuel growth

India's population is projected to log 0.8% CAGR between 2020 and 2030

India's population grew to ~1.2 billion according to Census 2011, at a CAGR of 1.9% during 2001-2011. As of 2010 census, the country had about 246 million households.

According to the United Nation's (UN) World Urbanization Prospects, 2022 revision, India, and China, two of the most populous countries, accounted for nearly 36% of the world's population in 2021. The report projects India's population to increase at a CAGR of 0.8% from 2020 to 2030 to reach 1.5 billion by 2030. According to UN reports India is expected to surpass China to become most populous country in April 2023. In April 2023, India's population is expected to reach 1.425 billion people, matching, and then surpassing the population of mainland China.

India's population growth



Note: P: Projected

Source: UN Department of Economic and Social Affairs, World Population Prospects 2022, CRISIL MI&A

Global population to log 0.7% CAGR between 2020 and 2050

According to the latest UN population estimates, world population grew 1.1% on-year in 2020, or by 82 million people, to reach a global total of 7.8 billion. In the coming decades, slowdown in population growth is projected to continue. The population is expected to grow 0.7% between 2020 and 2050.

Global population growth rate

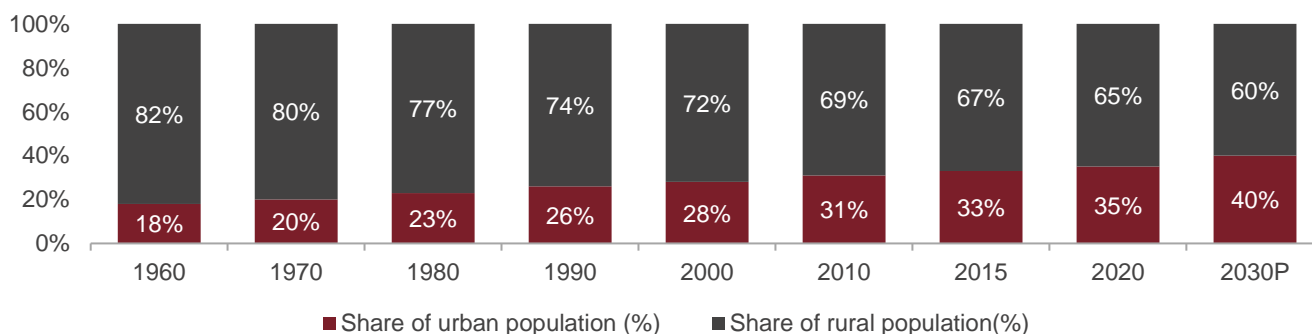
Group of economies	Population			Annual growth rate		
	(Million)			(%)		
	2015	2020	2050	2015–2020	2020	2020–2050
World	7427	7841	9709	1.1%	1.0%	0.7%
High income countries	1216	1244	1282	0.5%	0.3%	0.1%
Middle income countries	5570	5869	7024	1.1%	0.9%	0.6%
Low Income countries	610	699	1367	2.8%	2.8%	2.3%

Source: World Population Prospects 2022, CRISIL MI&A

Urbanisation in India likely to reach 40% by 2030

India's urban population has been rising over the years and is expected to continue with rise in economic growth. From ~31% of the total population in 2010, it is projected to rise to nearly 40% by 2030, according to a UN report on urbanisation.

India's urban vs rural population



P: projected

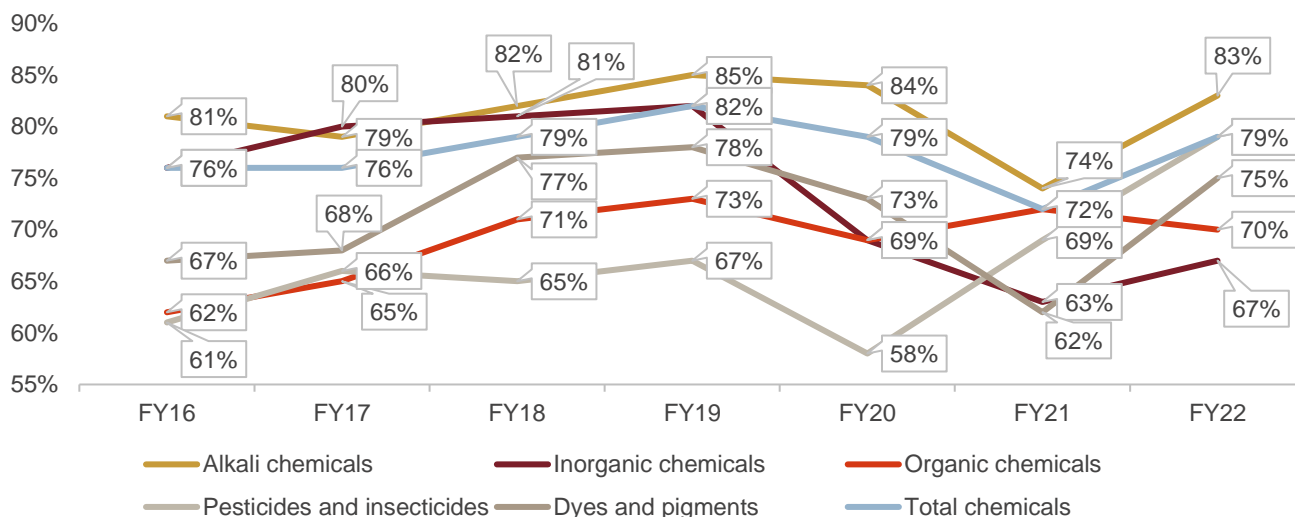
Source: World Urbanization Prospects: The 2018 Revision, UN, CRISIL MI&A

People from rural areas move to cities for better job opportunities, education, and quality of life. The entire family or only a few individuals (generally an earning member or students) may migrate, while the other members continue to live in their rural home.

2.8 Indian chemical sector expected to grow 1.5x by 2025

India is the world's sixth-largest chemical manufacturer, and accounts for 3.4% of worldwide chemical production. The Indian chemical industry was valued at \$178 billion in 2019 and is expected to grow to \$304 billion by 2025. The country's chemical sector is extremely diverse, with over 80,000 products, over 2 million people employed and a strong foundation for innovation because of a network of 200 national laboratories and 1,300 research and development (R&D) centres.

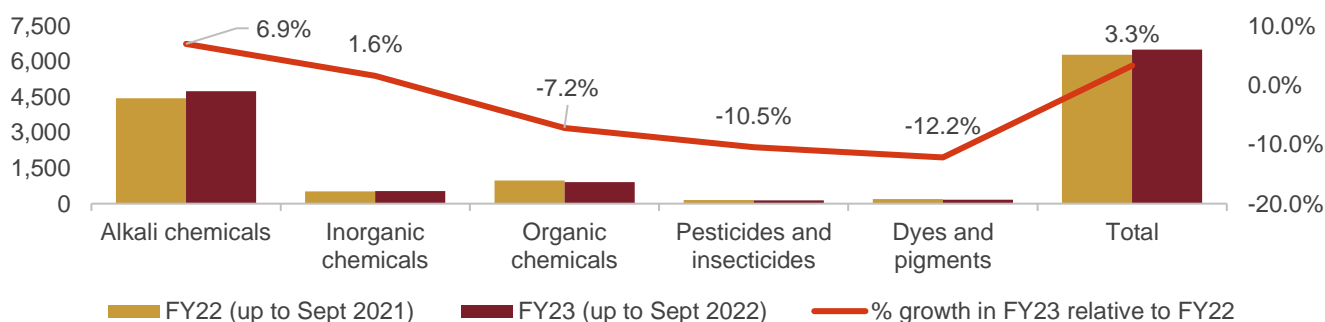
Figure 8: Capacity utilisation for major chemicals



Note: Based on master production records (MPRs) received by the department of Chemicals and Petrochemicals from manufacturers under large- and medium-scale units only

Source: Department of Chemicals and Petrochemicals

Figure 9: Production of major chemicals ('000 MT)



Note: Based on MPRs received by the department from manufacturers under large- and medium-scale units only

Data for fiscal year (FY)

Source: Department of Chemicals and Petrochemicals

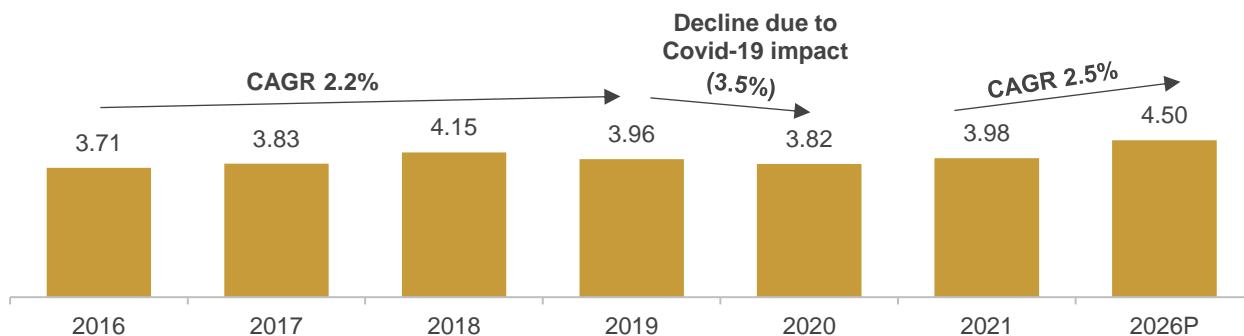
Production of major chemicals viz. alkali chemicals, inorganic chemicals exhibited increase while organic chemicals, pesticides & insecticides, and dyes & pigments exhibited decrease during the period compared to the last fiscal year.

2.9 PLI scheme for chemicals

The Department of Chemicals and Petrochemicals (DCPC) has identified around 100 chemicals / intermediates imported in large value, and these chemicals are used in manufacturing products that have substantial export potential. These 100 chemicals are proposed to be supported under the production linked incentive (PLI) scheme for the chemical sector. The proposed PLI scheme aims at incentivising domestic production of intermediates and raw materials for agrochemicals, dyestuffs, and pharmaceuticals with emphasis on domestic value-addition. While the PLI scheme for basic chemicals has not been introduced yet, the government has introduced PLI schemes cumulatively worth ~Rs. 21,940 crores as incentives for manufacturing of Key Starting Materials (KSMs) / Drug Intermediates (DIs), Active Pharmaceutical Ingredients (APIs) and other products in India. In February 2022, the Minister of Chemicals and Fertilizers said the government is planning to announce a PLI scheme for the chemical sector to promote domestic production and exports and solve the trade deficit problem.

3 Global chemical and speciality chemical industries

Figure 10: Global chemical industry size (\$ trillion)

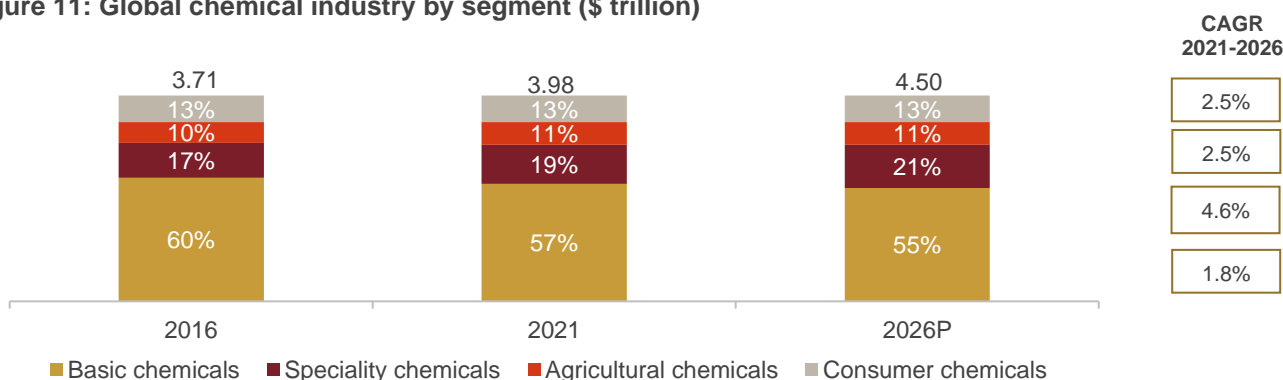


P: projected | Data for each calendar year

Note: Industry size excluding pharmaceuticals

Source: CRISIL MI&A Consulting

Figure 11: Global chemical industry by segment (\$ trillion)



P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

3.1 India’s positioning in the global chemical industry

As of 2020, the Indian chemical industry had a share of ~3% in the global chemical industry. It is ranked sixth at the global level and fourth in Asia. The country ranks eighth in global export of chemicals (excluding pharmaceutical products) and seventh in global import of chemicals (excluding pharmaceutical products).

Table 7: Chemical exports

Exporters Regions/ countries	Exports (\$ bn)	Share in world exports (%)		
		2005	2010	2021
EU	1,263	50.0%	46.0%	45.6%
US	270	10.9%	11.2%	9.7%
China	260	3.2%	5.2%	9.4%
Switzerland	144	4.0%	4.3%	5.2%
South Korea	101	2.5%	2.9%	3.6%
Japan	95	4.8%	4.6%	3.4%
UK	70	5.2%	4.3%	2.5%

Exporters	Exports (\$ bn)	Share in world exports (%)		
Regions/ countries	2021	2005	2010	2021
India	62	1.0%	1.4%	2.2%
Singapore	60	2.4%	2.3%	2.3%
Saudi Arabia	46	1.0%	1.3%	1.6%
Above 10	2,371	85.0%	83.4%	85.6%

Source: World Trade Organization (WTO Statistical Review, 2022)

Table 8: Chemical imports

Exporters	Imports (\$ bn)	Share in world imports (%)		
Regions/ countries	2021	2005	2010	2021
EU	1,038	41.4%	37.9%	36.2%
US	329	11.4%	10.1%	11.5%
China	262	6.7%	8.5%	9.2%
Japan	88	3.3%	3.5%	3.1%
UK	81	4.7%	4.0%	2.8%
India	78	1.2%	2.0%	2.7%
South Korea	65	2.1%	2.3%	2.3%
Brazil	64	1.3%	1.8%	2.2%
Switzerland	62	2.3%	2.1%	2.2%
Canada	62	2.8%	2.4%	2.2%
Above 10	2,130	77.1%	74.6%	74.4%

Source: World Trade Organization (WTO Statistical Review, 2022)

The size of the Indian chemical industry, excluding fertilisers and pharmaceuticals, was \$115-120 billion in fiscal 2021. Including fertilisers and pharmaceuticals, it was \$160-180 billion.

3.2 Global speciality chemical market to log 4-5% CAGR by 2026

Speciality chemicals are low-volume, high-value chemicals with specific applications classified based on end-user industries. They can be single-chemical formulations or entities whose composition affects how the end-product performs and is processed. The major distinction between speciality chemicals and commodity chemicals is that speciality chemicals are produced through extensive R&D and typically are synthesized using multiple step reactions as compared to one or two steps in the case of commodity chemicals. A speciality chemical has only one or two primary applications, whereas a commodity chemical may have hundreds of varied applications. These high-value compounds are created via speciality chemistry and are employed in a variety of essential goods for consumers and business, including medications, agricultural chemicals, and performance chemicals. In the speciality chemical industry, custom synthesis is a common service provided to customers.

Table 9: Comparison between commodity and speciality chemicals

Parameters	Commodity chemicals	Speciality chemicals
Type	Single basic chemicals; starting materials for the chemical industry, standardized product	Formulations of chemicals containing one or more fine chemicals as active ingredients

Parameters	Commodity chemicals	Speciality chemicals
Sub-categories	Petrochemicals, basic chemicals, heavy organic and inorganic chemicals (ammonia, chlorine, sulphuric acid, also includes lead-based products – lead stabilizers), large volume monomers, commodity fibres, and plastics	Adhesives, agrochemicals, biocides, catalysts, dyestuffs and pigments, enzymes, electronic chemicals, flavours and fragrances, food, and feed additives, speciality additives (includes calcium zinc, other mixed metal PVC stabilizers)
Pricing indications	Rs 30-150/kg	Rs 200-800/kg for usual speciality chemicals, with potential for significantly higher per kg pricing for niche products
Production	High volume production (in thousand ton/year); mass produced in continuous-process plants, using standardised reactions	Produced in limited quantities (10-500 ton/year); blended in customised batches
Manufacturing steps	Limited steps (1 or 2)	Multiple steps (2 or more); for synthesis of intermediates and APIs, steps can range between 5 and 20
Usage	Based on their versatility as raw materials	Based on specific functionality

Source: CRISIL MI&A Consulting

Barriers to entry in the speciality chemical industry are typically high. The specialised nature of products leads to significant differentiation. Substantial R&D requirements, technical know-how, capital intensity service capabilities, customer relationships, and engineered or regulated specifications also create important barriers to entry. Although these barriers are not homogeneous across the industry, most speciality chemical companies enjoy the benefits of one or more of them.

The speciality chemicals industry was valued at \$750-770 billion at the global level in 2021. The segment clocked 3-4% Compound annual growth rate (CAGR) over 2016-21. Agrochemicals and performance chemicals contribute the highest to the global speciality chemical revenue pie, accounting for 8-10% share each in 2021. The use of agrochemicals is rising because of increasing demand for agro products, led by population growth and improving propensity to buy owing to rapid industrialisation globally.

Global speciality chemical industry classification (2021)

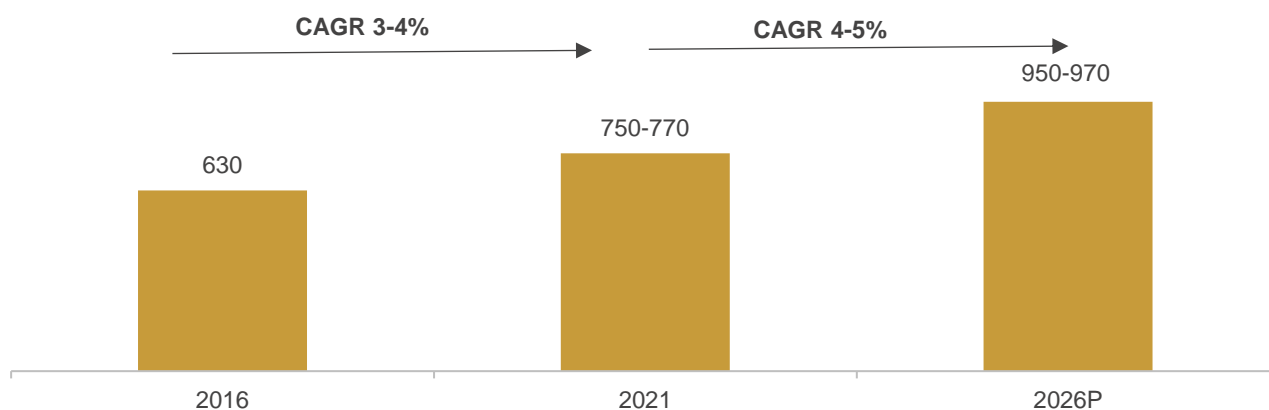
Speciality chemical classification	(% share in global market)
Agrochemicals	8-10%
Performance chemicals (includes multiple sub-segments)	8-10%
Construction chemicals	7-8%
Home and personal care chemicals	6-7%
Electronic chemicals	6-7%
Dyes and pigments	6-7%
Flavours and fragrances	5-6%
Polymer and plastic additives	4-5%
Food additives	4-5%
Pharma intermediates	4-5%
Textile chemicals	3-4%
Speciality coatings	3-4%
Oilfield chemicals	3-4%
Others	18-33%

Note: The performance chemical segment includes various sub-segments, such as antioxidants, anti-wear additives, flotation agents, solvents, surfactants, emulsifier, solvents, and chemical intermediates

Source: CRISIL MI&A Consulting

In 2020, the global speciality chemicals space declined 3-4% on-year because of the outbreak of Covid-19. However, the segment is estimated to have recovered in 2021. Between 2021 and 2026, the market is expected to grow at 4-5% CAGR to \$950-970 billion.

Figure 12: Global speciality chemical market size (\$ billion)



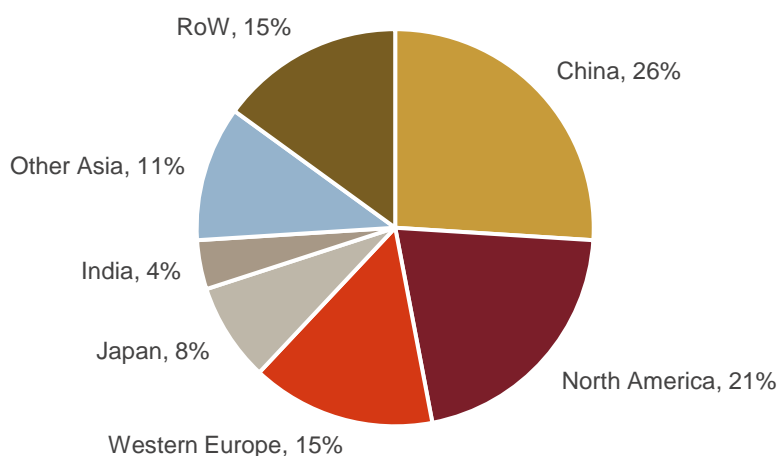
P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting

3.3 APAC – key contributor to global speciality chemical market in 2021

Developed countries (particularly the US) and emerging countries in Asia-Pacific (APAC) have seen a significant shift in the speciality chemical industry in the past two decades. This has mainly been due to stricter environmental norms in western countries, coupled with cost advantages enjoyed by companies in emerging markets in terms of logistics and labour. The shift is also because companies are relocating closer to demand centres and optimising their supply chains. In 2021, APAC accounted for majority of the global speciality chemical market, with a share of 48-50%, followed by North America and Western Europe.

Figure 13: Market share of key countries in speciality chemicals in 2021

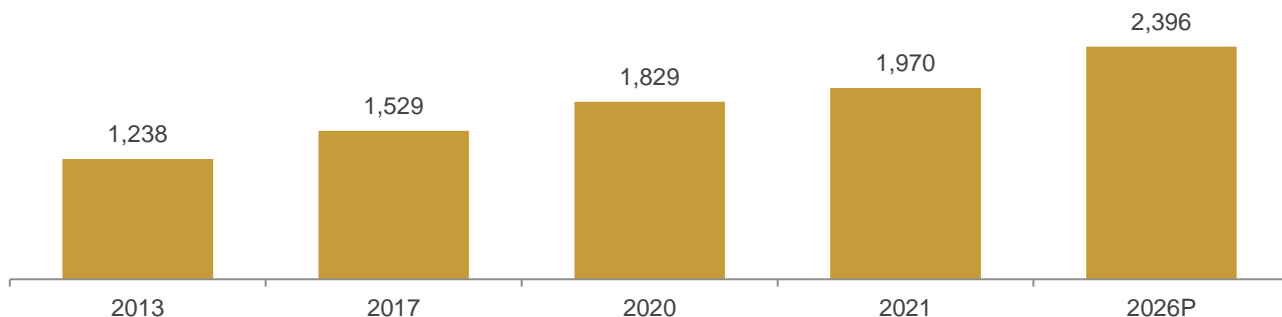


Source: CRISIL MI&A Consulting

3.4 China's chemical industry performance

Figure 14: Growth of China's chemical industry (\$ billion)

CAGR: 2013-2021: 6.0%
 CAGR: 2021-2026P: 4.0%



P: projected | Data for each calendar year

Source: CRISIL MI&A Consulting, Cefic (European Chemical Industry Council)

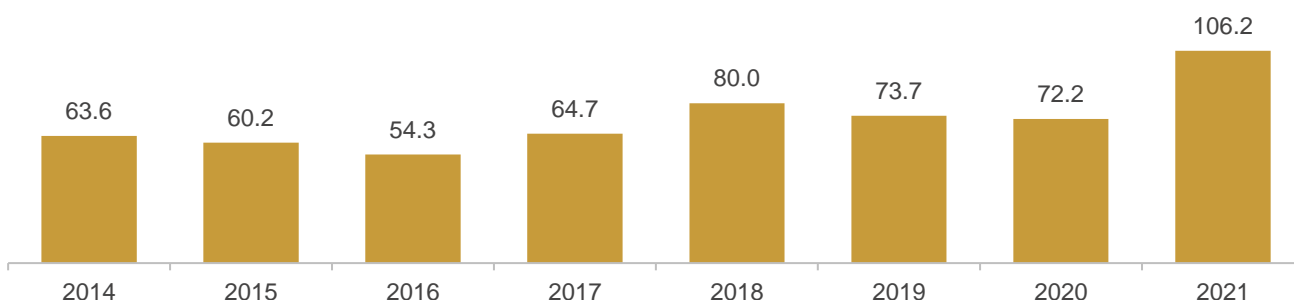
The Chinese chemical industry logged 6% CAGR over 2013-21. The industry is expected to clock a relatively slower CAGR of ~4% over 2021-26. Chemical demand growth is expected to taper in the consumer goods and electronics industries. Meanwhile, the automotive sector is expected to drive demand.

3.5 China's speciality chemical market is eroding

China's speciality chemical market has been on a downtrend in recent years, primarily because of environmental norms introduced by the government which led to the closure of several chemical plants as well as recent global geo-political tensions with the US and most corporates either planning or in the process of implementing supply chain diversification strategies.

The Chinese government started implementing stricter environmental protection norms from January 2015 to control pollution and has imposed strict penalties on polluting industries, including chemicals. As a result, capital and operating expenditures of chemical companies are rising, making the output less competitive in the export market. China's chemical exports have been on a downtrend since 2015. In 2017, ~40% of the chemical manufacturing capacity in China was temporarily shut down for safety inspections, with over 80,000 manufacturing units charged and fined for breaching emission limits. While exports rose in 2017 and 2018, as most plants restarted production, the trend has again turned south over the past two years. Domestic demand is also declining because of slowing economic growth. China's economy is expected to grow at a relatively slow pace in the coming years, resulting in reduced domestic demand.

Figure 15: Trend in China's chemical exports (\$ billion)



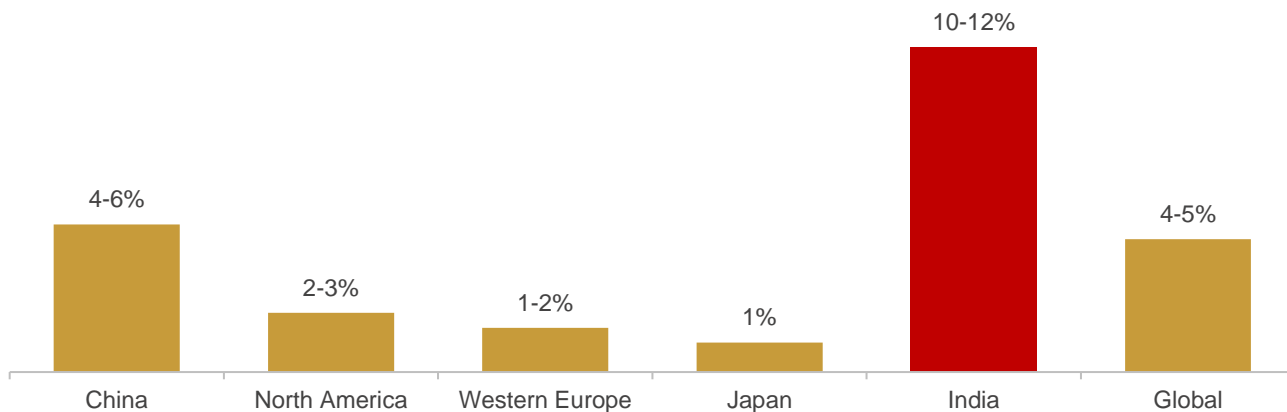
Note: Data for each calendar year

Source: UN Comtrade. Export of goods under HS codes 28 and 29 considered

3.6 Indian market expected to grow sharply as compared to other regions

By region-wise demand, India's speciality chemical industry is expected to post 10-12% CAGR over 2021-26 owing to rising demand from end-user industries, along with tight global supply on account of stringent environmental norms in China. In contrast, markets such as the North America, Europe and Japan are expected to clock less than 3% CAGR over the next five years because of industry saturation in these regions. China's speciality chemical industry saw historic growth rates of ~20% and above until 2013, driven by a low-base effect. It exhibited a moderate CAGR of 9-10% over 2013-21 and is expected to witness a relatively slow CAGR of 4-6% over 2021-26.

Figure 16: Region-wise growth in speciality chemicals (2021-26, CAGR)

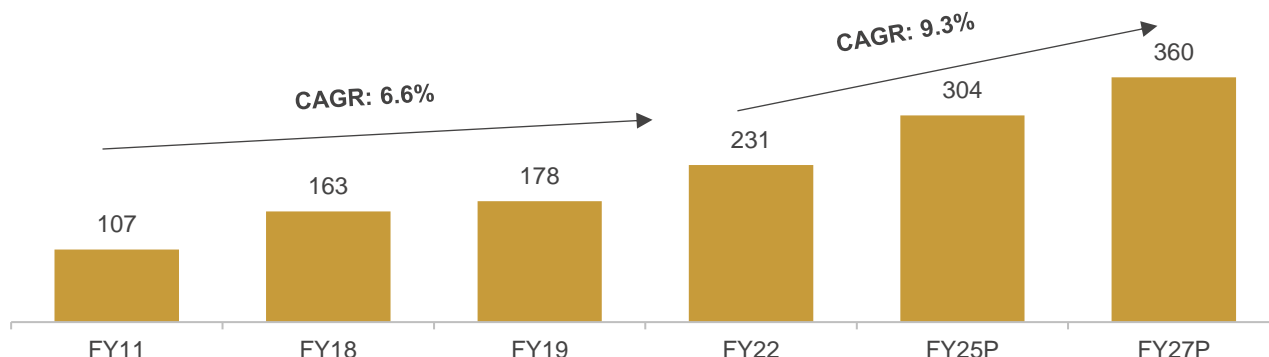


Source: CRISIL MI&A Consulting

4 Indian chemical and speciality chemical industries

4.1 Indian chemical industry

Figure 17: Indian chemical industry development (\$ billion)



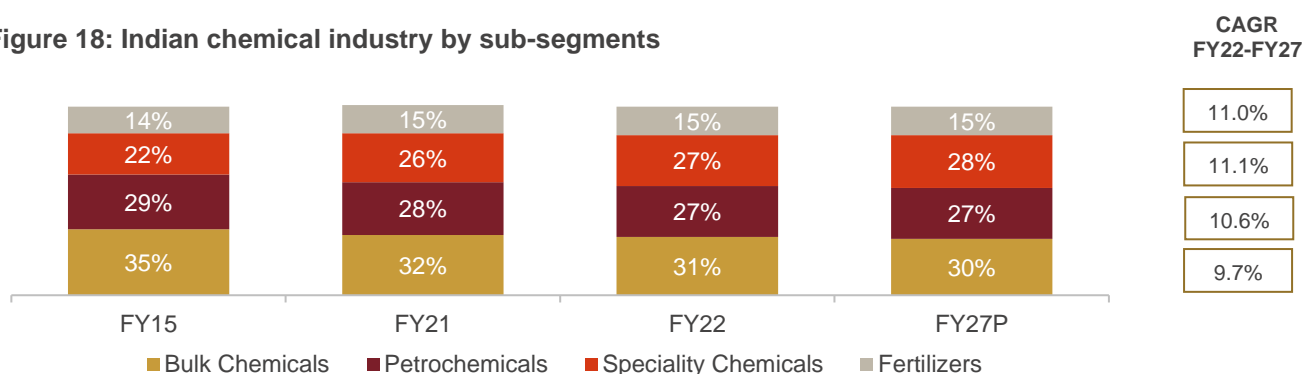
Note: Market size including (Biotech, Pharmaceuticals), Market size is based on consumption

P: Projected

Source: Department of chemicals and petrochemicals

The Indian chemical industry is a key constituent of the country's economy, accounting for 2.28% of the GVA (including pharmaceuticals) for all economic activities in fiscal 2020 compared with 2.23% in fiscal 2015. In 2020, it ranked sixth in the world in terms of revenue (excluding pharmaceuticals) and accounted for 2.7% of the global chemical industry compared with 2.5% in fiscal 2010. The Indian chemical industry is expected to double at 9.3% CAGR over fiscals 2019-25.

Figure 18: Indian chemical industry by sub-segments



Note: Segments excluding Pharmaceuticals

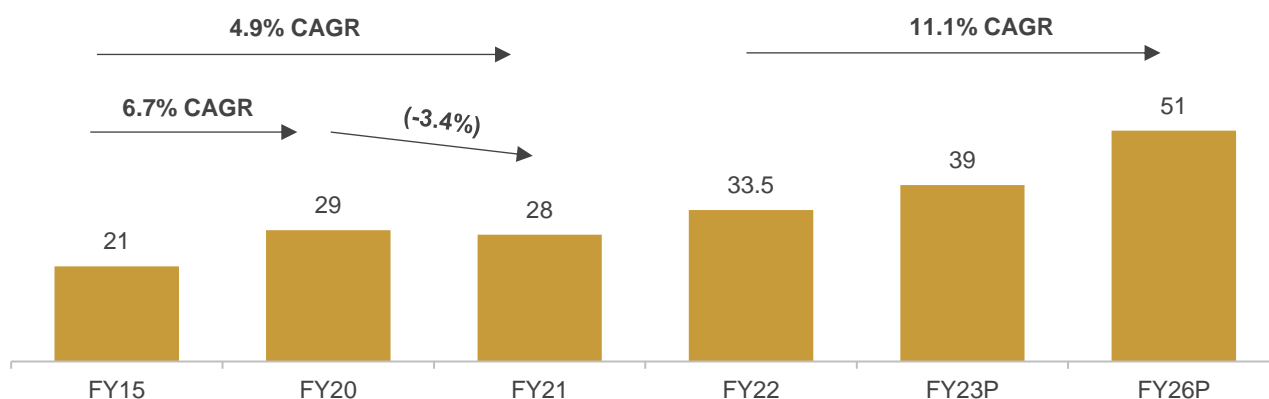
P: Projected

Source: CRISIL MI&A Consulting

4.2 Indian speciality chemical industry

The Indian speciality chemicals industry, accounting for ~26% of the overall chemicals industry (excluding pharmaceuticals), was worth \$29 billion in fiscal 2020. The industry expanded at 6.7% CAGR over fiscals 2015-20, driven by an increase in domestic offtake from various end-user industries and rising exports. However, in fiscal 2021, the industry declined 3.4% on-year because of a slowdown in economic activity and the consequent decline in demand from end-user industries. The industry exhibited recovery in fiscal 2022 with an estimated worth of \$33.5 billion. The Indian speciality chemical industry is expected to reach \$51 billion by fiscal 2026, growing at 11.1% CAGR over 2022-26.

Figure 19: Indian speciality chemicals industry's trajectory (\$ billion)



P: Projected

Note: Market size is based on consumption

Source: CRISIL MI&A Consulting

Table 10: Major sub-segments within the speciality chemicals market (value terms) in fiscal 2022

Segments	Market value (\$ billion)	Market share %
Dyes and pigments	5.36	16.0%
Paints and coatings	4.52	13.5%
Agrochemicals	4.86	14.5%
Speciality polymers	2.85	8.5%
Plastic additives	1.34	4.0%
Home care surfactants	1.34	4.0%
Construction chemicals	1.01	3.0%
Textile chemicals	1.01	3.0%
Flavours and fragrance	0.67	2.0%
Water chemicals	0.67	2.0%
Cosmetic chemicals	0.67	2.0%
Paper chemicals	0.67	2.0%
Others	8.38	25.0%

Source: CRISIL MI&A Consulting

Note: CRISIL MI&A Consulting considers personal care ingredients, polymer additives, water chemicals, textile chemicals, construction chemicals, surfactants, and flavours and fragrances as speciality chemical categories.

The speciality chemicals industry presents significant entry barriers, including customer validation and approvals, expectation from customers for process innovation and cost reduction, high quality standards and stringent specifications, as well as various client and regulatory approvals that are required to be obtained.

4.3 Favourable global factors

China, a major player in commodity chemicals, has seen reduced focus on speciality chemicals. China's speciality chemicals market has seen a downturn in recent years due to various factors. Most prominent being the introduction of stringent environmental norms, which has led to the shutdown of several chemical plants. Also, the Chinese government has mandated the construction of compulsory effluent treatment plants and imposed green tax on the chemicals industry to combat pollution. This coupled with increasing wage costs are pushing the capex and opex costs upwards, making Chinese chemical companies less competitive in the export market. Going forward,

these factors are expected to play out in favor of India's speciality chemicals industry, since exports will trend up over the next few years.

India is well-positioned to drive growth in the speciality chemicals industry, given its abundant supply of labour, land, feedstock, and established legal and regulatory framework. Indian companies with strong safety, health and environment measures, robust R&D and project management, and integration are well-poised to leverage opportunities in this space.

4.4 Key growth drivers for the Indian chemicals industry

- Per capita consumption of chemicals in India is lower compared with western countries. Hence, there is considerable scope for new investment
- A large population, huge dependence of the domestic market on agriculture, and strong export demand are the industry's key growth drivers
- The shift in the geopolitical landscape and global supply chain preference from China can provide India with a platform for converting challenges into opportunities
- The domestic market has significant growth potential with rising GDP and purchasing power
- World-class engineering and strong R&D capabilities

5 Overview of PVC Stabilizers

5.1 Introduction to PVC stabilizers

The third most widely produced synthetic plastic polymer after polyethylene (PE) and polypropylene (PP), polyvinyl chloride (PVC) comes in two basic forms: rigid and flexible. PVC is used in construction applications such as pipes, doors, and windows, as well as in the packaging, automotive, household and furniture, and medical sectors.

PVC stabilizers are one of the most important additives used in the manufacturing of PVC (polyvinyl chloride) to avoid the decomposition of PVC during the heating process. During its manufacturing, PVC releases hydrochloride, which further decomposes it and hampers its structure. Thus, lead, mixed metals, tin, and organic PVC stabilizers are used to stop the chain reaction of decomposition. It is also used to improve PVC's resistance to sunlight, weathering, and heat aging.

PVC stabilizers are complex mixtures of several ingredients. Each of it has at least one special function for processing of PVC products like pipe, profiles, cable, and flooring. In most cases, stabilizers are blends of single additives that complement each other, often increasing the joint effect (synergism) and sometimes counteracting each other (negative synergism). In most instances stabilizer blends are required to achieve the optimal PVC processing performance and the best properties for the final product. Factors such as the process technology involved, the technical requirements of the PVC product, regulatory requirements, and cost influence the choice of the stabiliser used.

5.2 PVC stabilizer usage and application

PVC stabilizers are added either directly into PVC or in combination to prevent oxidation, chain scission, uncontrolled recombination, and cross-linking reactions caused by photooxidation. Essentially, they protect PVC from the harmful effects of extreme temperatures and ultraviolet radiation.

It is widely used in major applications of PVC such as pipes and fittings, rigid and semi-rigid films, window profiles, wires and cables, and other applications such as medical and consumer goods. The PVC pipes and fittings are widely used in the various applications such as irrigation, building & construction, water supply, sewage management and others. The demand of PVC pipes and fittings market is rising as the replacement of existing pipes and fittings made of iron and steel due to several disadvantages such as corrosion, heavy, and high cost of steel and iron pipes and fittings.

5.3 PVC stabilizer categorization by chemistry

Lead based stabilizers

Lead stabilizers are traditional stabilizers known for their excellent heat stability and cost effectiveness. Lead stabilizers are widely used in PVC pipes, PVC foam boards, and other rigid PVC applications. The use of lead stabilizer is now discouraged because lead is considered a hazardous element to health. Types of lead stabilizers are tetra-basic lead sulphate, tri-basic lead sulphate, di-basic lead phosphite, di-basic lead phthalate, di-basic lead stearate, neutral lead stearate.

Low lead / hybrid stabilizers

Hybrid stabilizers are alternative to lead stabilizers which has low lead content comparative to lead stabilizers. These stabilizers are known as low lead stabilizers. Hybrid stabilizers are blend of lead and organic stabilizers. So, these stabilizers are less harmful to the environment and health than conventional lead stabilizers. Despite low lead content, Hybrid stabilizers gives excellent heat stability.

Non lead based stabilizers

Mixed metal stabilizers

This type of stabilizers includes cadmium-barium (Cd-Ba), barium-zinc (Ba-Zn) and calcium-zinc (Ca-Zn) stabilizer systems. Developed economies have phased out cadmium-based stabilizers. Calcium-zinc stabilizers are most preferred as they are heavy metal-free stabilizers and are considered safe for health and the environment. Ca-Zn stabilizers have applications in both rigid and soft applications. It is used in PVC cable insulation, PVC rigid and flexible pipes, foam boards, profiles, sheets, etc.

Tin metal-based stabilizer

Tin stabilizers suitable for wide applications of PVC. It's known for its excellent heat stability and maintaining the transparency of the product. Tin stabilizers gives very good early colour and long-term stability to PVC. Tin stabilizers used in PVC food packaging material as they are considered as safe for health and environment.

Organic based stabilizers (OBS)

OBS stabilizers contain no heavy metals—lead, barium, zinc, tin, or cadmium—although some versions do contain calcium. Organic heat stabilizers include alkyl/aryl phosphites, epoxy compounds, beta-diketones, amino crotonates, nitrogen heterocyclic compounds, organosulfur compounds

5.4 PVC stabilizer market trend

The stabilizer market is currently moving toward the design, manufacture, and use of efficient, effective, safe, and more environmentally benign chemical products. In the past, heavy metals – particularly lead and cadmium - have been the main source of stabilizer compounds. Today, the use of these metals is being phased out in many industries because of the occupational health and environment hazard associated with processing these metals.

US and EU shifted from lead stabilizers to alternatives such as calcium zinc and organotin stabilizers

The US phased out lead stabilizers during 1950s in favor of organotin stabilizers, while REACH regulations have changed the stabilizer landscape by phasing out lead use in Europe and restricting tin, thus driving the use of alternatives such as calcium zinc stabilizers, tin, and organic stabilizers. There is no more consumption of lead-based stabilizers in EU-28 as from 1 January 2016.

In Asia, the use of lead stabilizers is declining, and recent legislation in India will hasten the process

Japan has moved away from the use of lead stabilizers in PVC pipe, replacing them with calcium-zinc powder systems. In China, lead salt stabilizers are restricted or banned in certain PVC products (mostly toys, children's products, food and water contact materials, and medical devices having direct contact with human blood). Although Chinese national standards banned lead stabilizers in PVC pipes used for water supply in 2006, lead remained the stabilizer of choice in China's PVC pipe due to a lack of government enforcement. However, lead usage in China has exhibited a declining trend over the last decade with the gradual implementation of policies.

In India, lead stabilizers continued their dominance while the usage of alternatives was lower owing to slower growth, but the trend is expected to reverse going forward due to the newer regulations notified by Ministry of Environment and Forests (MoEF) in 2022. The ministry announced standards on May 4, 2022, for PVC pipes and fittings used in potable water supplies, agricultural use, drainage, and sewage systems. The regulations state that the manufacturers shall be prohibited from using lead or lead compounds as stabilizers in the manufacturing of PVC pipes and fittings and specified the timeline for implementation. The prohibition on using lead as a stabilizer takes effect one year after notification for the use of PVC pipes and fittings in potable water supply, three years for the use of PVC pipes and fittings in agriculture, and four years for the use of PVC pipes and fittings in drainage and sewerage systems. The other Asian markets are still using lead-based stabilizers, but the use of calcium-zinc and others are growing.

Lead based stabilizers usage is declining while usage of non-lead alternatives is gradually increasing

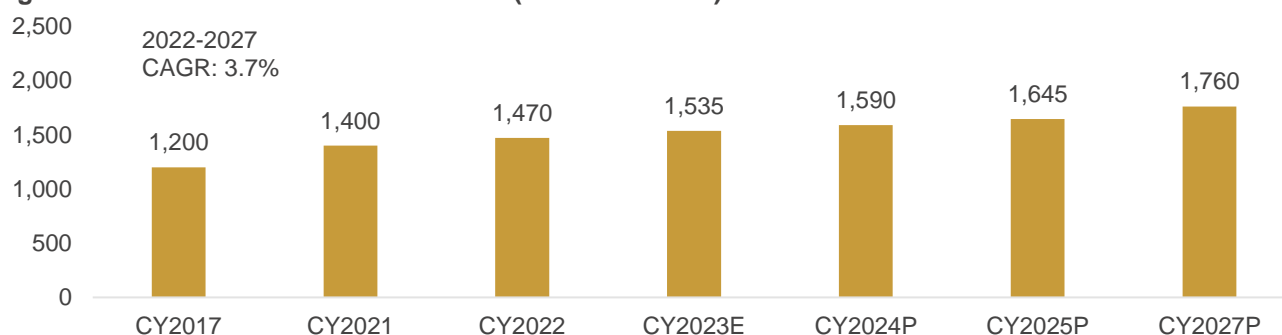
In Africa and the Middle East region, lead-based stabilizers are being phased out, while the usage of non-lead stabilizers such as calcium-zinc and other chemistries is gradually increasing, driven by a growing focus on sustainability amongst industry stakeholders. In South Africa, members of Southern African Plastic Pipe Manufacturer's Association (SAPPMA) have phased out lead stabilizer usage.

6 Global PVC stabilizer market assessment

6.1 Global PVC stabilizers market

The global PVC stabilizer market is estimated to grow at 4% CAGR from 1.47 million tons in 2022 to 1.76 million tons by 2027. The global market size by value is estimated at \$5.2 billion in 2022

Figure 20: Global PVC stabilizers market (Thousand tons)



E: Estimated P: Projected

Data for each (CY) calendar year

Source: CRISIL MI&A Consulting

6.2 Global PVC stabilizer market growth driver

Global PVC stabilizers market is predicted to grow during the projected period owing to the growth in demand for polyvinyl chloride (PVC) in the magnitude of industry verticals likewise automotive, construction, packaging, and electrical & electronics.

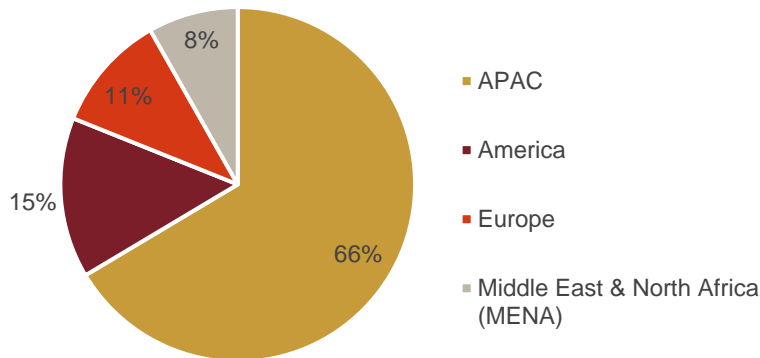
Demand for PVC stabilizers will be driven by global PVC demand

Global PVC demand is expected to grow at CAGR of 3.8% from ~48 million tons in CY2021 to ~58 million tons by CY2026. The global PVC market is anticipated to develop because of the growth in the building and construction sector, growing demand from the vehicle industry, rising demand for medical devices, and rising use of plastic film and sheets. Due to its low cost and water resistance, PVC material is increasingly in demand for consumer products such as furniture, apparel, footwear, and sportswear.

6.3 Market size by region

APAC accounts for the largest share globally, with 66% of the market. In Asia, China accounts for ~48% of the global market. India accounted for ~6% of the global market

Figure 21: Market size by region (CY2022, By volume)

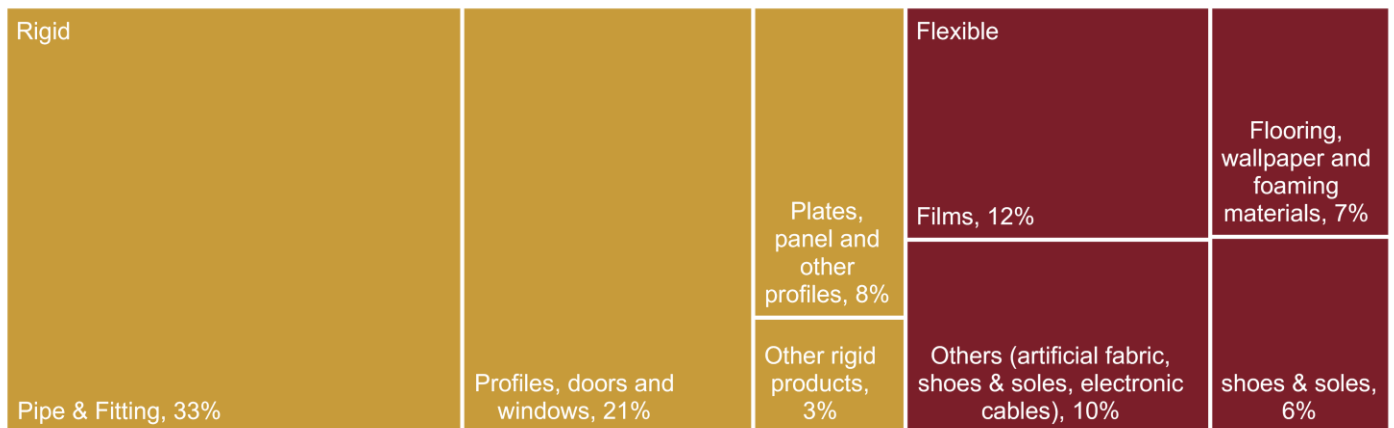


Source: CRISIL MI&A Consulting

6.4 Market size by application segment

Rigid products account for 65% of the overall application of PVC stabilizers, while flexible products account for 35%. In rigid products, pipes and fittings are the largest subsegment, accounting for 33%, followed by profiles, doors, and windows with 21%, whereas films are the largest subsegment within flexible product types.

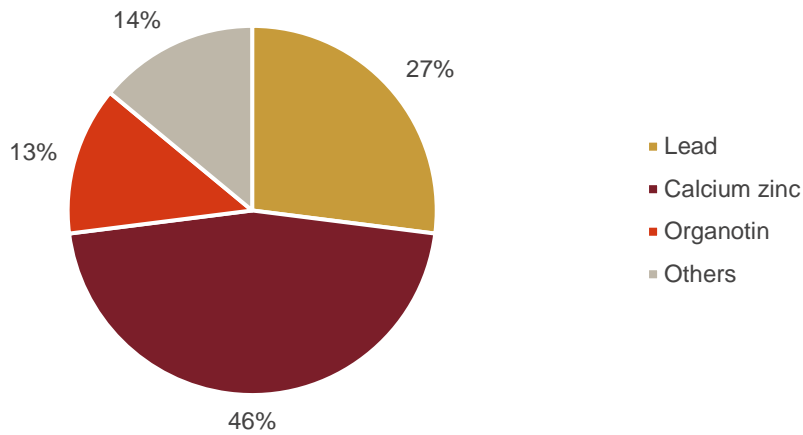
Figure 22: Market size by application (CY2022, By volume)



Source: CRISIL MI&A Consulting

6.5 Market Size by product type

Figure 23: Market size by product type (CY2022, By volume)



Note: Others include organic and miscellaneous types (including other mixed metal systems -barium / zinc / cadmium / potassium and others)

Source: CRISIL MI&A Consulting

6.6 Global player landscape

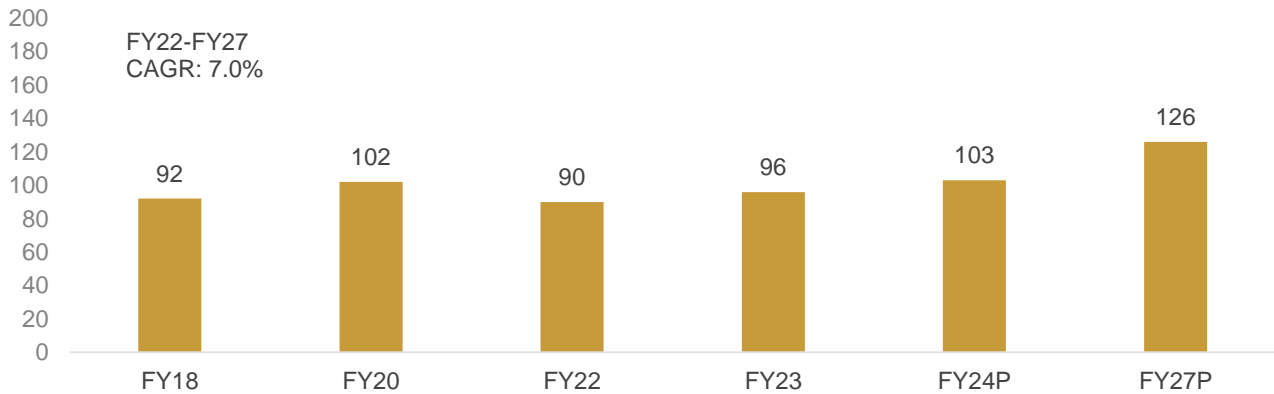
The global key manufacturers of PVC stabilisers include Akdeniz Chemson, Baerlocher, Valtris Speciality Chemicals, Hebei Jingxin Chemical Group, Reagens SpA, Sun Ace, PMC Group, and Guandong Winner New Material Technology. The top 10 manufacturers account for 40–45% of the market share by sales.

7 India PVC stabilizer market assessment

7.1 India PVC stabilizers market

India PVC stabilizer market is estimated at 90 thousand tons in FY22 which is expected to grow at 7% CAGR to reach 126 thousand tons by fiscal 2027. India market size by value is estimated at \$210 million in fiscal 2022.

Figure 24: India PVC stabilizers market development (Thousand tons)



P: Projected, Data for each fiscal year (FY)

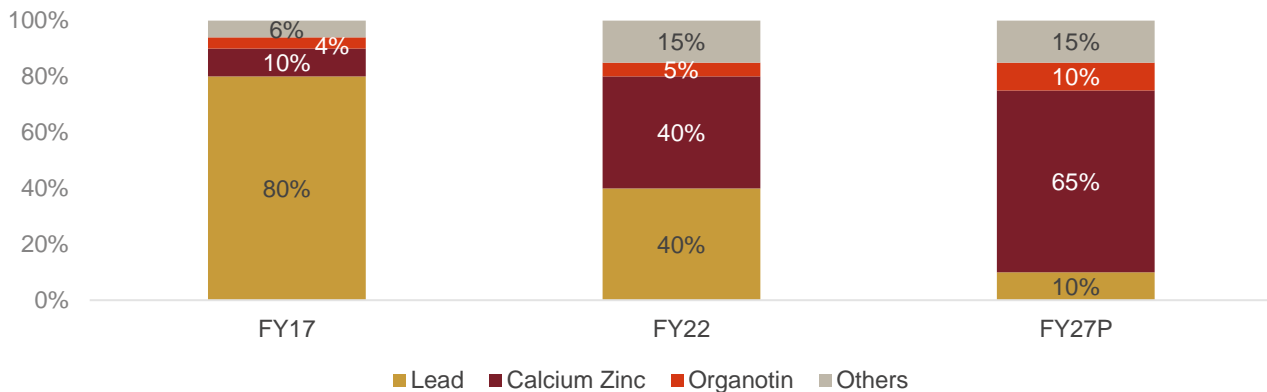
Source: CRISIL MI&A Consulting

Figure 25: India PVC stabilizers market by application (FY22, By volume)



Source: CRISIL MI&A Consulting

Figure 26: India PVC stabilizers market by product type (FY22, By volume)



Note: Other's segment include cadmium, barium, organic, liquid mixed metal, one pack (other than lead and calcium) and miscellaneous type stabilizer systems

P: Projected, Data for each fiscal year (FY)

Source: CRISIL MI&A Consulting

Lead share is expected to reduce significantly going forward because of the new regulations notified by Ministry of Environment and Forests (as mentioned in Section 5.4). As per new regulations, the usage of lead compounds is to be phased out completely for the manufacturing of PVC pipes and fittings used in potable water supplies, agricultural use, drainage systems, and sewage systems. The phase out of lead-based stabilizers would enable the increased usage of alternatives such as calcium zinc stabilizers and others.

7.2 India PVC stabilizers manufacturing landscape

India PVC stabilizers manufacturing landscape is characterized with top 3 manufacturers accounting for 50-55% of the market by value and balance is fragmented with large number of unorganized players. The top 3 manufacturers in India include Baerlocher India, Goldstab Organics and Platinum Industries Ltd. The top 2 players Baerlocher and Goldstab have cumulative market share of ~46% while Platinum Industries Ltd is at 3rd position in India having ~8% market share by sales in fiscal 2022. Platinum Industries have 36,000 tons of annual capacity includes PVC stabilizers, CPVC additives and lubricants.

Table 11: Capacity of top 3 manufacturers in India by sales

Manufacturer	Annual PVC stabilizer capacity – existing capacity (tons per annum)
Platinum Industries Ltd	36,000
Baerlocher India Additives	65,500
Goldstab Organics	60,000

Source: CRISIL MI&A Consulting

Entry of European manufacturer in Indian PVC stabilizers industry

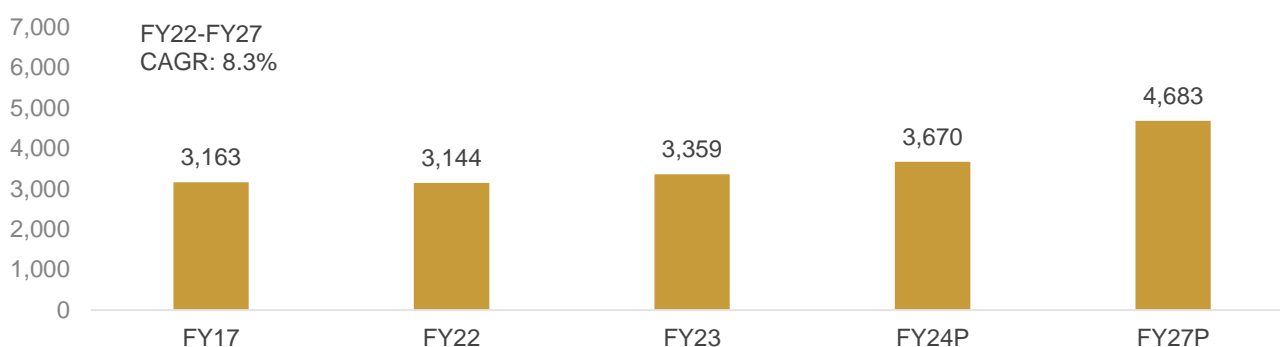
Reagens India Plastic Additives Private Limited (parent is Italy-based Reagens Group), established a factory in 2020 with an annual capacity of 42,000 metric tons for PVC stabilisers, while the overall annual capacity including other products such as lubricants and metal soaps is 59,000 metric tons. Reagens India Plastic Additives has started domestic sales but has yet to scale up sales compared to the top 3 manufacturers in India (Baerlocher India, Goldstab Organics, and Platinum)

7.3 Growth drivers for PVC stabilizers market

7.3.1 India PVC industry development and growth outlook

Domestic PVC demand is projected to increase in fiscal 2023 and grow over the next five years, primarily due to rising demand from the pipes and fittings segment. Over fiscals 2022 to 2027, CRISIL MI&A Consulting expects PVC demand to clock 8-9% compound annual growth rate (CAGR). Domestic utilization rate of the PVC industry rose to 93% in fiscal 2022 from 88% in fiscal 2021 owing to recovery in demand from the pipes and fittings segment. Over the next five years as well, operating rates of domestic PVC producers are expected to remain high despite capacity additions on account of healthy demand growth of 8-9% CAGR.

Figure 27: India PVC demand (Thousand tons) to record healthy growth over the next five years

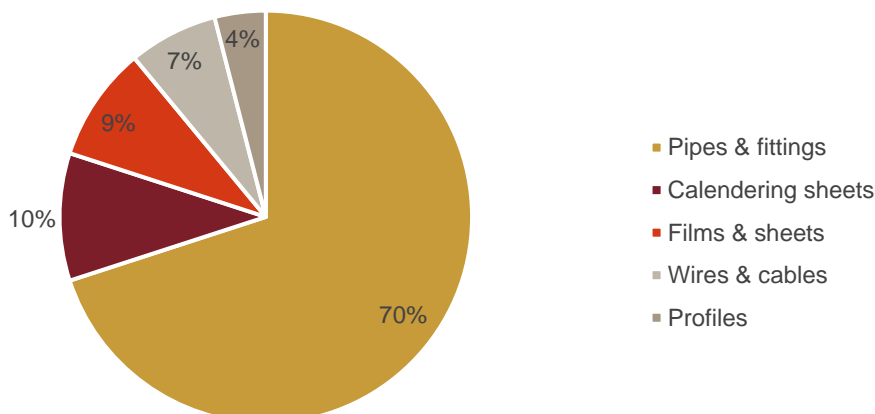


P: Projected, Data for each fiscal year (FY)

Source: CRISIL MI&A Consulting

7.3.2 India PVC demand by application segments

Figure 28: PVC demand by application segments (FY22)



Source: CRISIL MI&A Consulting

PVC Segment-wise offtake projections are as follows

- Pipes and fittings are projected to register 8.5-9.5% CAGR. Offtake will be supported by investment in the irrigation, water supply and sanitation segments, as well as continuing substitution of metal pipes with PVC. The government's focus on increasing irrigation in non-rainfed areas through the Prime Minister Krishi Sinchayee Yojana is expected to increase demand for PVC pipes as well.

- Films and sheets, and calendering, is projected to clock 8-9% CAGR, led by demand from consumer-driven sectors such as pharmaceuticals and packaging.
- Profiles, wires, and cables segment is expected to rise at 7.5-8.5% CAGR

7.3.3 Government initiatives to drive PVC demand

Plastic pipes are primarily used in irrigation and WSS (water supply and sanitation) projects. Investment in India's urban infrastructure is expected to grow at a robust pace, driven by government schemes along with WSS projects and metro construction in major Indian cities. Increase in budgetary allocation by state governments: Pradhan Mantri Krishi Sinchai Yojana (PMKSY) will focus on end-to-end solutions in the irrigation supply chain.

The major demand sources are public-sector projects undertaken by the central, state, and municipal-level bodies. Key growth drivers are:

Increased spending by state governments and municipal corporations to improve accessibility of water for an ever-increasing population; and

Heightened thrust, in the form of several central government-led schemes, to augment irrigation, urban infrastructure and real estate. Examples include:

- Irrigation - PMKSY (Pradhan Mantri Krishi Sinchayee Yojana)
- Urban infrastructure – WSS schemes such as Jawaharlal, Nehru National Urban Renewal Mission (JNNURM), AMRUT (Atal Mission for Rejuvenation and Urban Transformation), Swachh Bharat Mission, Smart Cities Mission
- Real estate – Housing for All scheme

Other than government schemes, demand will also be supported by an increase in private sector investments, primarily in the real estate sector. CRISIL MI&A Consulting expects demand for plumbing pipes to grow with the rise in the construction activity in metros as well as tier-II and tier-III cities to drive demand for plastic pipes and fittings.

Irrigation sector

Construction spends in irrigation projected to rise to Rs 4.3-4.5 lakh crore over fiscals 2023 to fiscal 2027 from Rs 3.2 lakh crore over the past five years (fiscal 2018 to 2022) owing to the push from state governments to increase irrigation penetration in states.

Launched in 2015-16, PMKSY is an umbrella scheme, providing central grants to the State Governments with an aim to enhance physical access of water on farm and expand cultivable area under assured irrigation, improve on-farm water use efficiency, introduce sustainable water conservation practices, etc. In fiscal 2016, the central government converged irrigation schemes under the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) to expand the area under cultivation. The key schemes converged are Accelerated Irrigation Benefits Programme (AIBP), Integrated Watershed Management Programme, On Farm Water Management, and Per Drop More Crop.

Urban infrastructure (excluding WSS)

Urban infrastructure includes construction-intensive mass rapid transit system (MRTS), bus rapid transit system (BRTS), smart cities, and related infrastructure development.

Metro projects

CRISIL MI&A Consulting estimates that construction spends on metro projects in India will increase 1.8-2 times to ~Rs 1.7 lakh crore over the Fiscals 2023-2027. Bulk of the metro projects are under construction and have achieved financial closure with the lockdown and migration of labour the only impediments in FY21 driving investments lower and a deferral of investments led to revival in fiscal 2022, while the momentum continued in 2023. Medium term growth in the sector would be led by the development of number of projects announced and under implementation by various state governments.

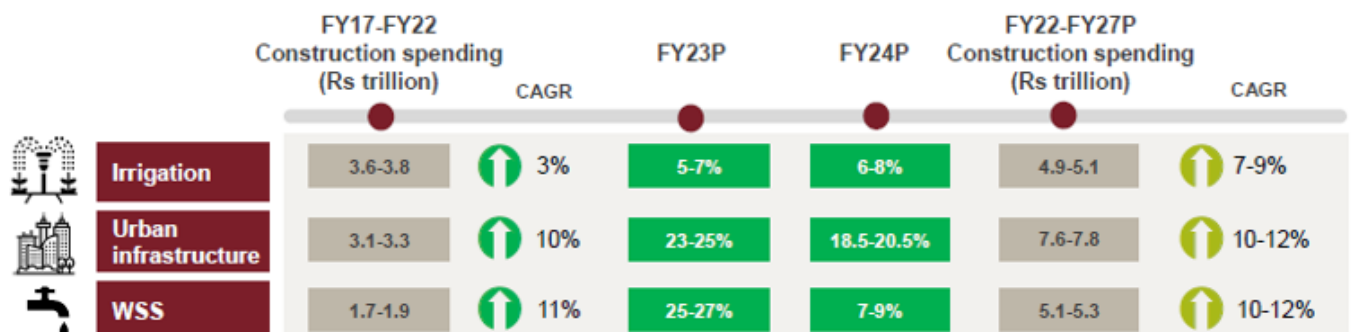
Smart Cities

To further push infrastructure spending, the government approved a budget of Rs 480 billion for the development of 100 smart cities over five years, beginning fiscal 2017. The focus is on adequate and clean water supply, sanitation, solid waste management, efficient transportation, affordable housing for the poor, power supply, robust IT connectivity, e-governance, safety and security of citizens, health, and education. Out of the 60 smart cities declared in rounds one and two and the fast-track round, only ~29 cities are seeing reasonable amount of activity. For the balance 40 cities selected in rounds three and four, tendering is at a very nascent stage for the newly formed special purpose vehicles (SPVs). Each smart city is required to form an SPV (special purpose vehicle) that will plan, appraise, approve, and release funds as well as implement, manage, operate, monitor, and evaluate development of the project. Once formed, the SPV will receive the first tranche of funding from the Centre. All the 100 selected smart cities have formed their SPVs and appointed project management consultants. All the 100 selected smart cities have formed their SPVs and appointed project management consultants. Based on the overall plans for the first 90 cities, investments are expected to be construction-intensive, as segments such as housing, roads, non-residential development, sewage systems, etc., will constitute a considerable portion of the total investments.

Water supply and sanitation (WSS) projects

Government schemes such as the Swachh Bharat Mission (SBM), Jal Jeevan mission and the National Mission for Clean Ganga (NMCG) are likely to boost WSS investments. On October 2, 2014, Prime Minister Narendra Modi launched SBM to focus on sanitation and accelerate efforts to achieve universal sanitation coverage. The overall capex for SBM (Rural and urban) for FY21 was 5,950 crores with revised estimates for FY22 at 8,000 crores and budgeted numbers for FY23 at 9,492 crores. In May 2015, the government replaced the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) with the Atal Mission for Rejuvenation and Urban Transformation (AMRUT), to focus on basic infrastructure services such as water supply, sewerage, storm water drains, transport, and development of green spaces and parks. The budgetary outlay for AMRUT in fiscal 2023 is Rs 7,300 crore while revised estimates for fiscal 2022 is Rs. 7,300 crores and spends in FY21 were 6,449 crores.

Figure 29: Urban infrastructure to lead demand growth over next five fiscals



P: Projected

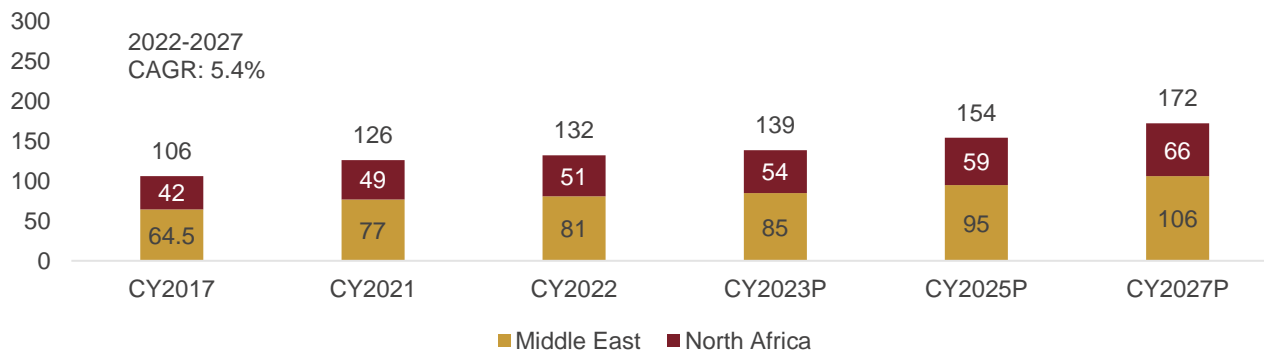
Source: CRISIL MI&A Consulting

8 Middle East and North Africa (MENA) PVC stabilizer market

8.1 MENA PVC stabilizers market overview

Middle East and North Africa region market size is estimated at 132 thousand tons in 2022 which is expected to increase at CAGR of 5.4% to reach 172 thousand tons by 2027.

Figure 30: MENA PVC stabilizer market (Thousand tons)



P: Projected, Data for each (CY) calendar year

Source: CRISIL MI&A Consulting

8.2 MENA player landscape

The manufacturing landscape is characterized with presence of marquee global manufacturers such as Baerlocher, Akdeniz Chemson, Galata Chemicals, Sun Ace Gulf and Plastay. Baerlocher, Akdeniz Chemson, Galata Chemicals, and Plastay have production facilities in Turkey while Sun Ace Gulf have production facility in Saudi Arabia. Saudi Arabia and Egypt are predominantly import-oriented markets with minimal domestic production.

8.3 MENA region by application

Figure 31: MENA region by application

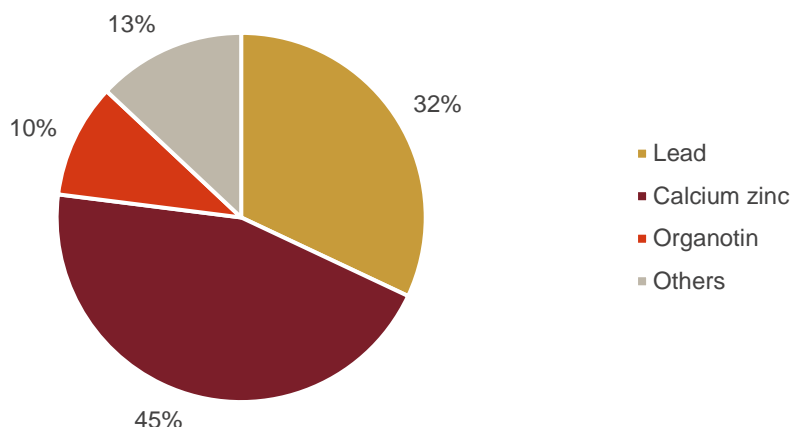
Major application includes pipe & fittings accounting for 68% followed by profiles, doors, and windows accounting for 10% of the market.



Source: CRISIL MI&A Consulting

8.4 Market Size by product type

Figure 32: Market size by product type (2022, By volume)



Note: Other's segment include cadmium, barium, organic, liquid mixed metal, one pack (other than lead and calcium) and miscellaneous type stabilizer systems

Source: CRISIL MI&A Consulting

8.5 MENA region growth drivers

The growing demand from the construction industry is one of the major factors driving the PVC stabilizer market. The construction sector has a promising outlook in the MENA region. Government initiatives such as Saudi Vision 2030, the UAE's Energy Strategy 2050, affordable housing initiatives launched by several countries, and the growing emphasis on modernization of water supply and irrigation infrastructure will drive investments in the residential, agriculture, energy, and utility sectors, as well as in infrastructure and commercial construction projects, thereby driving the demand for PVC, which in turn will drive consumption of PVC stabilizers during the forecast period.

Middle East

After couple of challenging years for the Middle East construction industry due to the impact caused by Covid-19 and other factors, contractors, suppliers, and consultants can now look forward to a return to growth and the prospect of rising project opportunities in 2023 and beyond. The pipeline of future project opportunities is vast, Saudi Arabia and the United Arab Emirates account for nearly 85% of the GCC's (Gulf Cooperation Council) planned future projects. Saudi Arabia is in the midst of developing a number of large-scale, complex and multi-purpose construction projects that aim to transform the wider economy. The country's game-changing giga-projects such as The Red Sea Resort, Neom, the Diriyah Gate, Amaala, King Salman Park and SEVEN entertainment districts will ensure that Saudi Arabia remains the hottest market in the region.

Africa

The construction industry is the largest and fastest-growing industry in Africa. Government financing, consortiums, and private investors collectively invest billions of dollars each year in this industry. Both public sector spending on infrastructure development projects and private sector investment in residential housing units and commercial buildings like shopping malls with retail outlets are the primary drivers of this rapid pace of expansion.

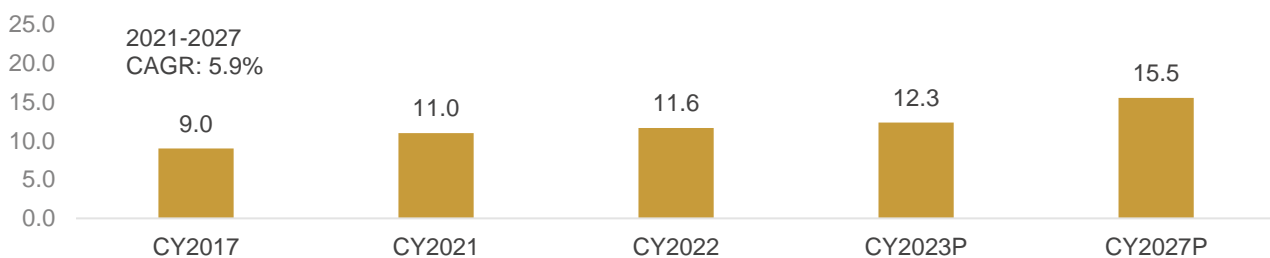
8.6 PVC stabilizers market for countries - Egypt, Turkey, and Saudi Arabia

Egypt

Egypt is considered as the African continent's market for plastic raw materials. PVC is manufactured by key manufacturers such as TCI Sanmar group and Egyptian petrochemicals company having cumulative capacity of 480 thousand tons. The annual PVC consumption of Egypt is 430-450 thousand tons. Egypt accounted for 8.7% of the MENA PVC stabilizers and ~22% of the African PVC stabilizer market in 2021. Egypt market size is estimated at 11 thousand tons in 2021 which is expected to increase at CAGR of 5.9% to reach 15.5 thousand tons by 2027.

Presently, the country PVC stabilizer demand is met through import dominated by countries such as Turkey, Iran, Saudi Arabia and India. The country does not have a manufacturing capacity of PVC stabilizer. Platinum aims to broaden its global reach by broadening its manufacturing capabilities. Keeping above in view the company want to expand its customer base through its subsidiary in Egypt.

Figure 33: Egypt PVC stabilizers market (Thousand tons)



P: Projected, Data for each (CY) calendar year

Source: CRISIL MI&A Consulting

Growth drivers for stabilizer industry

Government initiatives to propel construction sector which will in turn drive demand for PVC stabilizer

Egyptian construction industry is expected to grow to from 24 USD billion in 2022 to 31.6 USD billion by 2026. The Egyptian government announced plans to implement 45 major national and strategic infrastructure projects in the in the financial year 2022/23 including 10 traverse accesses on the Nile, completion of 1,000 kilometers of railway development and 47 new train stations. Egyptian government is presently in the process of implementation of "Housing for All Egyptian initiative" program which is aimed at resolving country's affordable housing problems. Under the program, the Egyptian government aims to build 500,000 housing units by 2025. Office spaces is expected to grow significantly in terms of amount of mixed-use sqm, as foreign companies resume expansion plans in Egypt after a covid-induced halt.

Expansion of water supply network to drive pipe demand, which would drive growth of stabilizer industry

Because of its arid climate, Egypt relies on irrigation for much of its agricultural activity. It has the largest area of irrigation among Nile Basin countries, most of which is from surface water. Egypt depends almost entirely on the Nile for fresh water and faces rising water scarcity for its population of 104 million. The government is investing in desalination plants, groundwater-extraction facilities, wastewater treatment plants and technologies for the reuse of treated water. The government intends to augment in a phase-wise manner its existing desalination capacity of less than 1 million cubic meters per day by setting up 39 desalination plants with a combined capacity to process 1.4 million cubic meters per day. Country's Housing Ministry unveiled a 30-year, five-phase plan that would provide another 6.4 million cubic meter/day of potable water by 2050.

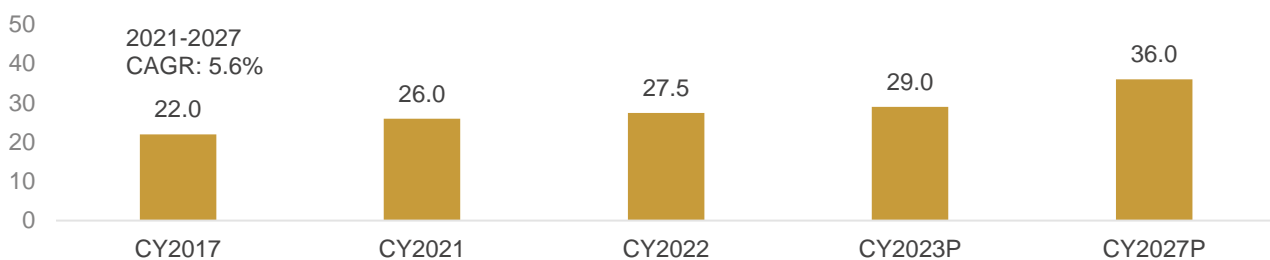
Investment in the food & pharma is fueling the growth of the packaging, which will aid stabilizer industry

Egypt is ranked the 3rd largest market for packaging and wrapping products in the Middle East and North Africa. Marquee packaging manufacturers such as Huhtamaki, Uflex, have production facilities in Egypt. The packaging sector is expected to be driven by growing demand from pharma and food sectors. Egypt established its largest pharmaceutical city in April 2021; Gypto Pharma City, spread across 180,000 square meters, is the largest in the Middle East. The new city located in Al-Khankah aims to increase cooperation between the state and the private sector to transform Egypt into a regional center for the pharmaceutical industry in the Middle East.

Turkey

Turkey market size is estimated at 26 thousand tons in 2021 which is expected to increase at CAGR of 5.6% to reach 36 thousand tons by 2027.

Figure 34: Turkey PVC stabilizers market (Thousand tons)



Note: Turkey is considered in the Middle East for the PVC stabilizers market size assessment

P: Projected, Data for each (CY) calendar year

Source: CRISIL MI&A Consulting

Growth drivers for stabilizer industry

Turkish construction sector would be driven by government plans of infrastructure upgradation

The Turkish construction market is estimated to grow at a CAGR of ~5% during the period of 2022–2027, driven by the government's plans to upgrade transport and energy infrastructure. The Turkish construction industry is expected to pick up in 2023 after slowdown in 2022 owing to weak currency, rising inflation, and rising construction prices. The Turkish government has unveiled a plan in Q4 of 2022 to build 500,000 new homes and 50,000 offices over five years from 2023 through 2025, which is dubbed as the country's largest ever home ownership drive. The Turkish government has rolled out measures in May 2022 designed to provide cheaper housing loans, which would boost demand for residential units.

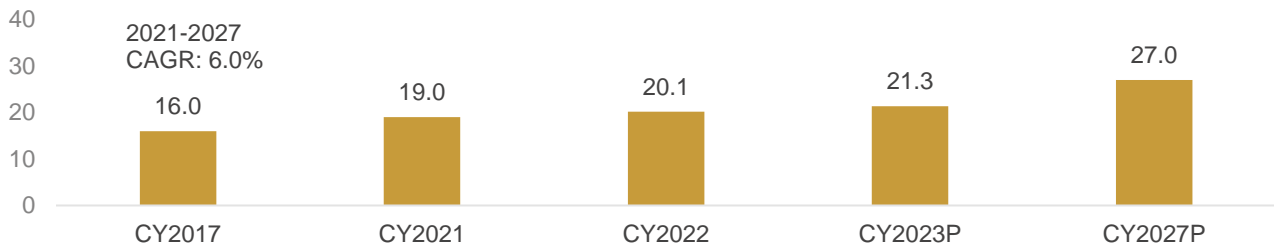
Modernization of country's existing irrigation infrastructure to drive demand

In National Water Plan (2019–2023) of Turkey, the importance of the water usage in agriculture was emphasized. As of 2018, irrigation efficiency is 50%, and it is planned to reach to 55% as of 2024. Country is aiming to modernize its irrigation systems and agriculture in line with the country's water policy by adoption of pressurized irrigation systems. The World Bank is funding the modernization programme and has allocated \$252 million for the same.

Saudi Arabia

Saudi Arabia market size is estimated at 19 thousand tons in 2021 which is expected to increase at CAGR of 6% to reach 27 thousand tons by 2027.

Figure 35: Saudi Arabia PVC stabilizers market (Thousand tons)



P: Projected, Data for each (CY) calendar year

Source: CRISIL MI&A Consulting

Growth drivers for stabilizer industry

Mega projects are driving the growth of the construction sector and increasing demand for PVC stabilizers

Saudi Arabia account for more than one-third of the share in the GCC construction market. Country is expected to register healthy annual growth in the range of 5-6% during the period 2022-2027. The Saudi real estate and construction sectors have been experiencing a period of rapid expansion due in part to a string of giga-projects and an economy rebounding from the Covid-19 pandemic. In fact, the country is presently working on some of the biggest building projects in the whole globe, including NEOM city, a \$500 billion new metropolis in the northwest, as well as improvements along the Red Sea coast and in the capital city of Riyadh. At the same time, demand for a variety of real estate alternatives and accompanying infrastructure, such public transit, is being driven by population expansion and a young demographic. All of this is happening under the context of Saudi Arabia's Vision 2030 long-term socio-economic development plan, which aims for sustainable growth and economic diversification.

9 Platinum Industries Ltd Market Positioning

9.1 Platinum Industries Ltd market positioning

Platinum Industries Ltd is positioned 3rd in the domestic market by sales of PVC stabilizers after Baerlocher and Goldstab Organics. Platinum Industries Ltd have ~8% market share in FY22 and 36,000 tons of annual capacity including PVC stabilizers, CPVC additives and lubricants. India market size by value is estimated at \$210 million or 1,575 Crores in fiscal 2022. The top 3 manufacturers account for 50-55% of the market by value and balance is fragmented with large number of relatively smaller manufacturers (smaller players having annual capacity less than 25,000 tons) and unorganized players.

New market entrant

Reagens India Plastic Additives Private Limited (parent is Italy-based Reagens Group), established a factory in 2020 with an annual capacity of 42,000 metric tons for PVC stabilisers, while the overall annual capacity including other products such as lubricants and metal soaps is 59,000 metric tons. Reagens India Plastic Additives has started domestic sales but has yet to scale up operations compared to the top 3 manufacturers (Baerlocher India, Goldstab Organics, and Platinum Industries Ltd)

9.2 Product portfolio

Company manufacture range of products which include lead free stabilizer for PVC, hybrid low lead PVC stabilizer, Highstab PVC stabilizer (calcium organic stabilizers, calcium zinc stabilizer), one pack stabilizer for PVC pipe, CPVC additives, and lubricants (polyethylene waxes). The company also provides customized products and solutions to its customers.

9.3 Manufacturing infrastructure

PVC stabilizer manufacturing facility

Platinum Industries Ltd ' manufacturing facilities are in Palghar, Maharashtra, which is about 85 km from Mumbai, Maharashtra. The first plant was set up in 2016 in a plot area of 1,500 square meters, Platinum Industries Ltd, a manufacturer of stabilizers, has a monthly capacity including lubricant is of 3,000 tons (36,000 tons per year). Additionally, their overall PVC stabilizer capacity includes a lubricant component with a capacity of 3,850 metric tons per year. If we exclude the lubricant capacity, the PVC stabilizer capacity of Platinum Industries Ltd would be 32,150 metric tons per year. Products manufactured in this plant are calcium zinc stabilizers, organic-based stabilizers, hybrid stabilizers, low-lead stabilizers, and boosters.

Other products manufacturing facility

Metallic stearates and polyethylene waxes are manufactured in another facility (Platinum Polymer & Additives, group company) with plot area of 10,000 square meters, which is also located in Palghar close to the stabilizers plant. Products manufactured are calcium stearate, zinc stearate, magnesium stearate, barium stearate and polyethylene waxes with capacity of around 1,200 tons/month (14,400 tons/month) in the first phase and will reach a total installed capacity of 2,500 tons/month (30,000 tons/month)

9.4 Focus on research and development

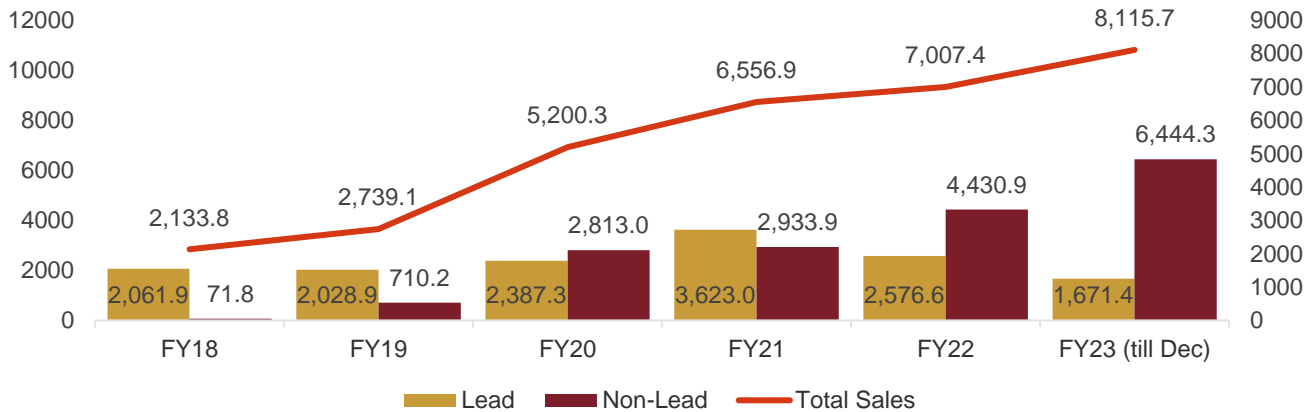
The company has a state-of-the-art R&D center with modern equipment and instrumentation that is focused on developing innovative products to suit their customers' needs and market demands. The R&D center is equipped to perform analysis of lead content, ash content, moisture content, density, presence of organic and calcium content, lubrication level, and has other lab facilities for UV testing, outdoor weathering, and indoor weathering. In addition to validating the quality of the products, the analytical lab is constantly investigating the function of novel raw materials, both acquired and synthesized in the lab, in generating final products with improved characteristics.

9.5 The non-lead product category accounted for majority of sales in FY22

Non-lead-based product (PVC stabilizers) sales have increased, while lead-based sales have decreased between FY18 to FY23 (till Dec'22). In FY22, non-lead-based product sales accounted for 63.2% of total sales. Company is

focusing on growth of non-lead category as the going forward the usage of lead stabilizers is expected to decline due to new regulations unveiled by Ministry of Environment and Forests (MoEF) in 2022 which prohibits lead-based stabilizers in PVC pipes going forward (details mentioned in section 5.4)

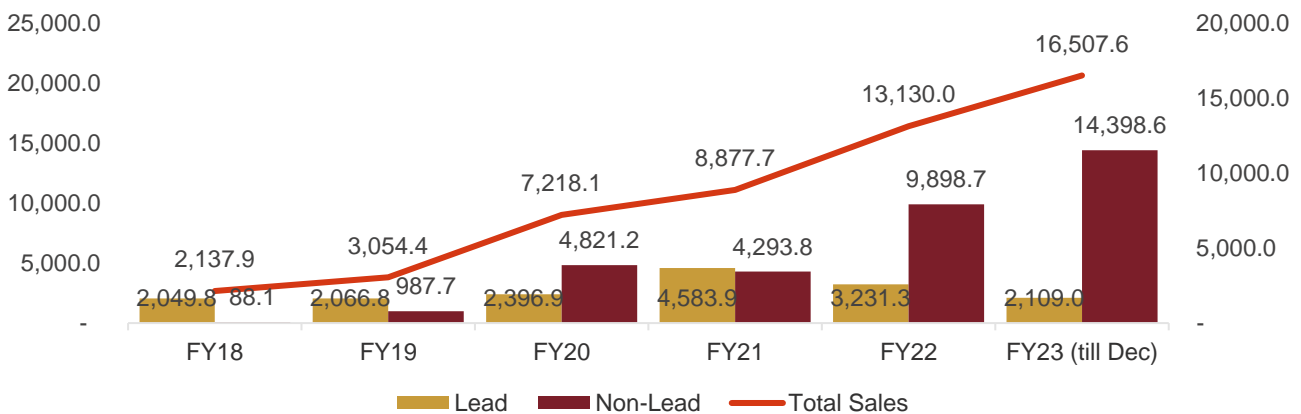
Figure 36: Platinum Industries Ltd sales of PVC stabilizers (in metric tons)



Data for each fiscal year (FY)

Source: Platinum Industries Ltd Report

Figure 37: Platinum Industries Ltd sales of PVC stabilizers (in lakhs)



Data for each fiscal year (FY)

Source: Platinum Industries Ltd Report

9.6 Strong customer base

Company's major clientele include marquee pipe manufacturers in India such as The Supreme Industries, Prince Pipes & Fittings, Astral Pipes, Ashirvad Pipes, Vectus Industries, , Signet Group, Texmo Pipes and Products.

10 Benchmarking with Indian Peers

CRISIL MI&A Consulting has compiled profiles of key players in the Indian speciality chemicals industry that are similar to Platinum Industries Ltd. Information in this section is sourced from company websites, including annual reports and investor presentations, regulatory filings, rating rationales and/or product brochures. The competitive landscape is based on player operations in India, comparable operating revenue, and availability of financial data of the players.

Table 12: Revenue from operations

Metric/company	Revenue from operations (Rs mn)			Revenue CAGR (FY20-FY22)
	FY22	FY21	FY20	%
Platinum Industries Ltd	1,843.5	709.1	787.7	53.0%
Baerlocher India Additives Pvt Ltd	4,420.8	3,729.2	4,175.5	2.9%
Goldstab Organics Pvt Ltd	3,797.4	2,949.4	2,844.9	15.5%

Source: CRISIL MI&A Consulting

Table 13: Gross profit and gross margin

Metric/company	Gross profit (Rs mn)			Gross margin (%)			Gross profit growth CAGR (FY20-FY22)
	FY22	FY21	FY20	FY22	FY21	FY20	%
Platinum Industries Ltd	439.5	138.6	123.2	23.8%	19.5%	15.6%	88.9%
Baerlocher India Additives Pvt Ltd	1,197.5	1,035.3	1,244.1	27.1%	27.8%	29.8%	-1.9%
Goldstab Organics Pvt Ltd	523.0	477.2	637.9	13.8%	16.2%	22.4%	-9.5%

Source: CRISIL MI&A Consulting

Table 14: EBITDA and EBITDA margin

Metric/company	EBITDA (Rs mn)			EBITDA margin (%)			EBITDA growth CAGR (FY20-FY22)
	FY22	FY21	FY20	FY22	FY21	FY20	%
Platinum Industries Ltd	225.4	54.2	34.9	12.2%	7.6%	4.4%	154.2%
Baerlocher India Additives Pvt Ltd	514.3	475.0	570.0	11.6%	12.7%	13.7%	-4.8%
Goldstab Organics Pvt Ltd	258.4	268.6	285.2	6.8%	9.1%	10.0%	-5.0%

Source: CRISIL MI&A Consulting

Table 15: Profit after tax

Metric/Company	PAT (Rs mn)			PAT margin (%)			PAT growth CAGR (FY20-FY22)
	FY22	FY21	FY20	FY22	FY21	FY20	%
Platinum Industries Ltd	159.5	38.3	15.5	9.7%	5.4%	2.0%	220.4%
Baerlocher India Additives Pvt Ltd	336.1	346.2	434.8	7.6%	9.3%	10.4%	-12.1%

Goldstab Organics Pvt Ltd	198.5	194.8	195.8	5.2%	6.6%	6.9%	0.7%
---------------------------	-------	-------	-------	------	------	------	------

Source: CRISIL MI&A Consulting

Table 16: Return on equity and capital employed

Metric/Company	RoE (%)			RoCE (%)			Working capital cycle (days)		
	FY22	FY21	FY20	FY22	FY21	FY20	FY22	FY21	FY20
Platinum Industries Ltd	76.5%	78.4%	62.5%	58.2%	84.5%	97.9%	57.2	-2.5	-17.7
Baerlocher India Additives Pvt Ltd	11.9%	14.0%	20.4%	9.3%	16.9%	24.8%	126.0	93.9	63.0
Goldstab Organics Pvt Ltd	12.9%	14.6%	17.1%	14.0%	16.8%	21.1%	93.2	102.3	92.2

Source: CRISIL MI&A Consulting

Table 17: Gross fixed asset turnover ratio

Metric/company	Gross fixed asset turnover ratio		
	FY22	FY21	FY20
Platinum Industries Ltd	39.6	18.5	29.9
Baerlocher India Additives Pvt Ltd	5.4	5.1	6.1
Goldstab Organics Pvt Ltd	9.5	7.9	7.3

Source: CRISIL MI&A Consulting

Note: Company financials are standalone basis

Formulas used

Operating EBITDA = PBT+ D&A + interest cost – other income

EBITDA margin (%) = EBITDA/ revenue from operations

PAT margin (%) = PAT/ revenue from operations

RoE = PAT/ shareholders' equity

RoCE = EBIT/ capital employed (total assets – current liabilities)

Working capital days = Inventory days + receivable days – payable days

Inventory days = Closing inventory*365/COGS

Receivable days = Closing receivable*365/revenue from operations

Payable days = Closing payables*365/COGS

Gross profit = Revenue from operation – COGS

Gross margin = Gross profit/revenue from operations

Gross fixed asset turnover ratio = Revenue from operations/ gross fixed asset

Platinum Industries Ltd financial positioning

- Revenue from operations increased to Rs 1,843.5 million in fiscal 2022 from Rs 787.7 million in fiscal 2020, which was a CAGR of 53.0%.
- Gross profit increased to Rs 439.5 million in fiscal 2022 from Rs 123.2 million in fiscal 2020, which was a CAGR of ~88.9%.
- Gross margin improved significantly between fiscals 2020 and 2022, from 15.6% to 23.8%, thereby recording the 2nd highest gross margin vis-à-vis all peers in fiscal 2022.
- EBITDA margin strengthened to 12.2% in fiscal 2022 from 4.4% in fiscal 2020, the highest among identified peers in fiscal 2022.
- PAT rose to Rs 159.5 million in fiscal 2022 from Rs 15.5 million in fiscal 2020, which was a CAGR of 220.4%, the highest among all peers.
- PAT margin improved significantly between fiscals 2020 and 2022, thereby recording the highest margin vis-à-vis all peers in fiscal 2022.
- The company posted the highest asset turnover among considered peers in fiscal 2022, which was largely the result of its focus on high-value products and high-capacity utilisation of its facilities
- The company also recorded the highest return ratios (ROE and ROCE) in fiscal 2022, amongst the above considered peers.

About CRISIL Limited

CRISIL is a leading, agile and innovative global analytics company driven by its mission of making markets function better.

It is India's foremost provider of ratings, data, research, analytics and solutions with a strong track record of growth, culture of innovation, and global footprint.

It has delivered independent opinions, actionable insights, and efficient solutions to over 100,000 customers through businesses that operate from India, the US, the UK, Argentina, Poland, China, Hong Kong, UAE and Singapore.

It is majority owned by S&P Global Inc, a leading provider of transparent and independent ratings, benchmarks, analytics and data to the capital and commodity markets worldwide.

For more information, visit www.crisil.com

Connect with us: [LINKEDIN](#) | [TWITTER](#) | [YOUTUBE](#) | [FACEBOOK](#) | [INSTAGRAM](#)

About CRISIL Market Intelligence & Analytics

CRISIL Market Intelligence & Analytics, a division of CRISIL, provides independent research, consulting, risk solutions, and data & analytics. Our informed insights and opinions on the economy, industry, capital markets and companies drive impactful decisions for clients across diverse sectors and geographies.

Our strong benchmarking capabilities, granular grasp of sectors, proprietary analytical frameworks and risk management solutions backed by deep understanding of technology integration, make us the partner of choice for public & private organisations, multi-lateral agencies, investors and governments for over three decades.

CRISIL Privacy Statement

CRISIL respects your privacy. We may use your personal information, such as your name, location, contact number and email id to fulfil your request, service your account and to provide you with additional information from CRISIL. For further information on CRISIL's privacy policy please visit www.crisil.com/privacy.