

CHEMICALS



DECEMBER 2016

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CHEMICALS



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EXECUTIVE SUMMARY

Leading position globally

- In terms of value and production volume, Indian chemical industry is the 3rd largest producer in Asia and 6th by output in the world. Indian chemical industry could grow at 11 per cent p.a. to reach size of USD224 billion by 2017
- In 2015, India chemicals industry had a market size of USD144 billion
- By 2025, the Indian chemical industry is projected to reach USD403 billion.

High GDP share

- The chemical industry in India is a key constituent of Indian economy, accounting for about 2.11 per cent of the GDP
- More than 70,000 commercial products such as petrochemicals and basic chemicals are covered under chemical sector.

Global dye supplier

- India accounts for approximately 16 per cent of the world production of dyestuff and dye intermediates, particularly for reactive acid and direct dyes

Global player in specialty chemicals

- India is currently the world's third largest consumer of polymers and third largest producer of agrochemicals
- India specialty chemical market is expected to reach USD70 billion by 2020

Increasing exports of inorganic and organic Chemicals

- Value exports of inorganic chemicals from India is estimated at USD1.21 billion in FY16, with the organic chemical market reaching USD11.51 billion in FY16. Exports of organic chemicals from India stood at USD4.02 billion in FY16⁽¹⁾

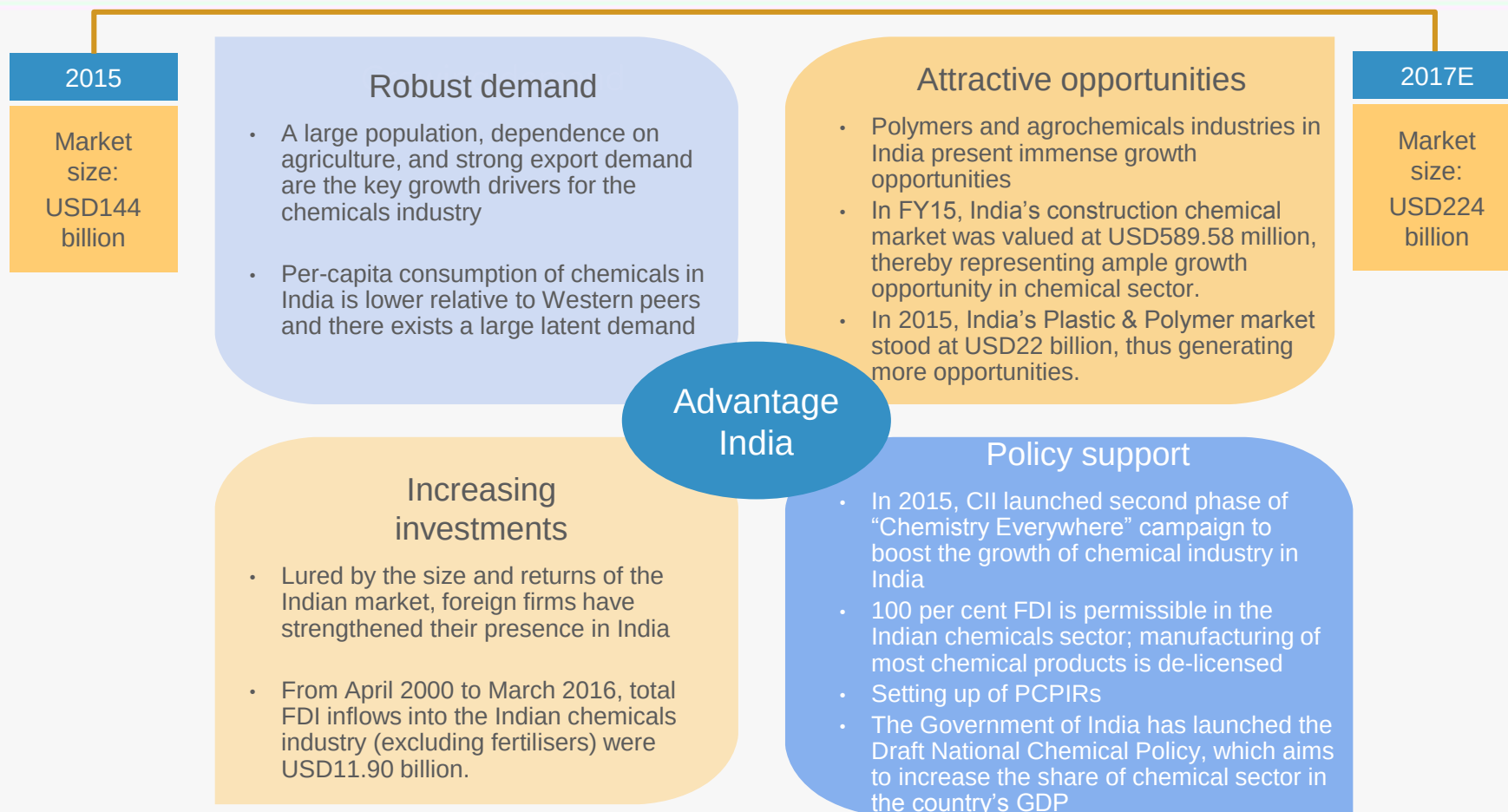
Source: Make in India, Confederation of Indian Industry, TechSci Research

Notes: PCPIR - Petroleum, Chemicals and Petrochemical Investment Regions; E – Estimates, ⁽¹⁾ April 2015-January 2016

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ADVANTAGE INDIA



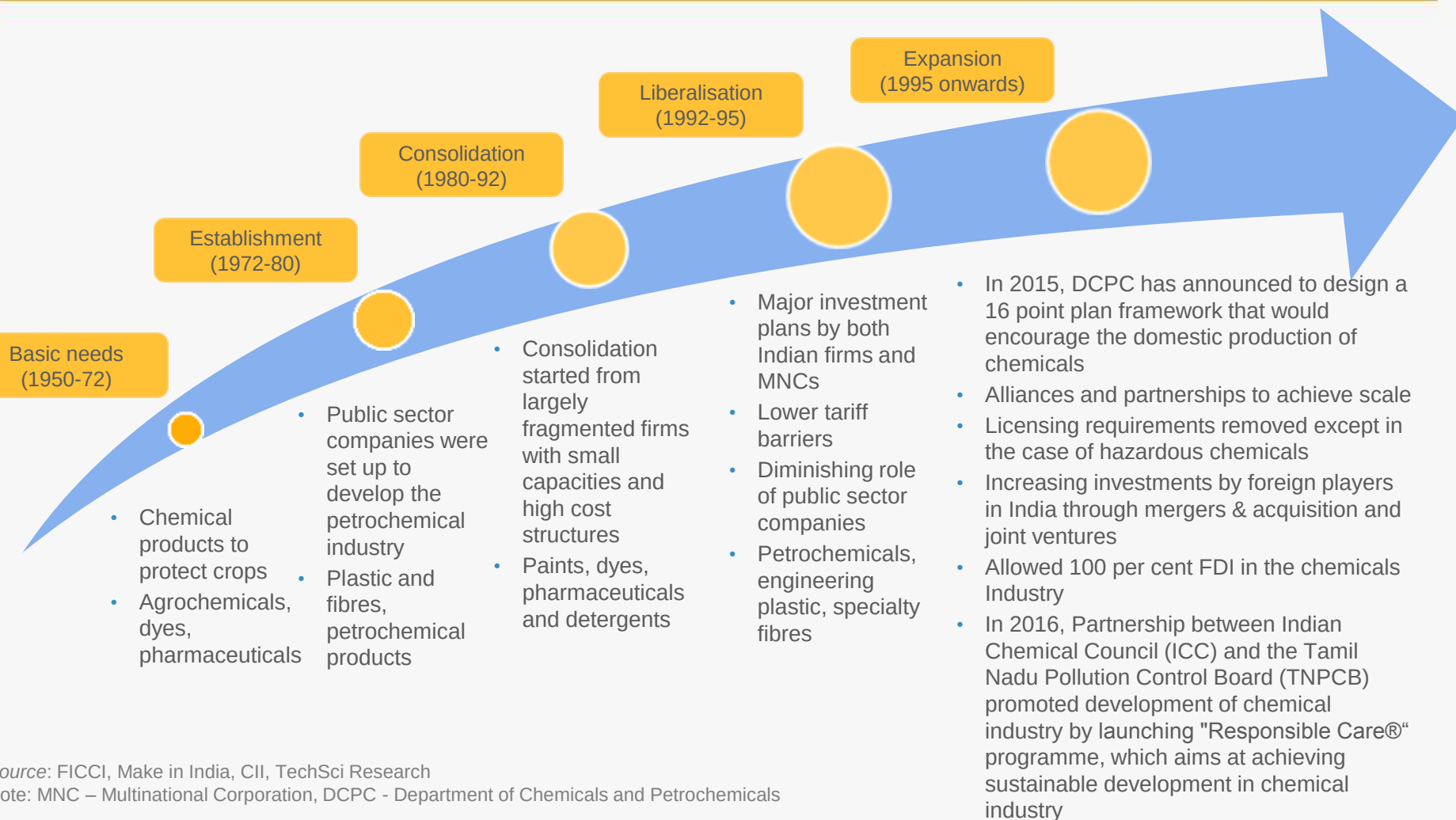
Source: FICCI, Make in India, Department of Industrial Policy and Promotion (DIPP), TechSci Research
Notes: PCPIR - Petroleum, Chemicals and Petrochemical Investment Regions, CII – Confederation of Indian Industry; E – Estimates

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MARKET OVERVIEW AND TRENDS

EVOLUTION OF THE INDIAN CHEMICAL INDUSTRY



Source: FICCI, Make in India, CII, TechSci Research

Note: MNC – Multinational Corporation, DCPC - Department of Chemicals and Petrochemicals

MAJOR SEGMENTS OF THE INDIAN CHEMICAL INDUSTRY

Base chemicals

- Petrochemicals, man-made fibres, industrial gases, fertilisers, chlor-alkali, and other organic and inorganic chemicals

Specialty chemicals

- Dyes and pigments, leather chemicals, construction chemicals, personal care ingredients and other specialty chemicals

Pharmaceuticals

- Active Pharmaceutical Ingredients (APIs) and formulations

Agrochemicals

- Insecticides, herbicides, fungicides and other crop protection chemicals

Biotechnology

- Bio-pharma, bio-agri, bio-services and bio-industrial products

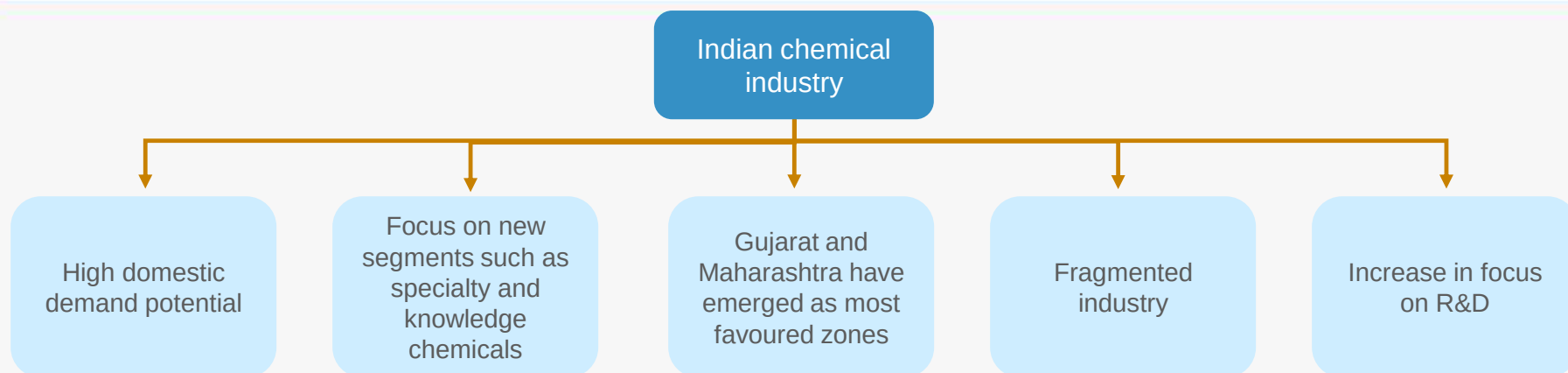
Source: TATA Strategic Management Group, TechSci Research

PRODUCT-WISE CLASSIFICATION OF THE INDIAN CHEMICAL INDUSTRY

Alkali chemicals	Inorganic chemicals	Organic chemicals	Pesticides & insecticides	Dyes & dyestuffs
- Soda ash - Caustic soda - Liquid - Chlorine	- Aluminum flouride - Calcium carbide - Carbon black - Potassium chlorate - Titanium dioxide - Red phosphorus	- Acetic acid - Acetone - Phenol - Methanol - Ortho Nitro Chlorobenzene (ONCB) - Isobutyl - Para Nitrochlorobenzene (PNCB) - Ethyl - Alkyl Amines - Acetic Anhydride - Formaldehyde	- Dichlorodiphenyltri-chloroethane (DDT) - Malathion - Parathion - Ethicon - Endosulphan - Phosalone - Phorate - Acephate - Fenvalerate	- Azo dyes - Disperse dyes - Fast colour bases - Ingrain dyes - Napthols - Vat dyes - Reactive dyes - Pigment Emulsion - Sulphur dyes - Other dyes

Source: TechSci Research

CHARACTERISTICS OF THE INDIAN CHEMICAL INDUSTRY

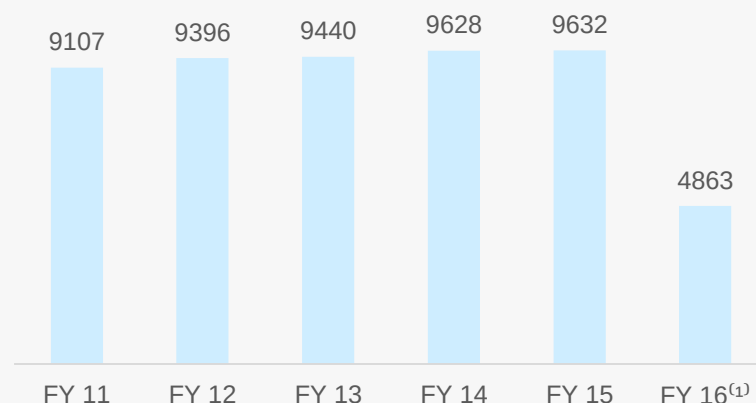


- As on 2015, the National Chemical Policy of India which is expected to help in improving the chemical industry is in final stages and as a part of this, the Government is planning to launch Indian Bureau of Corrosion Control and setting up National Chemical Centre that could prevent losses from corrosion and act as a repository information center for the chemical industry
- Strong economic growth and rise in per-capita income has meant a steady increase in demand for chemicals
- Expected to clock a growth of 10-13 per cent over the coming years
- The industry has left behind a low-growth and regulated environment to emerge more mature
- There is strong government support towards R&D; this would benefit the sector
- In 2015, Department of Chemicals and Petrochemicals added three new chemical and petrochemical products under its supervision.
- In 2016, Department of Chemicals and Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India and Federation of Indian Chambers of Commerce & Industry (FICCI) launched, 'India Chem-2016' to develop Indian Chemical and Petrochemical Industry.

DOMESTIC AND EXTERNAL DEMAND DRIVING GROWTH IN THE SECTOR ... (1/2)

- * Total chemical production in India was 4808 MT in FY15 (upto September 2014) and reached to 4863 MT in FY16 (upto September 2015) . The growth of 1.1 per cent was registered from FY15 to FY16
- * Favourable demographics and strong economic growth are driving demand for chemicals
- * External demand and specialty chemicals have also contributed strongly to the growth of the industry
- * India's growing per capita consumption and demand for agriculture-related chemicals offers huge scope of growth for the sector in the future
- * The R&D spending of chemical industry is estimated to increase to around USD12 billion by 2017.

Total production of major chemicals (000' MT)



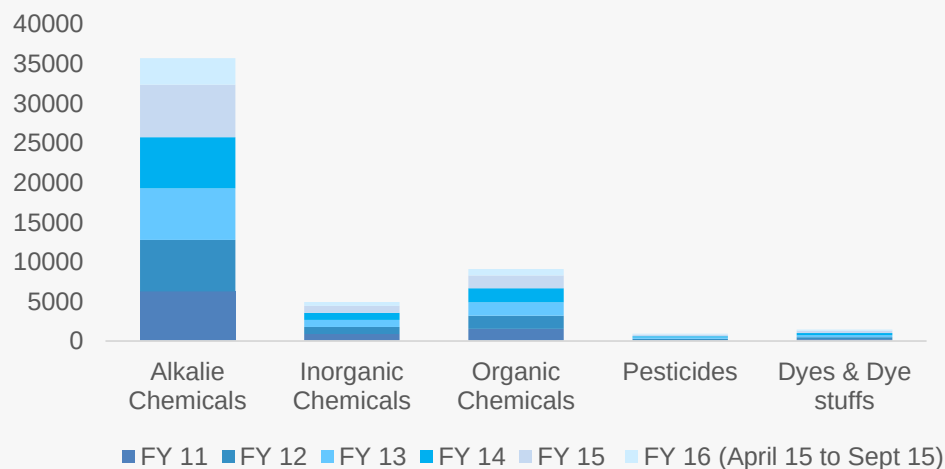
Source: Department of Chemicals and Petrochemicals,
TechSci Research

Note: MT - Metric Tonne
FY16: ⁽¹⁾ – Data upto September 2015

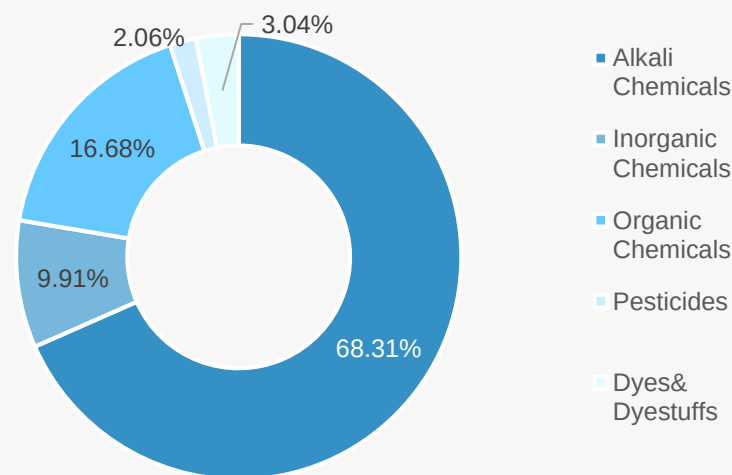
DOMESTIC AND EXTERNAL DEMAND DRIVING GROWTH IN THE SECTOR ... (2/2)

- * With 69 per cent share in the total production, alkali chemicals accounted for the largest share in Indian chemical industry in FY16 (upto September 2015)
- * During FY16 (April to September 2015), production of alkali chemicals in India stood at 3,322 MT.

Production of major chemicals (000' MT)



Production share of major chemicals during FY16 ⁽¹⁾

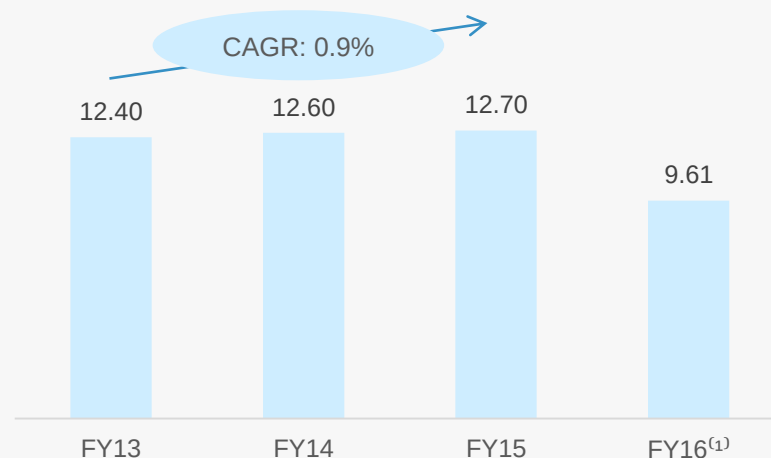


Source: Department of Chemicals and Petrochemicals, TechSci Research
 Notes: MT - Metric Tonne, Kg - Kilo gram,
 CAGR - Compound Annual Growth Rate
 Note: ⁽¹⁾ -April to September 2015

EXPORTS HAVE BEEN RISING OVER THE YEARS

- * Chemical exports from India stood at USD9.61 billion for FY16⁽¹⁾.
- * Exports in the chemical industry grew from USD12.4 billion in FY13 to USD12.7 billion in FY15, registering a growth of 0.9%

Chemical exports of India (USD billion)

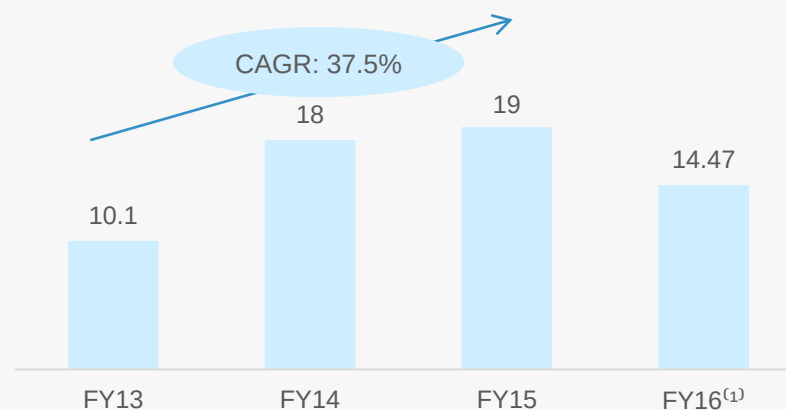


Source: Ministry of Commerce, TechSci Research
Notes: FY16⁽¹⁾ - April '15 – January '16

... BUT, INDIA IS A NET IMPORTER OF CHEMICALS

- * Total imports of chemicals grew from USD10.1 billion in FY13 to USD19 billion in FY15, a CAGR of 37.5%
- * Total imports of chemicals reached USD14.47 billion in the FY16⁽¹⁾.

India's chemical imports (USD billion)

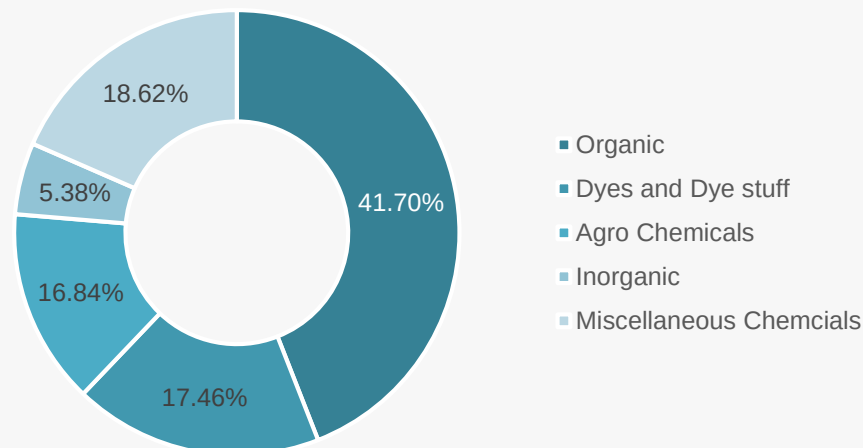


Source: Ministry of Commerce, DGCI&S, TechSci Research
Notes: FY16⁽¹⁾ - Data is for April '15 – January '16
CAGR - Compound Annual Growth Rate

ORGANIC CHEMICALS DOMINATE BOTH EXPORTS AND IMPORTS ... (1/2)

- * During FY16⁽¹⁾, organic chemicals accounted for a share of 41.84 per cent in India's total chemical exports, followed by miscellaneous chemicals which accounted for a share of 18.59%, in overall chemical exports from India.
- * Within agrochemicals herbicide is the largest segment globally, however, consumption of insecticides in India is dominating. Growth of agro chemicals is largely driven by export demand

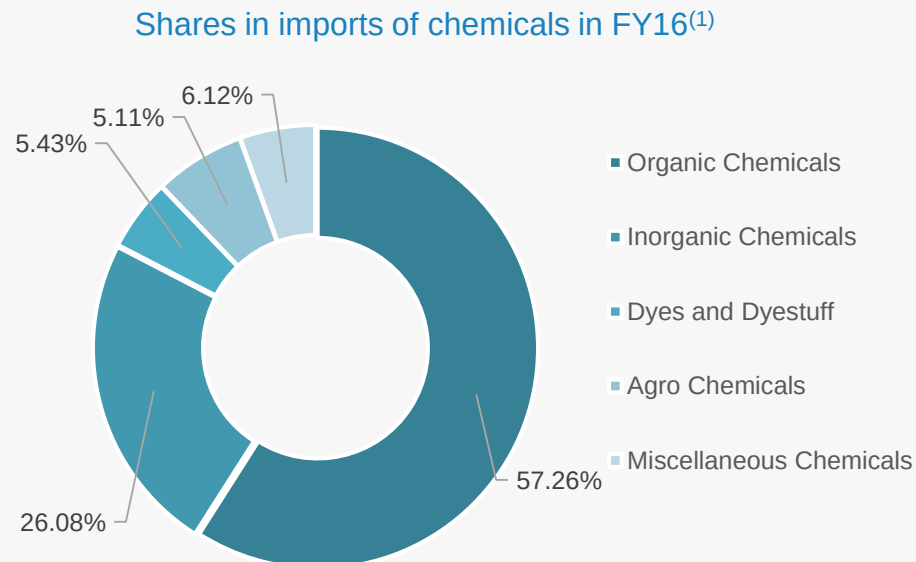
Shares in exports of chemicals in FY16⁽¹⁾



Source: Ministry of Commerce, TechSci Research
Note: CAGR - Compound Annual Growth Rate
⁽¹⁾ - Provisional data for April 2015- March 2016

ORGANIC CHEMICALS DOMINATE BOTH EXPORTS AND IMPORTS ... (2/2)

- * Organic chemicals also dominate imports, with a share of 57.26%, followed by inorganic chemicals at 26.08 per cent in FY16⁽¹⁾

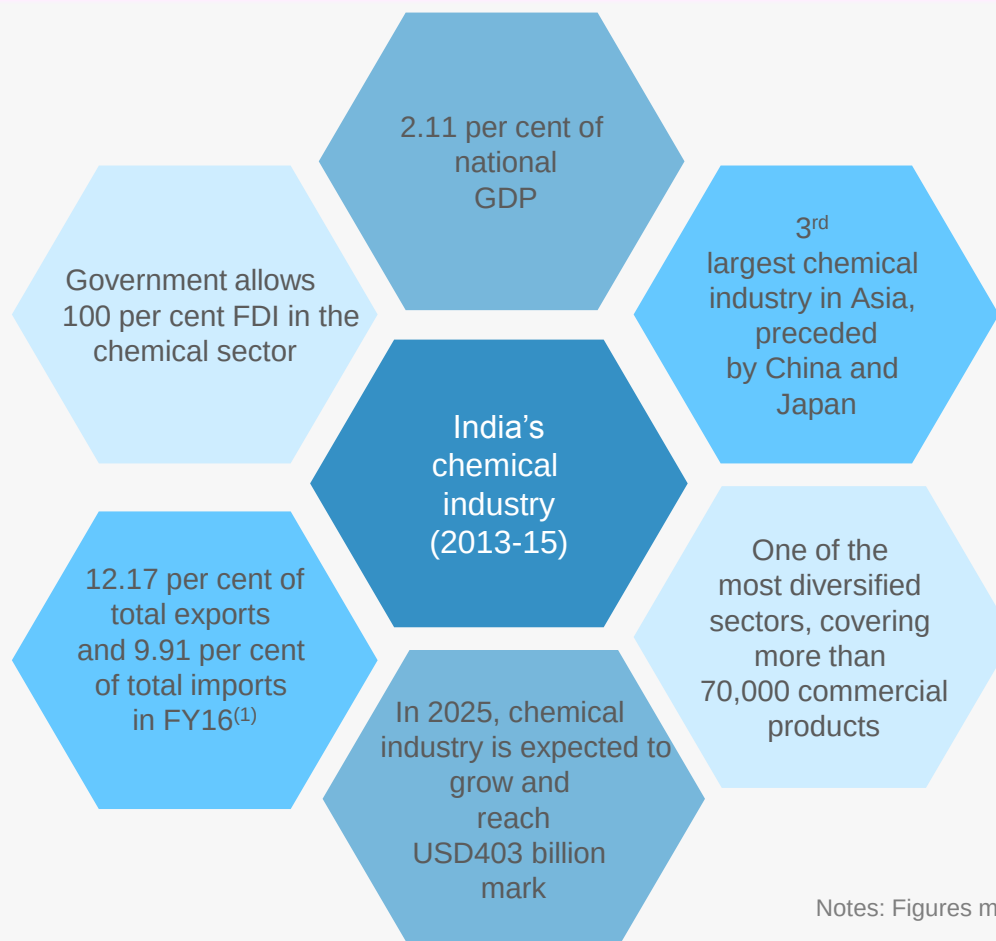


Source: Ministry of Commerce, TechSci Research

Note: CAGR - Compound Annual Growth Rate

⁽¹⁾ - Data for April-January 2016

CHEMICAL INDUSTRY HOLDS A SIGNIFICANT POSITION IN THE ECONOMY



Source: FICCI, TechSci Research
Notes: Figures mentioned above is taken from Dept. of Chemicals and Petrochemicals; FY16⁽¹⁾ - (April- December 2015)

HIGH GROWTH WOULD LEAD TO RISING GLOBAL POSITIONING

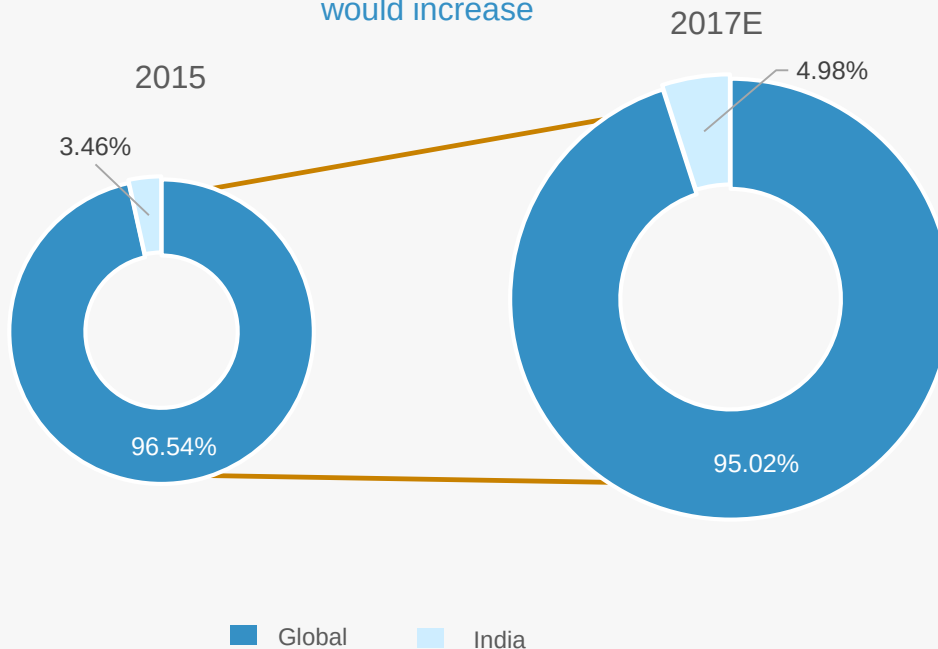
2015

- Global chemical industry: USD3.26 trillion
- India chemical industry: USD144 billion

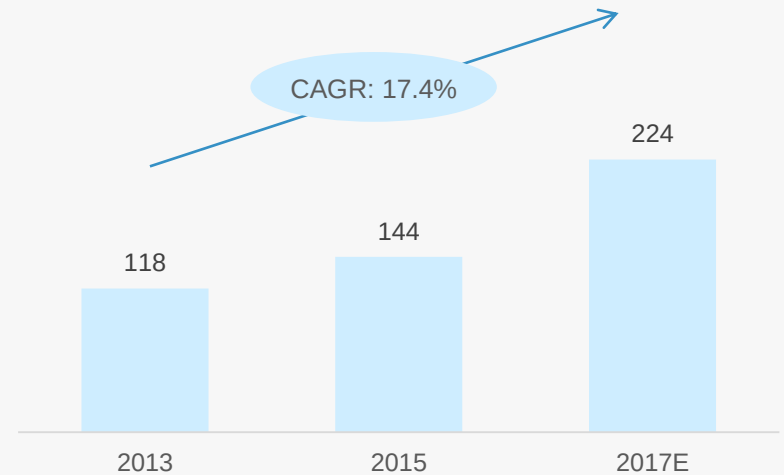
2017E

- Global chemical industry: USD4.5 trillion
- India chemical industry: USD224 billion

Contribution to global chemical industry
would increase

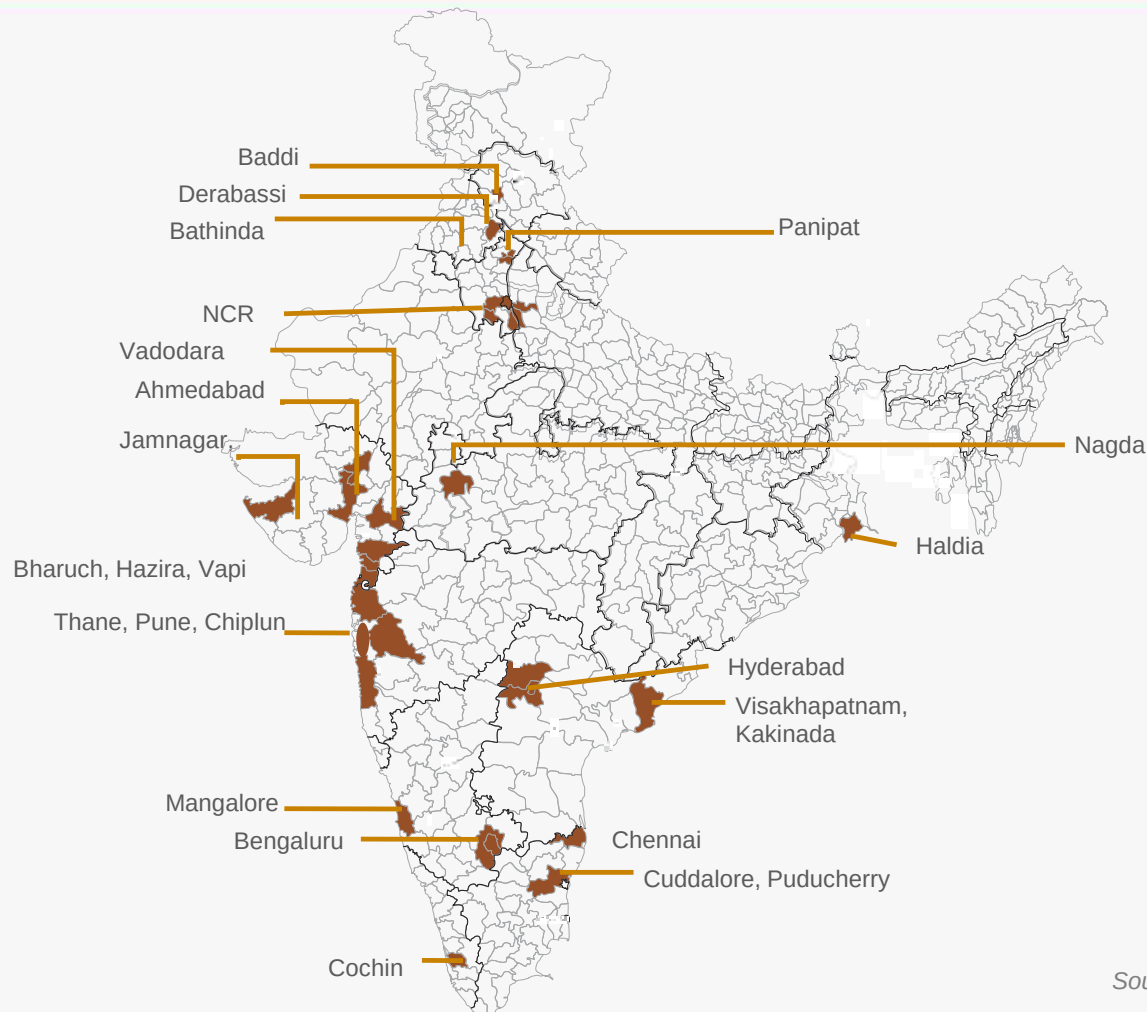


Strong growth outlook for the Indian chemicals
industry (USD billion)



Source: FICCI, TechSci Research
Notes: CAGR - Compound Annual Growth Rate, E - Estimate

WIDESPREAD CHEMICAL INDUSTRY INFRASTRUCTURE ACROSS INDIA ... (2/2)



Source: D&B, TechSci Research

KEY DOMESTIC AND INTERNATIONAL PLAYERS IN INDIAN CHEMICAL INDUSTRY

Domestic company	Sales in FY16 ⁽¹⁾ (USD billion)	Products
Tata Chemicals Limited (TCL)	1.62	Soda ash, salt, marine chemicals, caustic soda, cement, etc.
United Phosphorus Limited (UPL)	0.91	Agrochemicals
Gujarat Heavy Chemicals Ltd (GHCL)	0.4	Soda ash
Gujarat Alkalies and Chemicals Ltd (GACL)	0.30	Caustic soda

- * French specialty chemicals major, Arkema. plans to invest USD 15 million for setting up a new polyester powder resin manufacturing facility, the first of its kind in India.
- * As of October 2016, industrial chemicals manufacturer, Thirumalai Chemicals Ltd., plans to enhance its production capacity of phthalic anhydride and fine chemicals in India.

Source: Company Annual Reports, TechSci Research
Notes: ⁽¹⁾ For data upto 31st March, 2016,

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PORTERS FIVE FORCES ANALYSIS

PORTERS FIVE FORCES ANALYSIS

Competitive Rivalry

- Chemical industry is highly fragmented with intense rivalry amongst companies
- Since, 100 per cent FDI is allow hence domestic companies face stiff competition from foreign competitors as well
- International companies may also dump chemicals at low price

Threat of New Entrants

- Huge capital requirements and patent protection are significant barriers
- Other barriers include - R&D and personnel requirements

Substitute Products

- Buyers tend to have specific chemical requirements
- There are no direct substitutes for a specific chemical requirement

Bargaining Power of Suppliers

- Small chemical companies rely on supplies from larger plants, or petrochemical units
- Inputs for a chemical plant cannot be easily substituted

Bargaining Power of Customers

- Customers have multiple sources of supply
- Chemical companies are bound by long-term contracts
- Niche specialty chemicals have some pricing power

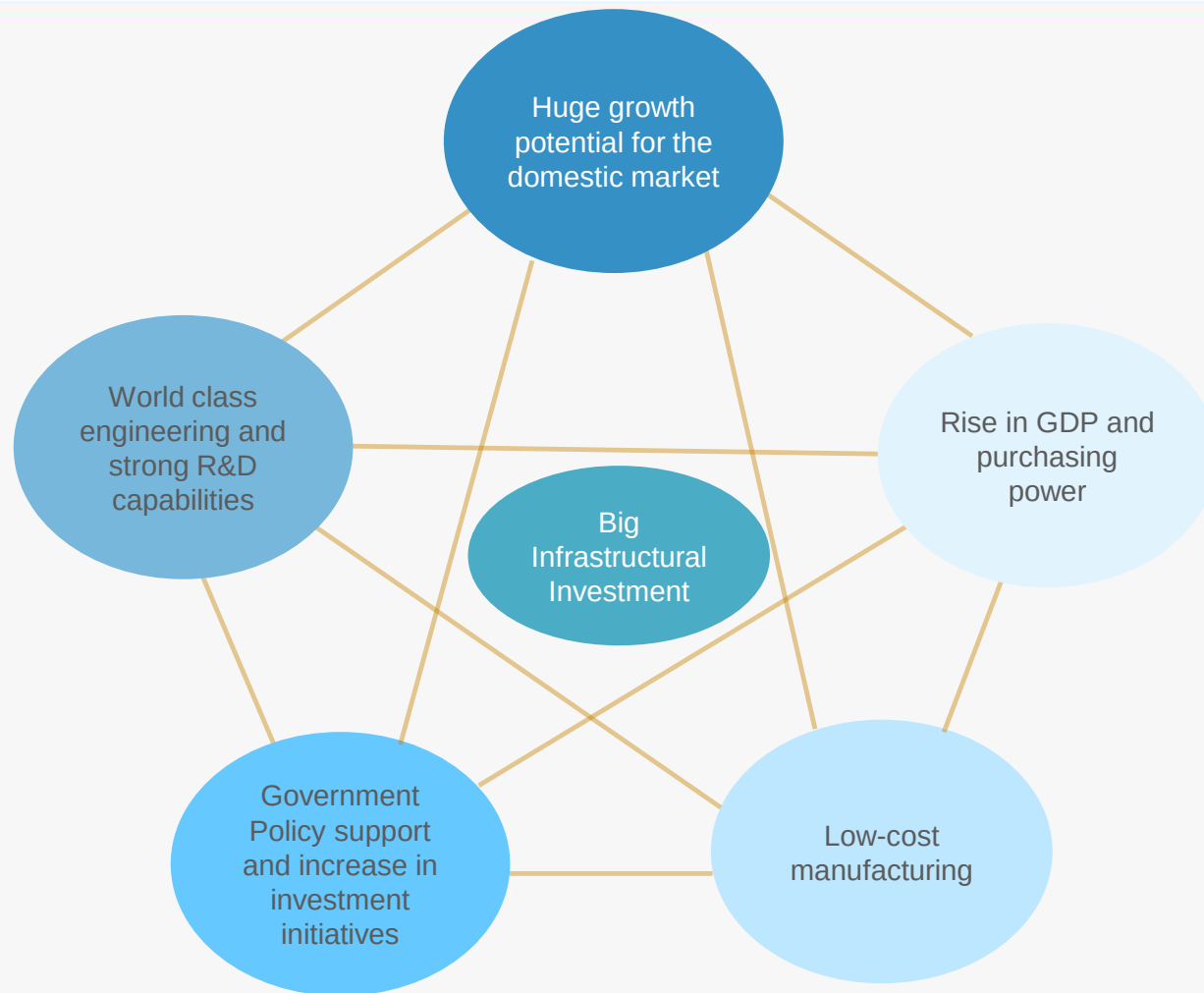


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GROWTH DRIVERS

GROWTH DRIVERS OF THE INDIAN CHEMICAL INDUSTRY

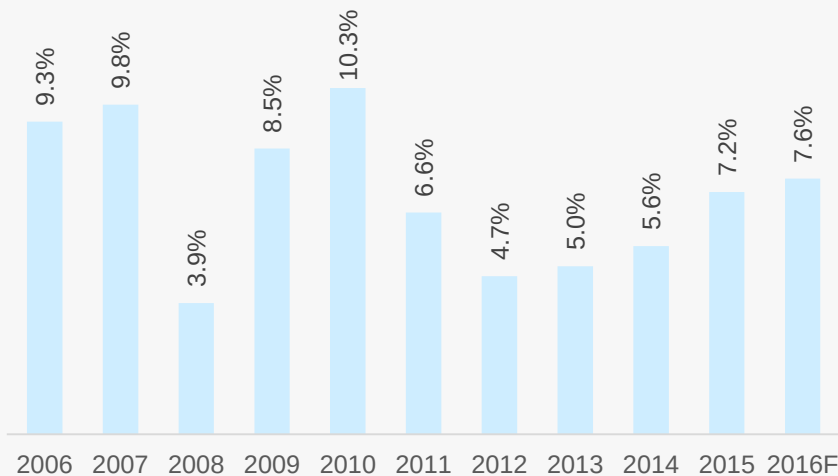


Source: TechSci Research

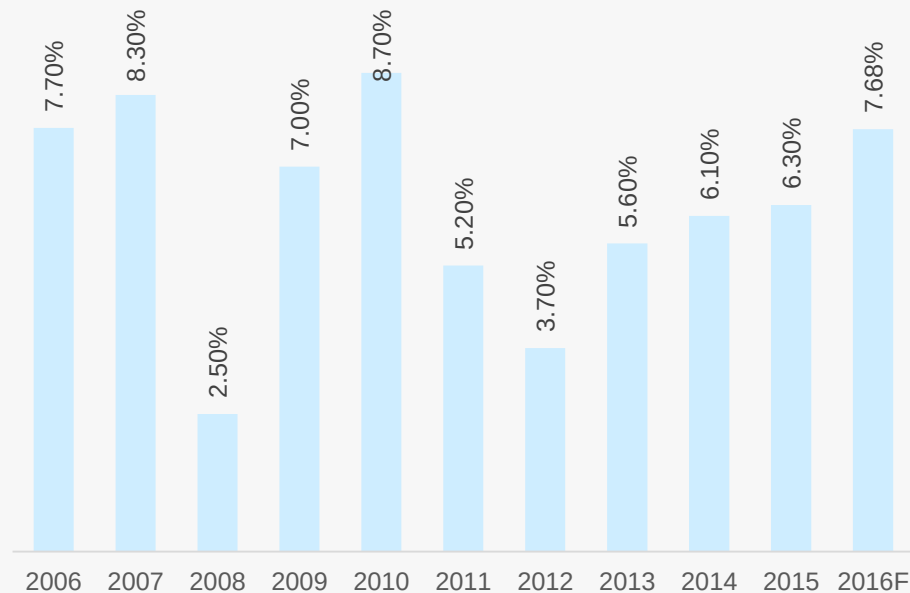
ECONOMIC EXPANSION WOULD CONTINUE TO DRIVE GROWTH IN THE CHEMICAL INDUSTRY

- * Being largely an intermediate product, strong economic growth is an important factor in sustaining demand for chemical products
- * Per capita consumption of most of the finished products under chemicals sector is far below the world average; this points to the vast potential for growth in the industry
- * As in a number of other industries in India, strong growth in discretionary income and changing lifestyles are counted as a few of the other major growth drivers of the chemicals sector

Real GDP growth



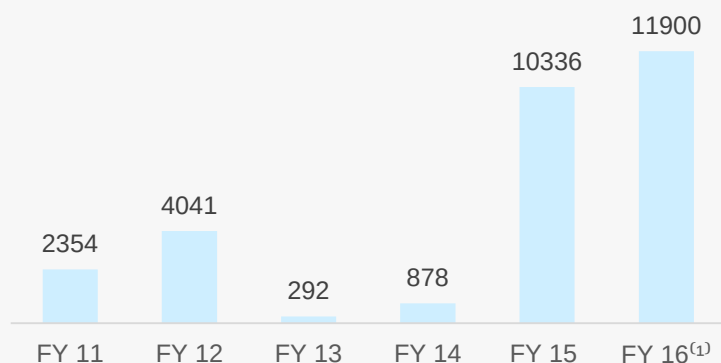
Per capita GDP growth



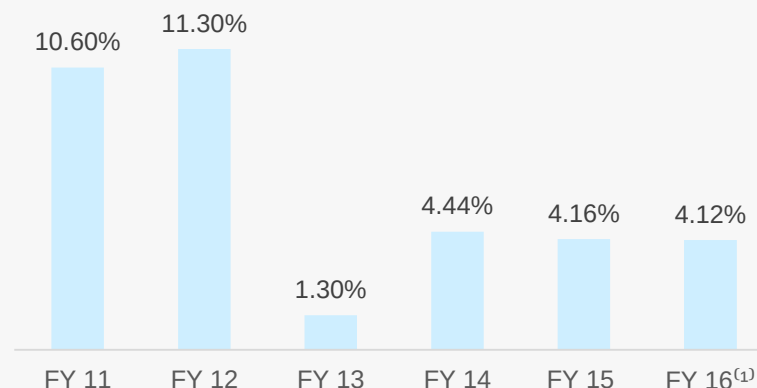
POLICY SUPPORT FOR FOREIGN INVESTMENT

- * FDI inflow in chemicals sector (other than fertilisers) stood at USD11,900.29 million during April 2000- March 2016, accounting for 4.12 per cent of the total inflows
- * Procedures relating to FDI have been simplified; most of the items in the chemicals sector fall under the automatic approval route for FDI/NRI/OCB investment up to 100%

Annual FDI inflow to the chemical industry
(excluding fertilizer) (USD Million)



Share of chemical industry in total FDI
inflow (excluding fertiliser)



Source: Department of Industrial Policy & Promotion,
Ministry of Commerce and Industry, TechSci Research
Note: ⁽¹⁾ - Up to March 2016

GOVERNMENT SUPPORT TO THE SECTOR IS INCREASING ... (1/2)

All figures are in USD million								
Name of the scheme	XI Plan outlay (2007-2012)	Annual Plan FY11	Annual Plan FY12	Annual Plan FY13	Annual Plan FY14	Annual Plan FY15	Annual Plan FY16	Annual Plan FY 17 ⁽¹⁾
Project based support to PSUs	29.1	4.3	0.0	5.4	1.3	5.81	2.30	6.11
Support to autonomous bodies	19.2	0.1	0.2	8.3	23.80	16.79	16.60	10.08
Other ongoing schemes	44.2	165.8	183.4	292.8	167.32	5.7	2.78	8.25
New schemes initiated in XI plan	25.0	17.9	10.1	-	-	-	-	-
Total	117.5	188.1	193.7	306.5	224.7	28.3	21.68	24.44

Source: Department of Chemicals and Petrochemicals,
TechSci Research

Notes: ⁽¹⁾ - Budget Estimate

GOVERNMENT SUPPORT TO THE SECTOR IS INCREASING ... (2/2)

All figures are in USD million								
Name of the scheme	Non-plan outlay (FY10)	Non-plan outlay (FY11)	Non-plan outlay (FY12)	Non-plan outlay (FY13)	Non-plan outlay (FY14)	Non-plan outlay (FY15)	Non-plan outlay (FY16 ⁽¹⁾)	Non-plan outlay (FY17 ⁽²⁾)
Assam Gas Cracker Project		130.48	127	254.17	16	0	0	0.0015
Secretariat	2.21	2.52	2.79	2.3	2.4	2.30	1.74	2.58
Central Institute of Plastics Engg. & Technology (CIPET)	0.63	0.10	0.10	0	0	0	0	0
Bhopal Gas Leak Disaster	0	0	0	17.5	23.3	4.37	2.43	3.84
Institute of Pesticide Formulation Technology (IPFT)	0	0	0	0.6	0.6	0.59	38.11	0.0015
Others	0.50	0.54	0.63	0	0	0	3.77	0.06
Total	3.34	133.64	130.52	274.57	42.3	7.26	46.05	6.42

Source: Department of Chemicals and Petrochemicals, TechSci Research

Note: ⁽¹⁾ - As on December 31, 2015,

⁽²⁾ – Budget Estimate

GROWTH, COMPETITIVENESS AND PROCESS INITIATIVES

- * The government has announced a number of measures to improve competitiveness in the sector
- * Share of manufacturing approved by the Cabinet as per the erstwhile Planning Commission would contribute 25 per cent of the GDP by 2025
- * Approval is granted for FDI up to 100 per cent in the chemicals sector, excise duty reduced from 14 per cent to 10%, strong laws on anti-dumping to further promote the industry
- * Cumulative FDI inflows into chemical industry reached USD11,900.29 million, during April 2000-March 2016
- * Policies that have been initiated to set up integrated Petroleum, Chemicals and Petrochemicals Investment Regions (PCPIR) are revised by the end of 2015-2016. The land requirement for a PCPIR would go down from 250 square kilometers to 50 square kilometers.
- * The capital and technology intensive projects under PCPIR that are likely to be operational within 10-15 years are estimated to draw an investment of USD116.54 billion.
- * Kerala, Karnataka and Maharashtra are new applicants for PCPIR
- * For setting up of PCPIRs, the government approved states including Odisha (Paradip), Gujarat (Dahej), Tamil Nadu (Cuddalore- Nagapattinam) and Andhra Pradesh (Vishakhapatnam-Kakinada).
- * New initiatives are likely to attract large investments, both domestic and foreign, with requisite improvements in infrastructure and competition

Industry-level initiatives

- The Indian Chemical Council (ICC) is the nodal agency/signatory representing India under the 'Responsible Care Initiative'
- ICC has prepared codes and guidance for implementation of process safety, employee health and safety, pollution prevention, emergency response, and product safety
- Member companies of ICC are encouraged to interact with local communities and groups such as students, teachers, fire/police personnel

Firm-level initiatives

- Indian chemical firms have strived to increase their market share through global presence
- They have in place technical agreements with multinational firms to keep abreast of technological progress in the global chemical industry

Source: EXIM Bank of India, TechSci Research,
Note: PCPIR - Petroleum, Chemicals and Petrochemicals Investment Regions

MILESTONES PROPOSED FOR 12TH FIVE-YEAR PLAN

Infrastructure	Feedstock	R&D and technology	Sustainability	Regulations
• Make PCPIRs a reality • Provide infrastructure support to the industry by constructing roads, ports and other similar facilities	• Implementation of strategy for sourcing and allocation of feedstock	• Setting up of technology up-gradation fund of USD100 million • Allocation of 10 per cent share of the USD1 billion National Innovation Fund to chemicals	• Development of the first set of chemical usage standards for the industry addressing key issues related to water supply, environmental impact, raw materials supply, safety over lifecycle, and energy use	• Committee to frame regulatory structure and eliminate redundancies • Setting up of a national chemical inventory • Government has rationalised and removed various tax exemptions and incentives to improve the administration and to reduce tax disputes

Source: TechSci Research
Note: PCPIR - Petroleum, Chemicals and Petrochemicals Investment Regions

RECENT MAJOR M&A DEALS IN THE INDIAN CHEMICAL INDUSTRY ...

	Acquirer	Target/ JV partner	Valuation	Synergies/ drivers
Inbound				
Jun-15	Evonik Industries	Monarch Catalyst Pvt. Ltd.	-	Global leader in catalysts
April-14	Yanmar Ltd/ Mitsui Ltd	Coromandel International Ltd	-	Manufactures rice transplanters and harvesters
April-14	Axiall LLC	Shriram Vinyl Polytech Pvt Ltd	USD6 million	Launched new-generation polymer compounds
December-13	Multiplast Polymer	Soft Clad Laminates	-	Manufacturer of plastic products
Outbound				
September-14	Brenntag	Pioma Chemicals	NA	Specialty chemicals
April-14	Asian Paints Ltd	Kadisco Chemical Industry PLC	-	Sells paints, coatings & adhesives in Ethiopia

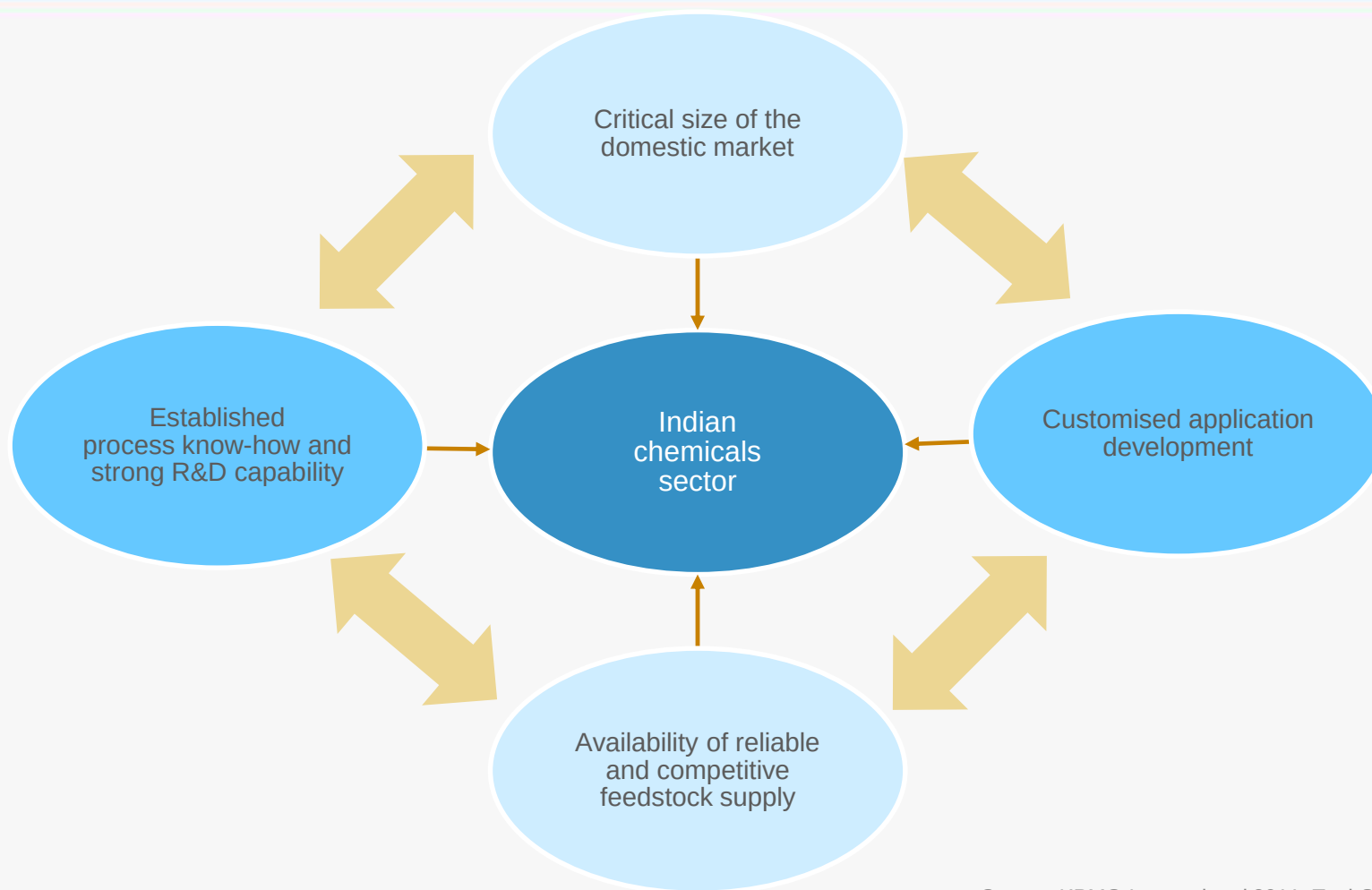
- * As of April 2016, Pidilite Industries Limited and Industria Chimica Adriatica Spa (ICA), entered into a joint venture, wherein Pidilite announced to have 50 per cent of the shareholding in the Joint Venture Company (JVC), Wood Coat Private Limited.
- * In October 2016, Gujarat Narmada Valley Fertilizers and Chemicals (GNFC) is entering into a JV with Belgian firm Ecophos SA to set up a 2,00,000 MTPA di-calcium phosphate (DCP) project at Dahej in Gujarat at an estimated cost of US\$ 80.35 million.
- * As of November 2016, Competition Commission approved the acquisition of Mitsubishi Chemicals Corporation (MCC) PTA India by Kolkata based- The Chatterjee Group.
- * As of November 27, 2016, the Competition Commission approved the acquisition of Tata Chemicals' urea and customised fertilizer business by Yara India –a 100% subsidiary of Yara Asia Pte.

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OPPORTUNITIES

GROWTH VALUE PROPOSITION OF THE INDIAN CHEMICAL INDUSTRY

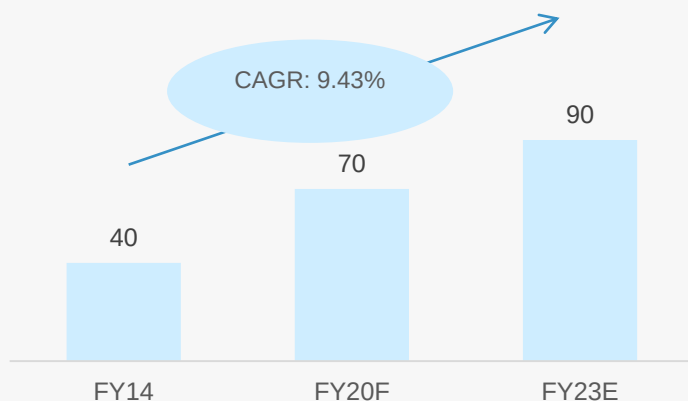


Source: KPMG International 2011, TechSci Research

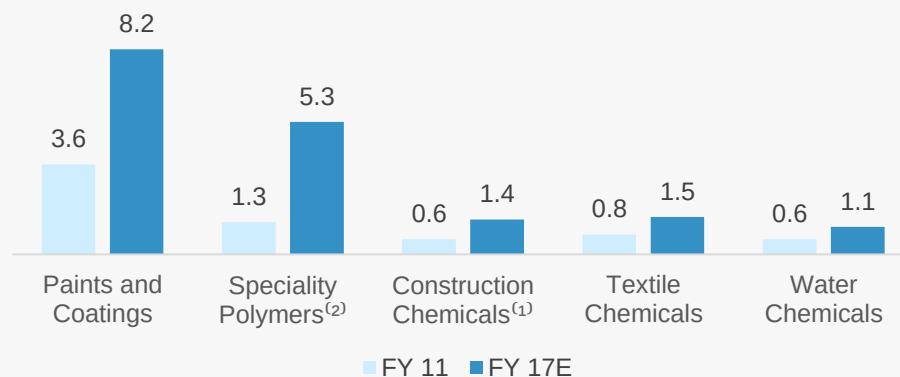
SPECIALTY CHEMICALS: LUCRATIVE OPPORTUNITIES IN THIS SEGMENT

- * Specialty chemicals market has expanded at a CAGR of about 12 per cent over FY07–11; the figure is expected to rise by 9.43 per cent from FY14 to reach USD90 billion by FY23, India is also gaining traction as an outsourcing hub
- * The Indian middle-class household is expected to grow from 31 million in 2008 to 148 million by 2030, leading to a huge demand for specialty chemicals in automotives, water treatment and construction
- * Compared to developed markets, current usage of specialty chemicals in India is very low, with an increased focus on improving products and usage intensity of specialty chemicals, the industry is poised for strong growth in future

Specialty chemical growth outlook by FY23
(USD billion)



Major sub-segments and their growth outlook by FY17
(USD billion)

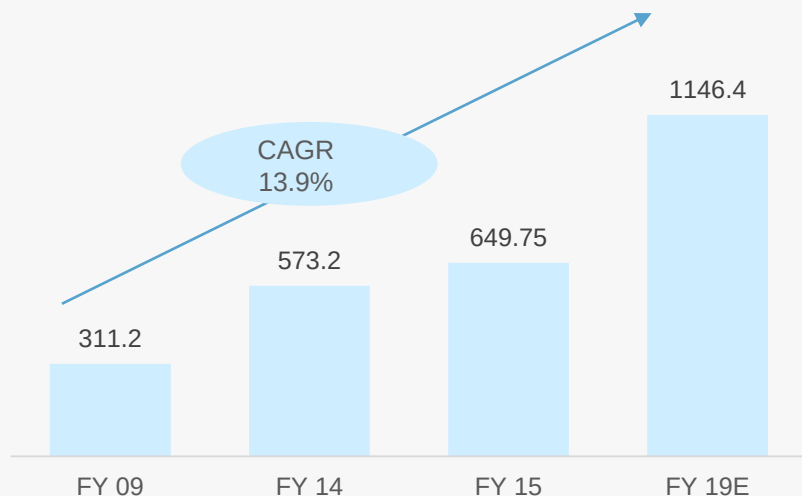


Source: FICCI, Dept. of Chemicals and Petrochemicals, TechSci Research,
 Note: ⁽¹⁾ - Value is for 2014
 Notes ⁽²⁾- Value is for 2015
 E: Estimated Value

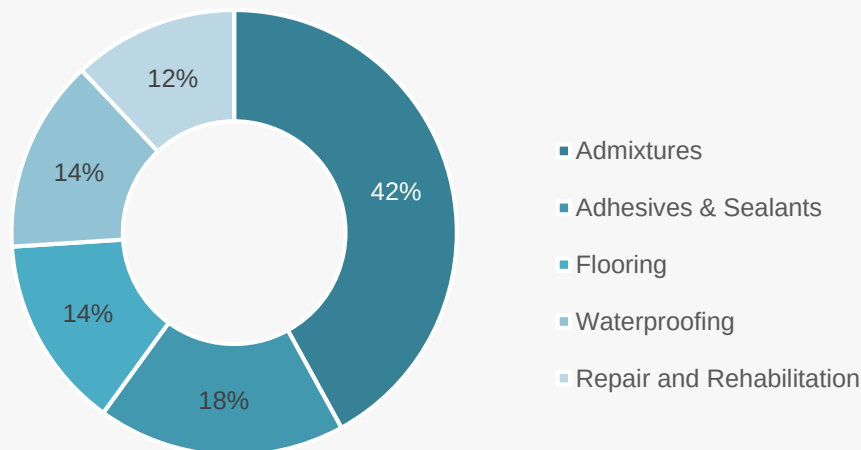
WITHIN SPECIALTY CHEMICALS, CONSTRUCTION CHEMICALS IS LIKELY TO SHINE

- ✳ India's construction chemical market stood at USD573.2 million in 2014, which grew to USD649.75 million in 2015.
- ✳ With the construction sector expected to pace ahead due to strong economic growth, the fundamentals for construction chemicals are sound
- ✳ By 2019, the construction chemicals sector is set to touch USD1146.4 million
- ✳ India's construction chemical sector consists of a variety of products ranging from admixtures to sealants. Admixtures form the largest segment with a 42 per cent share, followed by 18 per cent share of adhesives & sealants

Construction chemical growth outlook (USD million)



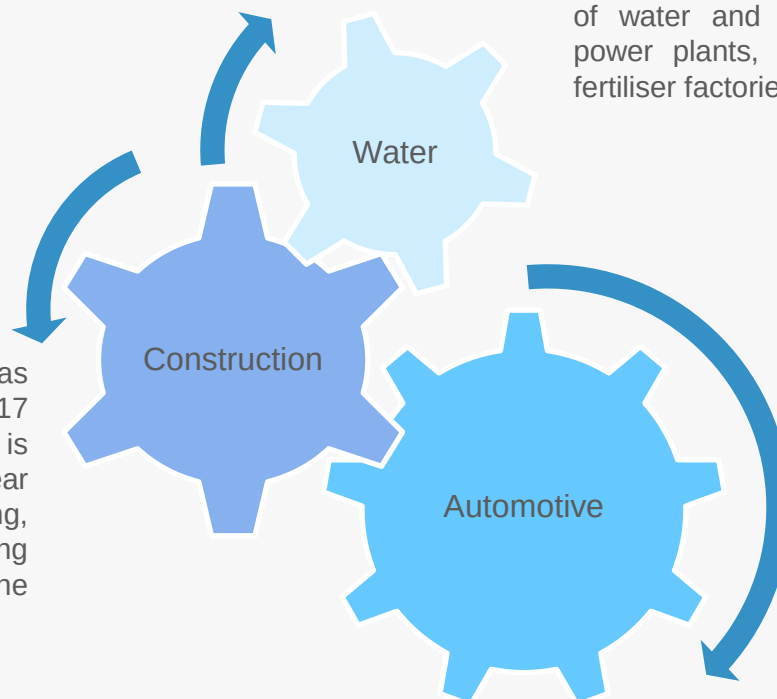
Specialty chemicals segments in 2014



Source: FICCI, TechSci Research
Note: E-Estimate

KEY GROWTH DRIVERS OF SPECIALTY CHEMICALS

Construction industry in India has been registering a CAGR of about 17 per cent over the last few years and is likely to gather momentum in the near future. Adoption of advanced coating, ceiling and polymer-based reinforcing material in construction will drive the demand for related chemicals



Water treatment chemicals are widely used in purification of water and also in large power plants, refineries and fertiliser factories

Automotive sector in India has been expanding at a CAGR of ~12 per cent over the last five years. Automotive sector growth will drive demand for automotive components and consequently for plastics, paints and coatings used in their production

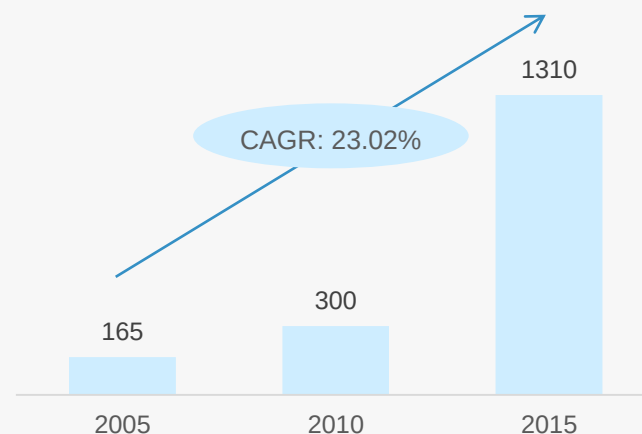
Source: TechSci Research

POLYMER CHEMICALS WILL BE YET ANOTHER KEY SEGMENT OF SPECIALTY CHEMICALS

Polymer chemicals

- * India is currently the world's third largest consumer of polymers, behind China and the US, India's polymer consumption is 6.2 million tonnes which constitutes 3 percent of the global consumption
- * Per capita consumption of polymer in India is 5.2 kg whereas China's per capita polymer consumption is 30 kg.
- * Indian Polymer market has grown at a CAGR of 23.02 per cent over 2005-15 to USD1310 million
- * The sector is expected to grow at a higher rate due to growth in plastic demand resulting from increased usage in packaging, construction and automotive sectors
- * Due to increasing environmental concerns and cost, replacement of wood, metal and glass by plastic will also augment demand
- * Polymer production in India is around 9 million tonnes and imports stand at 2.8 million tonnes
- * In FY 16(1), polymer production in India is stood at around 3.75 million tonnes, witnessing Y-o-Y growth at a rate of 17.9%, over the previous year.

Polymer chemical growth outlook (USD million)

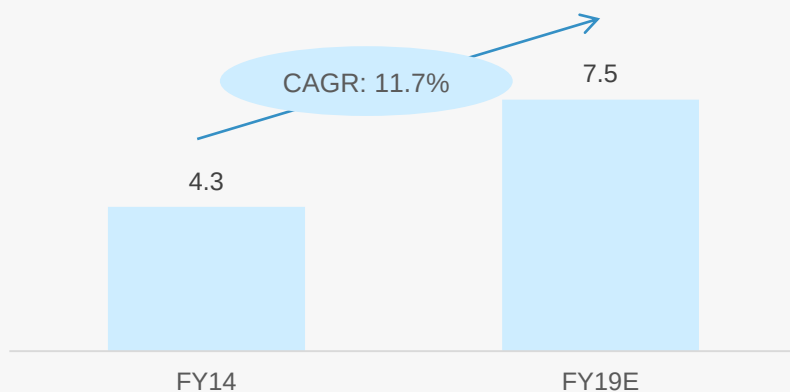


Source: TATA Strategic Analysis, TechSci Research
 Notes: E - Estimates, CAGR - Compound Annual Growth Rate,
 (1) – As of April 15 – September 15)

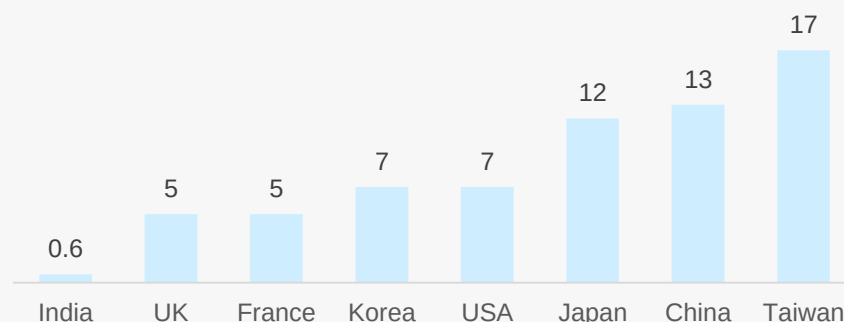
AGROCHEMICALS: THE FUTURE LOOKS BRIGHT... (1/2)

- * India is the third largest producer of agrochemicals, globally, and ranks fourth in terms of production of crop protection chemicals. The market for crop protection chemicals in India is expected to reach to USD7.5 billion by FY19, registering an exports of about 50 per cent of Indian crop protection industry.
- * Agrochemical industry in India is set to grow at a significant pace; increasing population, decreasing per capita availability of arable land and focus on increasing agricultural yield will fuel the demand for agrochemicals
- * India's per hectare agrochemical consumption is set to rise in the coming years, given the above-mentioned factors
- * In 2015, India has become one of the largest exporters of agrochemicals globally
- * Insecticides India Ltd launched a mobile app for its customers, to provide them important updates and information about products offered by the company. Insecticides India Ltd, a leading agrochemical company plans to invest USD22.9 million in the next two years to expand its production capacity

Agrochemical industry growth outlook (USD billion)



Pesticide consumption⁽¹⁾ (kg/ha)



Source: FICCI, India Chem, TechSci Research

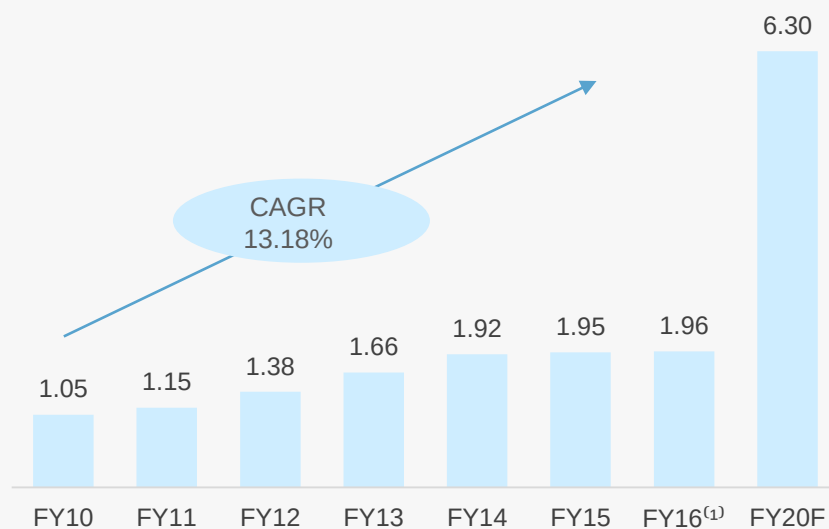
Notes: E - Estimates, CAGR - Compound Annual Growth Rate

Note: ⁽¹⁾ - Data is of 2014

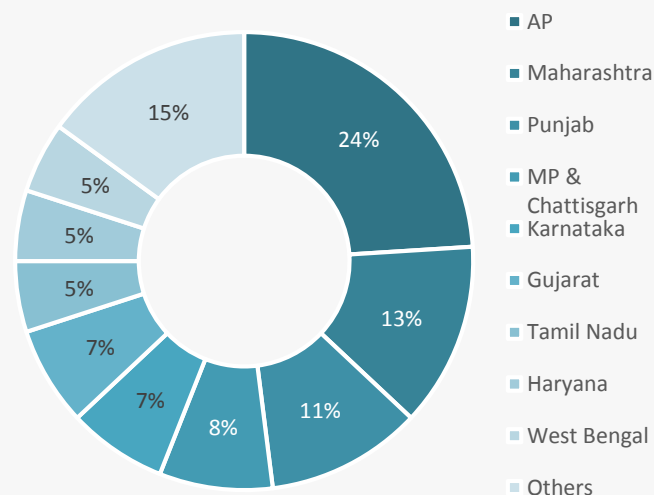
AGROCHEMICALS: THE FUTURE LOOKS BRIGHT... (2/2)

- * The seven states including Andhra Pradesh (AP), Maharashtra, Punjab, Madhya Pradesh & Chhattisgarh, Gujarat, Tamil Nadu and Haryana account for usage of over 70 per cent crop protection chemicals in India; wherein Andhra Pradesh is a leading consumer of agrochemicals with a market share of 24%.

Exports of Agrochemicals in India (USD Billion)



State Wise Agrochemical Consumption in 2015



Source: FICCI, TechSci Research
Note: F-Forecast,
AP – Andhra Pradesh, MP – Madhya Pradesh
⁽¹⁾ - Provisional data for April - March 2016

CHEMICALS

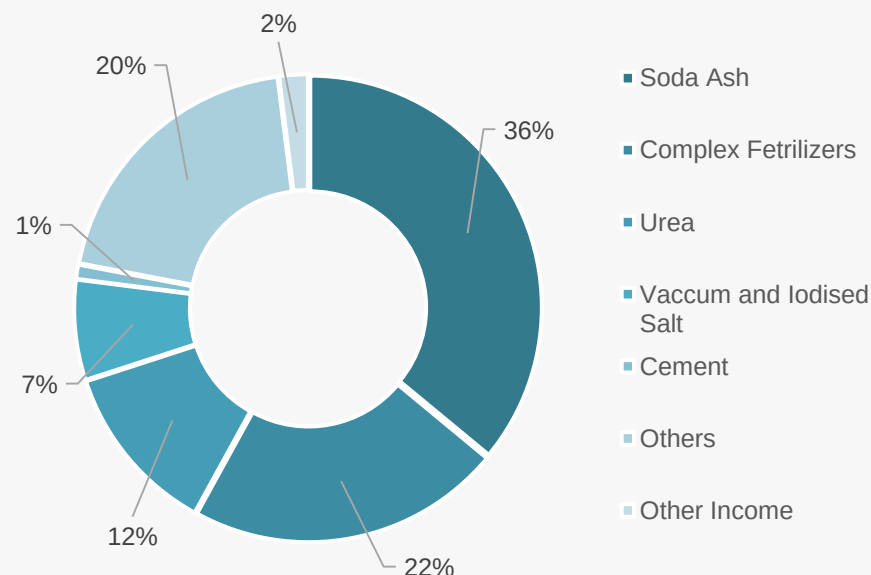


SUCCESS STORIES

TATA CHEMICALS: DIVERSIFYING THEIR WAY TO SUCCESS ... (1/3)

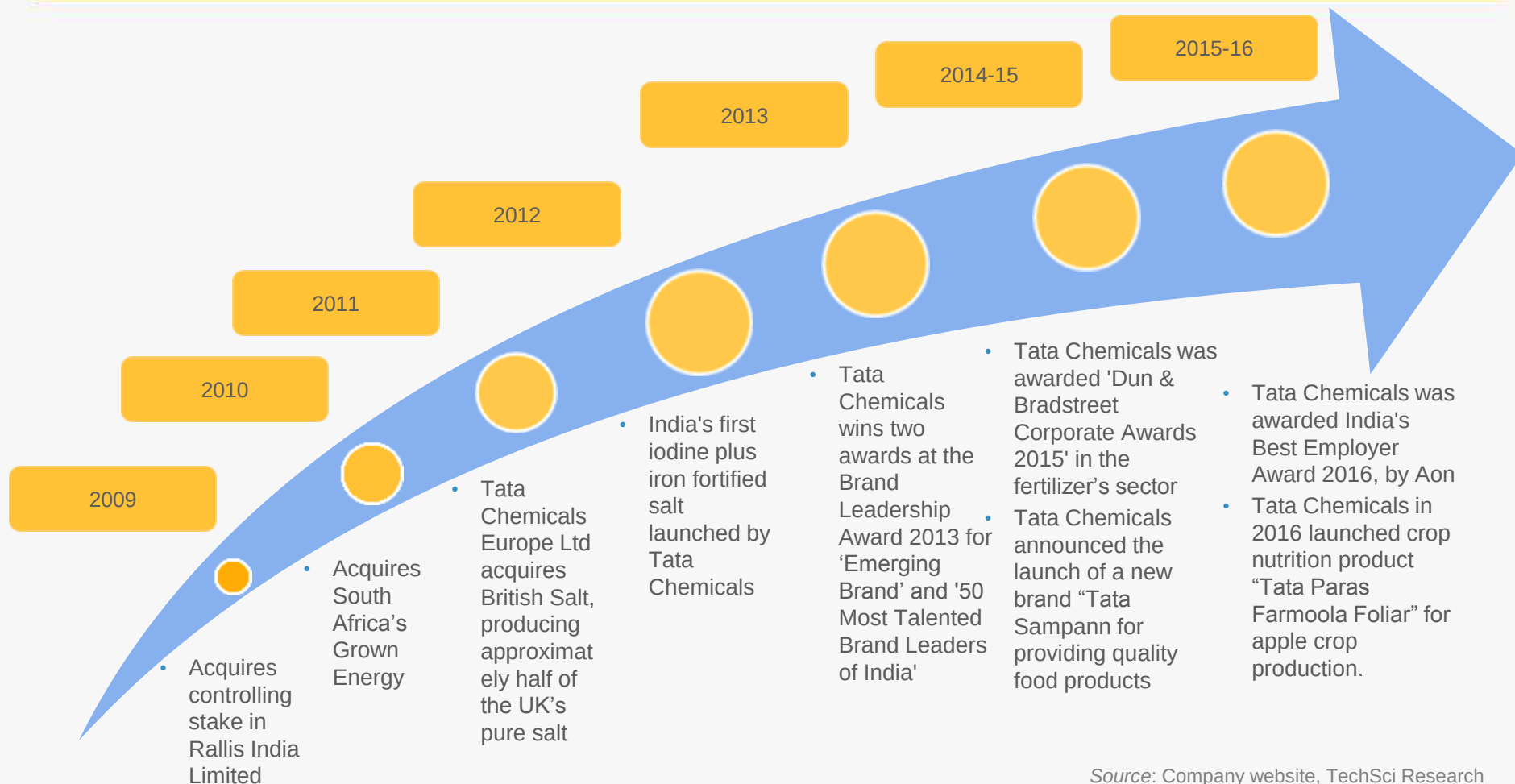
- * Tata Chemicals Limited (TCL) is one of the leading chemical companies in India, with significant operations in India and Africa
- * Second-largest soda ash producer in the world and the largest in India
- * A market leader in edible salt; largest STPP player in the country
- * Most energy-efficient urea fertiliser manufacturer in India; amongst the most efficient globally
- * 1/3rd stake holder in IMACID, Morocco, assured supply of key inputs
- * Soda Ash market holds the maximum share of 38 per cent followed by Complex Fertilizers and Urea with 21 per cent and 13 per cent respectively; Soda ash market in India saw a growth of 10 per cent during the period 2014-15

Revenue breakup of TATA chemicals (FY16)



Source: Company Annual Report, TechSci Research
Notes: STPP ⁽¹⁾ - Sodium Tripolyphosphate
IMACID - Indo Maroc Phosphore S.A.

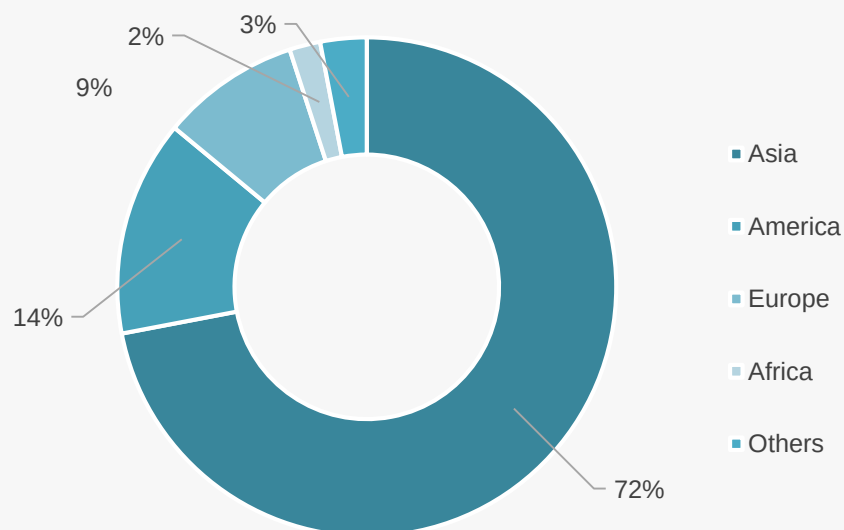
TATA CHEMICALS: DIVERSIFYING THEIR WAY TO SUCCESS ... (2/3)



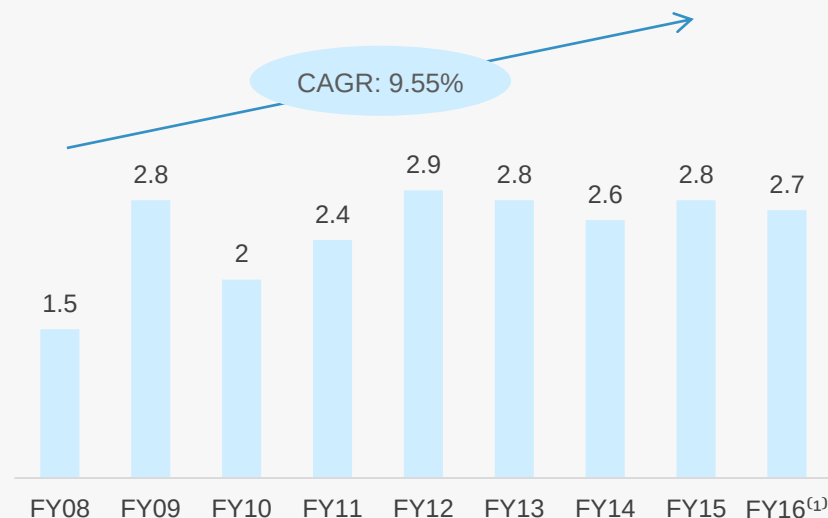
Source: Company website, TechSci Research

TATA CHEMICALS: DIVERSIFYING THEIR WAY TO SUCCESS ... (3/3)

Geographical diversification (FY16)



Turnover over the years (USD billion)



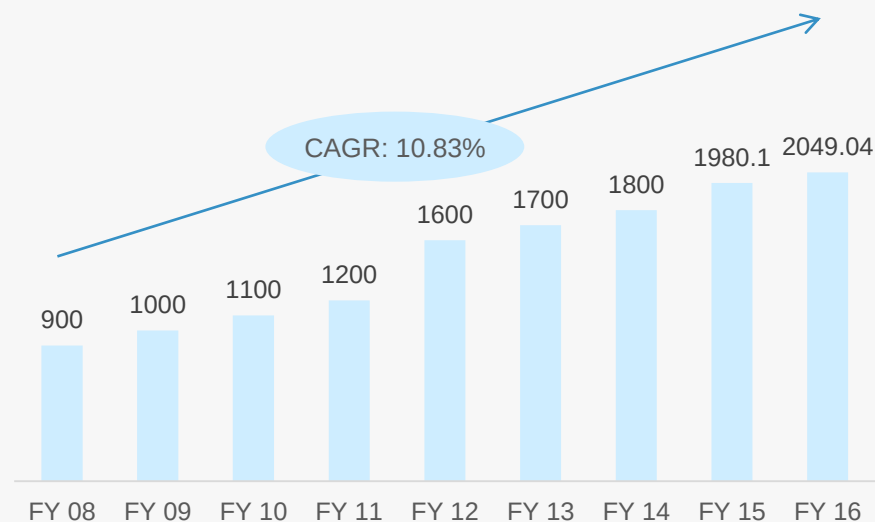
* Tata Chemicals Limited (TCL) earned net profit of USD119.18 million in FY16 ⁽¹⁾

Source: Tata Chemicals Annual Report, TechSci Research
Note: (1) : Data upto 31st March, 2016

UNITED PHOSPHORUS LIMITED (UPL): AN AGROCHEMICAL SUCCESS ... (1/2)

- * UPL is mainly engaged in the business of agrochemicals, other industrial chemicals, and chemical intermediates
- * Agrochemicals account for 96 per cent of the total sales of the company, while the industrial chemicals and intermediates segments together account for 4%
- * UPL has 28 manufacturing sites – 13 in India and 15 outside India(international)
- * The company has also strengthened its distribution reach and access to new markets through strategic alliances with agrochemical manufacturers in other countries
- * The company is planning to launch innovative technology, farming solutions, and new products through its other arms such as Advanta and Golden Seeds
- * UPL has been ranked the fifth largest agrochemical company globally

Total sales (USD million)



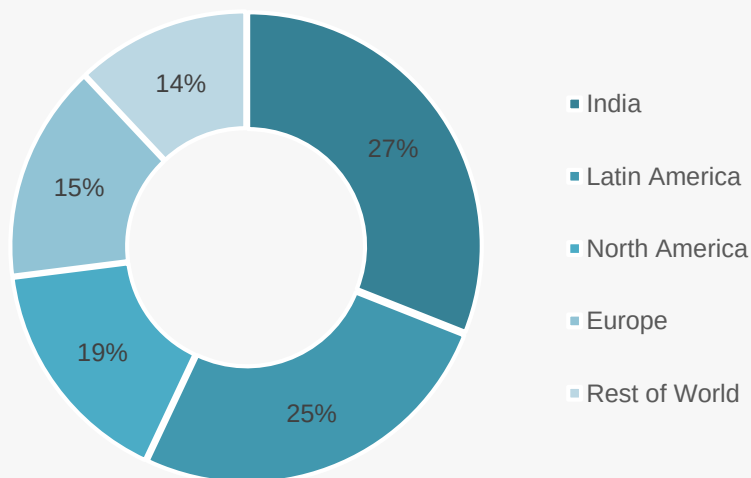
Source: United Phosphorus Limited (UPL) Annual Reports, TechSci Research

Notes: CAGR - Compound Annual Growth Rate

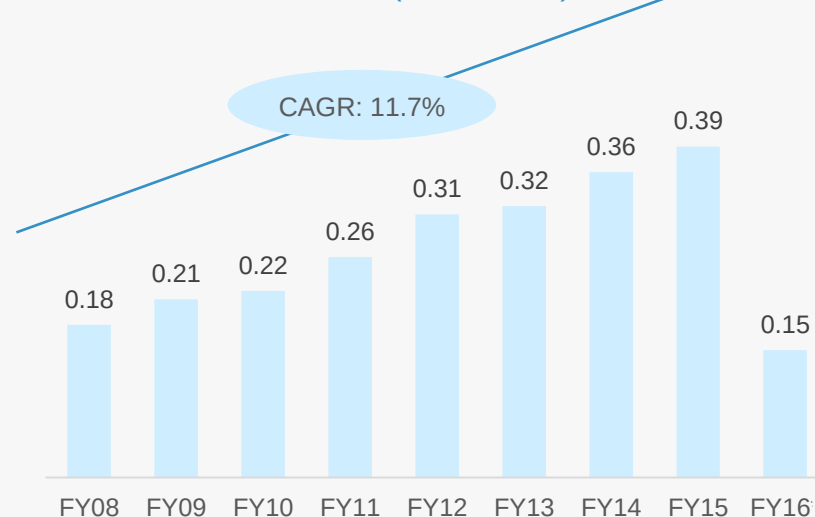
UNITED PHOSPHORUS LIMITED (UPL): AN AGROCHEMICAL SUCCESS ... (2/2)

- ✳ UPL Limited comprises of UPL, Advanta and UEL companies that are listed in the Indian Stock Exchange
- ✳ In 2015, UPL Mumbai won the Dun & Bradstreet Corporate Award in the agrochemicals sector

Income by region - FY16



EBIDTA (USD billion)

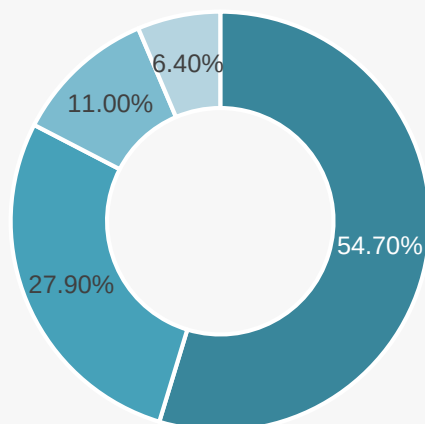


Source: Company Annual report, TechSci Research
Notes: EBIDTA - Earnings Before Interest, Taxes, Depreciation and Amortisation

ASIAN PAINTS: A COLORFUL GROWTH PATH

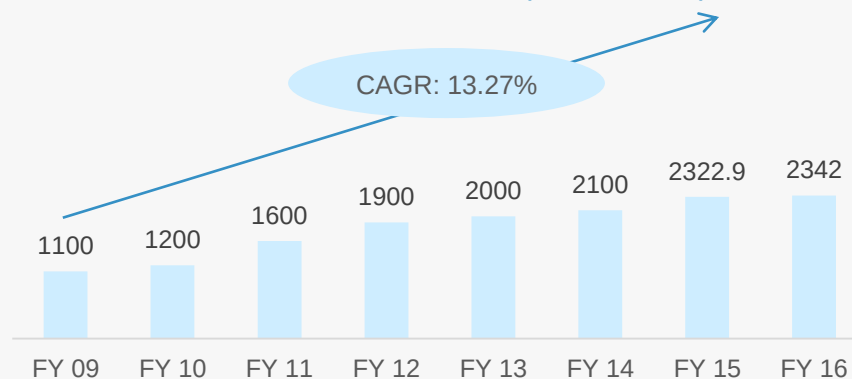
- * In 1942, Asian Paints started manufacturing in a Mumbai garage; now, with total installed capacity of nearly 1 million kilo-litre, Asian Paints is amongst the largest paint manufacturing companies in the world
- * Asian Paints has grown at an excellent pace over the years; a CAGR of 13.27 per cent from FY09–15 and net profit after tax earned for FY16 (during April – September 2015) is at USD144.4 million
- * In 2015, Asian Paints was awarded as the “Most Impactful Companies of the Decade” by CNBC. The company was listed on India’s Super 50 companies in the July 2015 issue by Forbes India

Asian Paints geography wise sales (FY16)



- Middle East & Africa (Egypt, Oman, Bahrain, UAE & Wthiopia)
- Asia (Bangladesh, Nepal, Sri Lanka, Singapore & Indonesia)
- Caribbean (Barbados, Jamaica, Trinidad & Tobago)
- South Pacific (Fiji, Solomon Islands, Samoa, Tonga & Vanuatu)

Asian Paints Revenue (USD million)

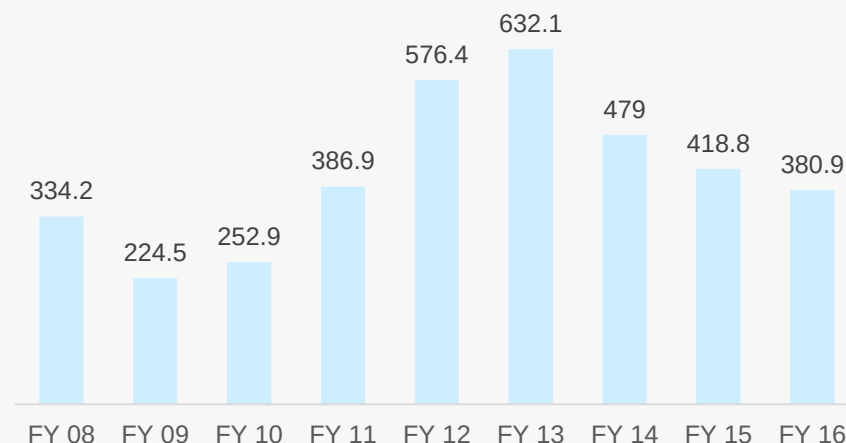


Source: Company Annual report, TechSci Research
Notes: KL - Kilo Litre, CAGR - Compound Annual Growth Rate

INDIA GLYCOLS LIMITED

- * Established in 1983, India Glycols is the only company that manufactures green technology-based bulk, specialty and performance chemicals and natural gums, spirits, industrial gases, sugar and nutraceuticals in India
- * The company operates in five segments, including Chemicals which forms the largest segment
- * The company exports to more than 40 countries including the US, Japan, and countries in Europe and Latin America
- * During FY09–16, the company's sales have increased at a CAGR of 7.84 per cent to USD380.9 million
- * The company registered a sales of USD380.9 million in FY16 against sales of USD418.8 million in FY15

India Glycols Limited sales (USD million)



Source: Company Annual Report, TechSci Research
Notes: CAGR - Compound Annual Growth Rate,
TTM – Trailing Twelve Months

CHEMICALS



USEFUL INFORMATION

INDUSTRY ASSOCIATIONS

Indian Chemical Council

Sir Vithaldas Chambers, 16-Mumbai Samachar Marg,
Mumbai – 400023
Phone: 91 22 22047649/ 22846852
Fax: 91 22 22048057
Website: www.icmaindia.com

Alkali Manufacturers Association of India

3rd Floor, Pankaj Chambers, Preet Vihar Commercial Complex,
Vikas Marg, New Delhi – 110092
Phone: 91 11 22432003, 22410150, 55253401
Fax: 91 11 22468249
Website: www.ama-india.org

Indian Specialty Chemical Manufacturers' Association

1156, Bole Smruti, Suryavanshi Kshatriya Sabhagriha Marg,
Off. Veer Savarkar Marg, Dadar (West)
Mumbai – 400 028
Tel: 91 22 2446 5003
Website: www.iscma.in

- * **OCB:** Overseas Corporate Bodies
- * **NRI:** Non-Resident Indian
- * **FY:** Indian Financial Year (April to March)
 - * So FY10 implies April 2009 to March 2010
- * **NA:** Not Available
- * **STPP:** Sodium Tripolyphosphate
- * **MT:** Metric Tonnes
- * **USD:** US Dollar
- * Wherever applicable, numbers have been rounded off to the nearest whole number

EXCHANGE RATES

Exchange rates (Fiscal Year)

Year	INR equivalent of one USD
2004-05	44.81
2005-06	44.14
2006-07	45.14
2007-08	40.27
2008-09	46.14
2009-10	47.42
2010-11	45.62
2011-12	46.88
2012-13	54.31
2013-14	60.28
2014-15	61.06
2015-16	65.46
2016-2017E	66.95

Exchange rates (Calendar Year)

Year	INR equivalent of one USD
2005	43.98
2006	45.18
2007	41.34
2008	43.62
2009	48.42
2010	45.72
2011	46.85
2012	53.46
2013	58.44
2014	61.03
2015	64.15
2016 (Expected)	67.22

Source: Reserve bank of India,
Average for the year

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