

Chemicals

MARCH
2013



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Chemicals

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Contents

- ❖ Advantage India
- ❖ Market overview and trends
- ❖ Growth drivers
- ❖ Success stories: TATA Chemicals, UPL, Asian Paints
- ❖ Opportunities
- ❖ Useful information

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Advantage India

Demand potential

- A large population, agriculture dependency, and strong export demand are the key growth drivers for chemicals
- Per-capita consumption of chemicals in India is lower relative to Western peers and there is a large latent demand

Opportunities

- Polymers will benefit from strong growth in plastic demand
- Construction chemicals is another growth area given expected investment spike in infrastructure; by 2015, the segment's size is set to double relative to 2010

2017E

Market size:
USD290
billion

Advantage India

Increasing investments

- Lured by the size and returns of the Indian market, foreign firms have increased their presence
- From April 2000 to November 2012, total FDI inflows into the Indian chemicals industry (excluding fertilisers) was USD8.75 billion

Policy support

- 100 per cent FDI is permissible in the Indian chemicals sector; manufacturing of most chemical products are de-licensed
- The government has been encouraging R&D in the sector
- Setting up of PCPIRs

2011

Market size:
USD108
billion

Source: TATA strategic management group, Planning commission, Department of Industrial Policy and Promotion (DIPP), Aranca Research
Notes: PCPIR - Petroleum, Chemicals and Petrochemical Investment Regions; E - Estimated,

Chemicals

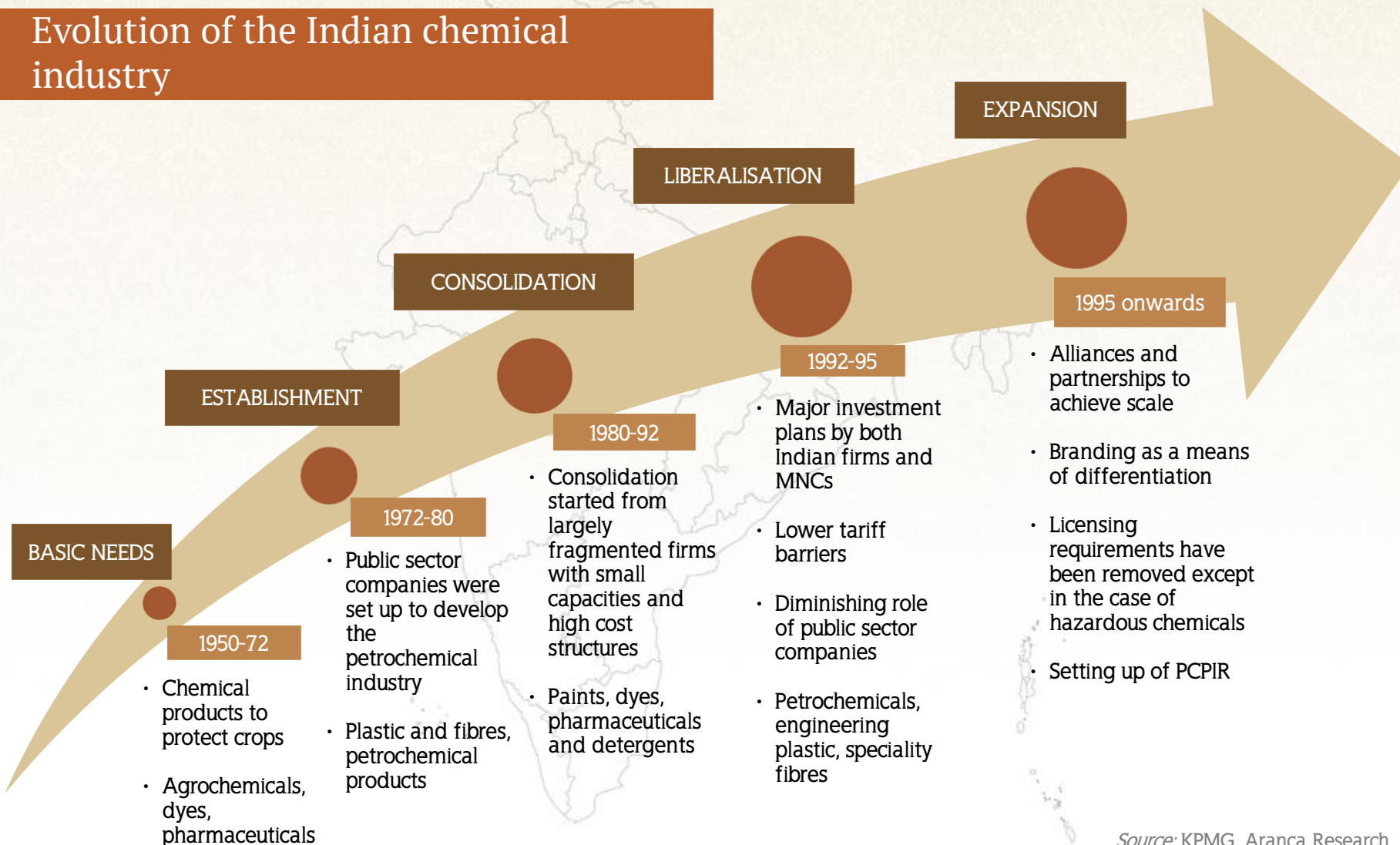
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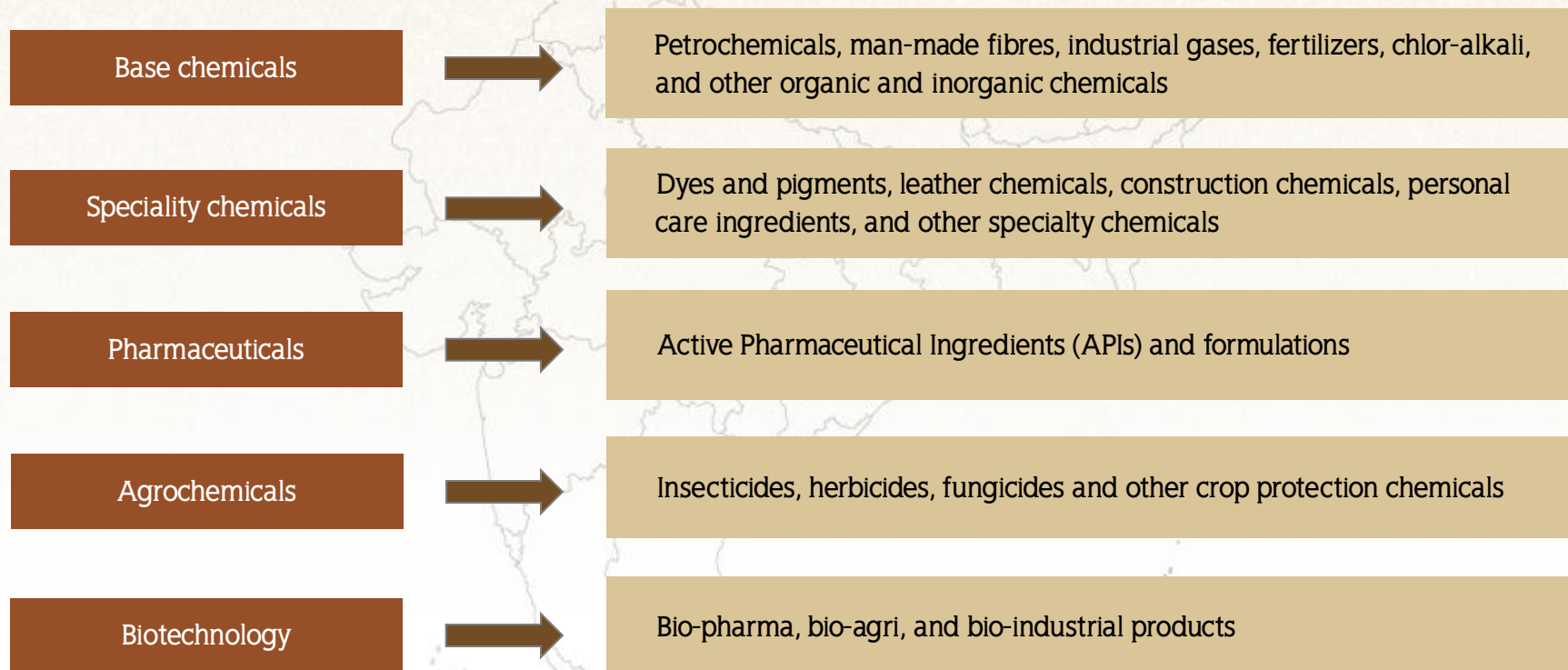
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Evolution of the Indian chemical industry



Source: KPMG, Aranca Research
Notes: MNC - Multinational Corporation

Major segments of the Indian chemical industry



Source: TATA Strategic Management Group, Aranca Research

Product-wise classification of the Indian chemical industry

Alkali chemicals

- Soda ash
- Caustic soda
- Liquid
- Chlorine

Inorganic chemicals

- Aluminum flouride
- Calcium carbide
- Carbon black
- Potassium chlorate
- Titanium dioxide
- Red phosphorus

Organic chemicals

- Acetic acid
- Acetone
- Phenol
- Methanol
- Ortho Nitro Chlorobenzene (ONCB)
- Isobutyl
- Para Nitrochlorobenzene (PNCB)
- Ethyl

Pesticides and insecticides

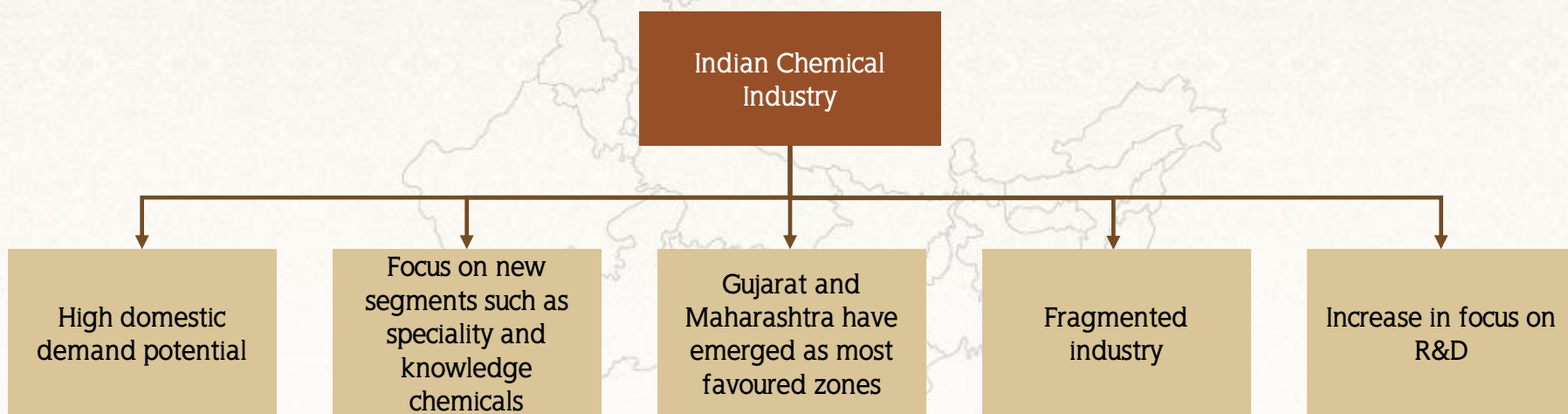
- Dichlorodiphenyltri chloroethane (DDT)
- Malathion
- Parathion
- Ethicon
- Endosulphan
- Phosalone
- Phorate
- Acephate
- Fenvalerate

Dyes and dyestuffs

- Azo dyes
- Disperse dyes
- Fast colour bases
- Ingrain dyes
- Napthols
- Vat dyes
- Reactive dyes
- Pigment Emulsion

Sources: Aranca Research

Characteristics of the Indian chemical industry

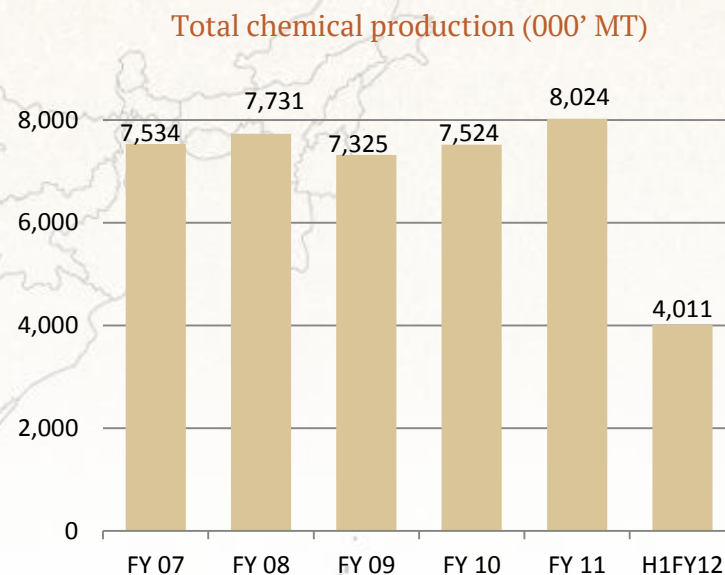


- The industry has changed over time to meet the dynamic needs of an emerging economy
 - Strong economic growth and rise in per-capita incomes has meant a steady increase in demand for chemicals
- The industry has left behind a low-growth and regulated environment to emerge more mature
- There is strong government support towards R&D, a fact that will benefit the sector in the future as well

Sources: KPMG international 2011, Aranca Research
Notes: R&D - Research and development

Both domestic and external demand driving growth in the sector ... (1/2)

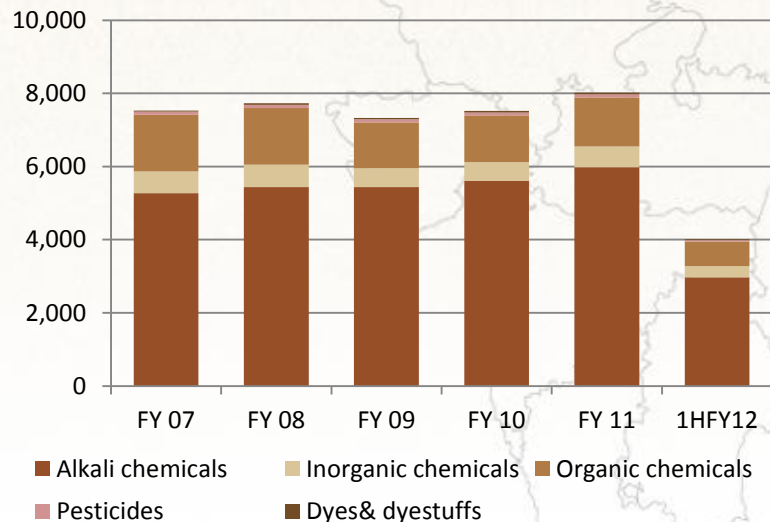
- Total production in the Indian chemical industry was 8,024 MT in FY11, a 7 per cent rise over FY10
 - Figures available for FY12 indicate that by the end of the first half of the fiscal, production stood at about half of FY11 levels
- Favourable demographics and strong economic growth are driving demand 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 future



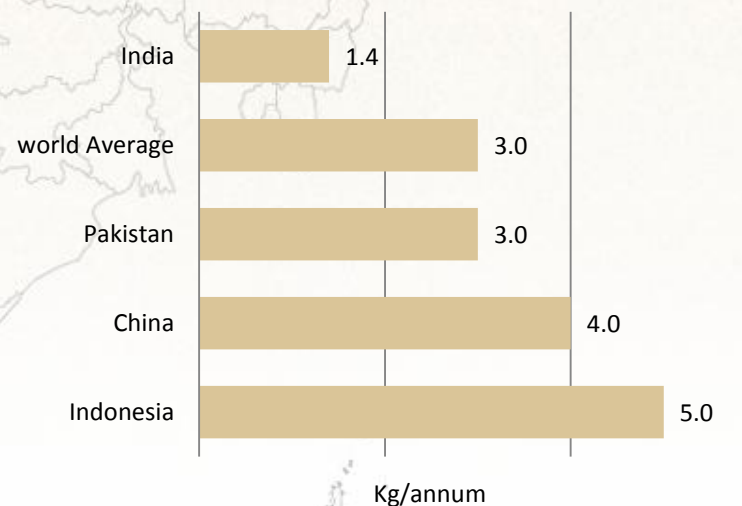
Source: Department of Chemicals and Petrochemicals,
Aranca Research
Note: MT - Metric Tonne,
1HFY12 - Data up to September 2011

Both domestic and external demand driving growth in the sector ... (2/2)

Production of major chemicals (000' MT)



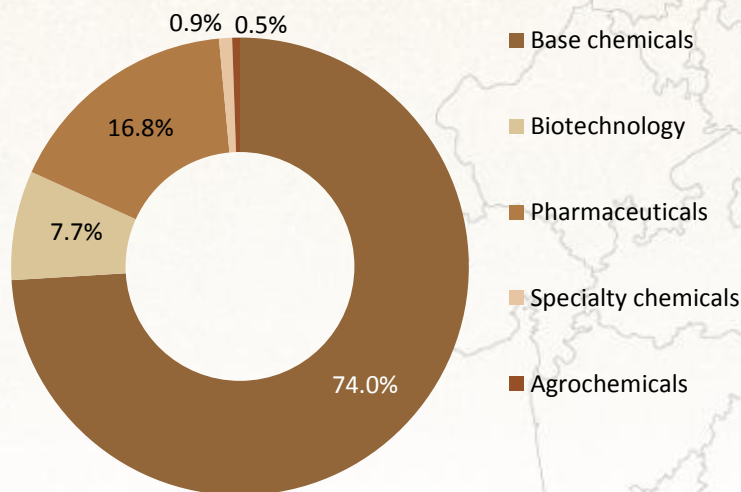
Annual per-capita polyester consumption (2010)



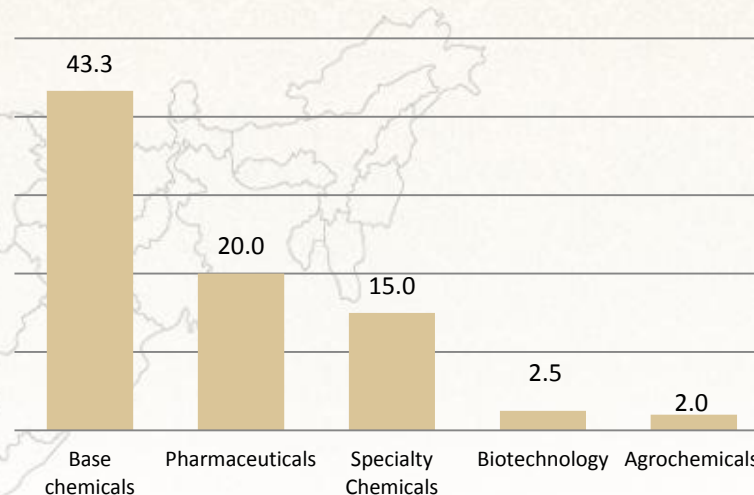
Source: Department of Chemicals and Petrochemicals, Aranca Research
 Note: MT - Metric Tonne, 1HFY12 - Data up to September 2011
 Kg: Kilo gram,

Base chemicals account for more than half of total production

Shares in production in H1FY12



Production of chemicals in FY10 (USD billion)

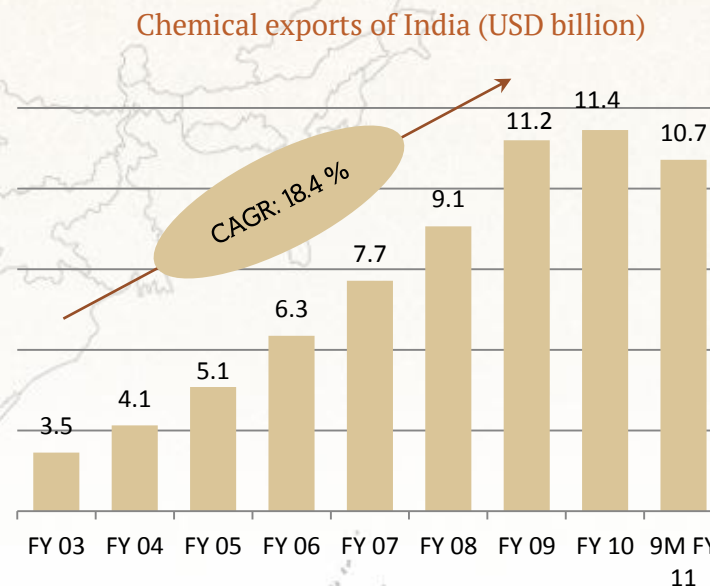


- Base chemicals covers three fourth (74 per cent) of the Indian chemical industry followed by pharmaceuticals (16.8 per cent) and biotechnology (7.7 per cent)
- Agrochemicals and speciality chemicals are the minor components of the sector accounting for 0.5 per cent and 0.9 per cent of production in 1HFY12
- Speciality chemicals are relatively high valued; The sector is rapidly growing and have a diverse end-product market

Source: Department of Chemicals and Petrochemicals, Aranca Research
Note: H1FY12 - First six months of FY12 (Apr - Sep)

Exports have been rising over the years...

- Chemicals constitutes more than 14 per cent of India's total exports
- Total exports of chemicals grew from USD3.6 billion in FY03 to USD11.4 billion in FY10, a CAGR of 18.4 per cent
- Exports of the Indian chemical industry stood at USD10.7 billion for the first nine months of FY12 (Apr - Dec 2011)

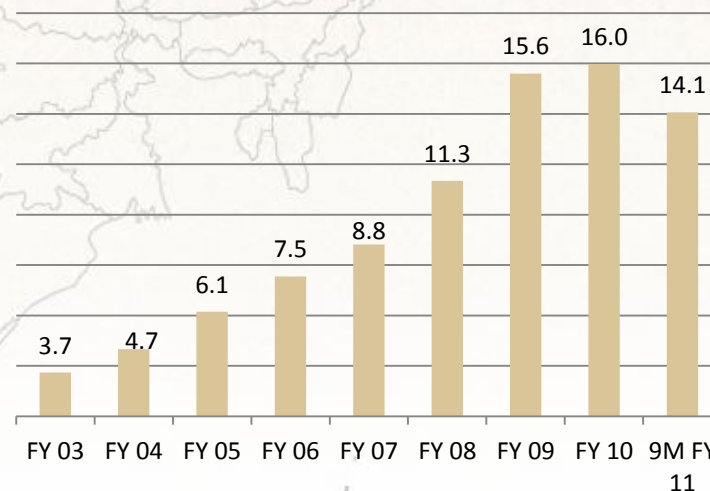


Source: Department of Chemicals and Petrochemicals,
Aranca Research
Note: Data for FY11 is up to December 2011

...but, India is a net importer of chemicals

- India has been a major importer of chemicals; the sector made up 9 per cent of India's total imports in FY10
- Total imports of chemicals reached USD14.1 billion in the first three quarters of FY11; in FY10 imports had stood at USD16.0 billion

India's chemical imports (USD billion)

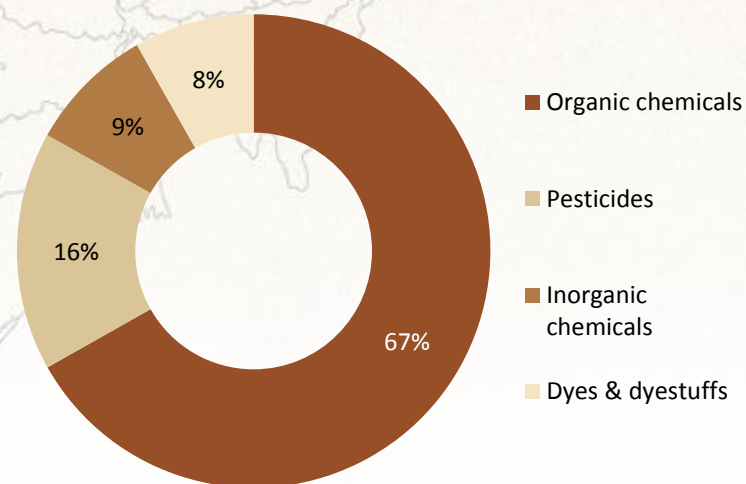


Source: Department of Chemicals and Petrochemicals,
Aranca Research
Note: Data for FY11 is up to December 2011

Organic chemicals dominate both exports and imports ... (1/2)

- Organic chemicals constitute more than 67 per cent of India's total chemical exports, followed by pesticides at 16 per cent (FY10)
- Over FY02-10 pesticide exports rose at a CAGR of 26 per cent; for organic chemicals the figure was 21 per cent

Shares in exports of chemicals in FY10

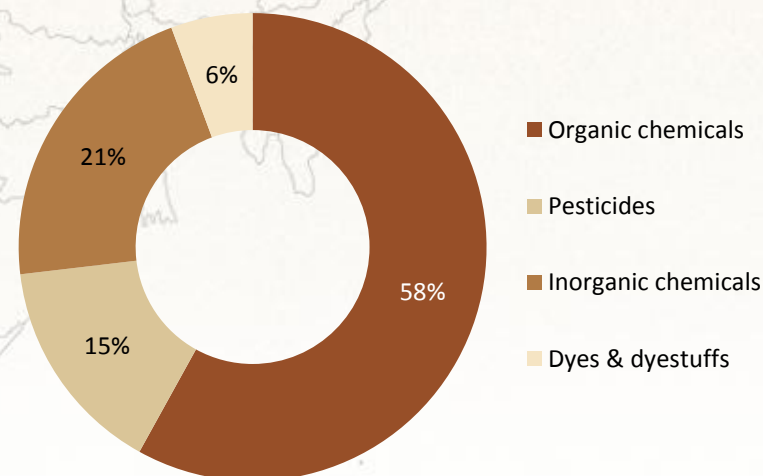


Source: Department of Chemicals and Petrochemicals,
Aranca Research

Organic chemicals dominate both exports and imports ... (2/2)

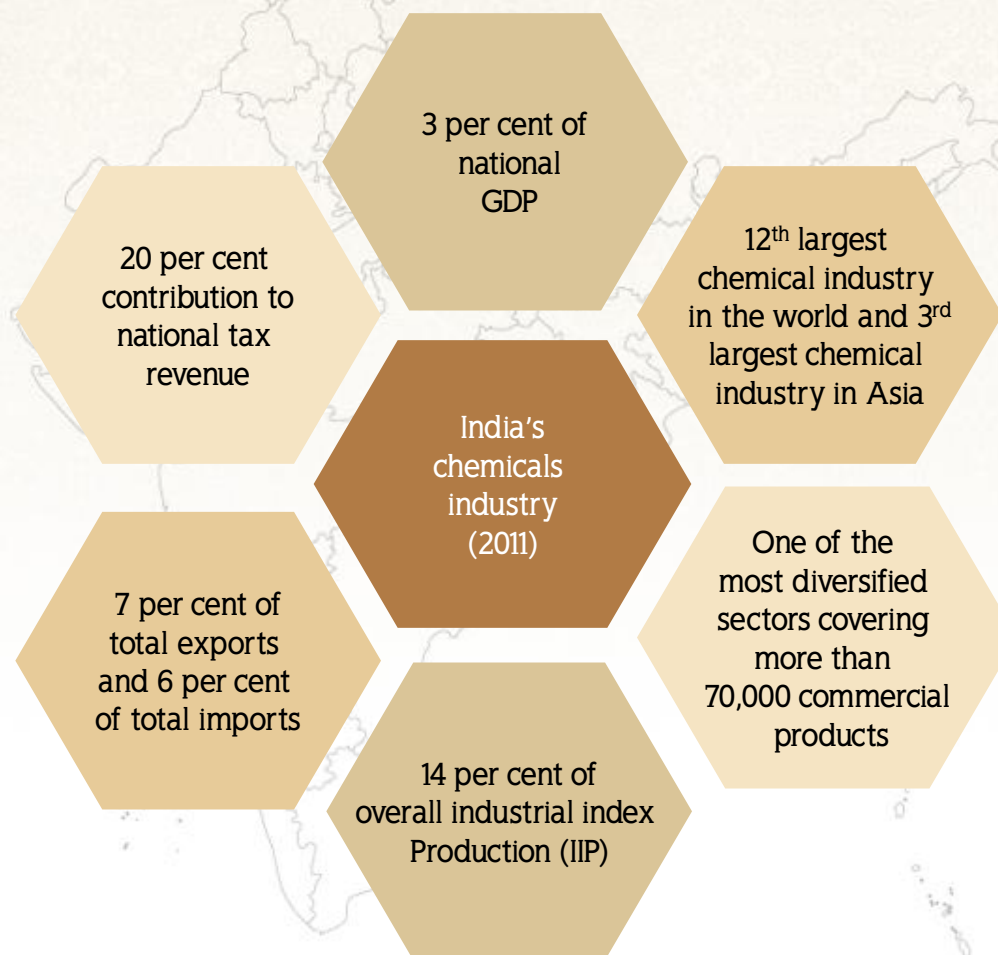
- Among chemical imports, organic chemicals also dominate with a share of 58 per cent followed by pesticides at 15 per cent (FY10)
- Over FY02-10 pesticide imports rose at a CAGR of 54 per cent followed by organic chemicals (22.5 per cent)

Shares in imports of chemicals in FY10



Source: Department of Chemicals and Petrochemicals, Aranca Research

Chemical industry holds a significant position in the economy



Source: Ministry of Environment and Forests, Central Pollution Control Board, Aranca Research
Note - Figures mentioned above is taken from Dept. of Chemicals and Petrochemicals

High growth would lead to rising global positioning

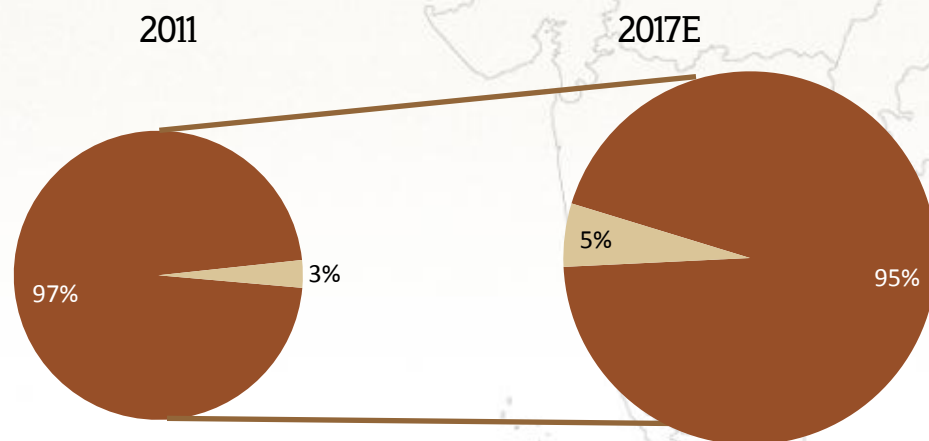
2011

- Global chemical industry: USD3.4 trillion
- India chemical industry: USD108 billion

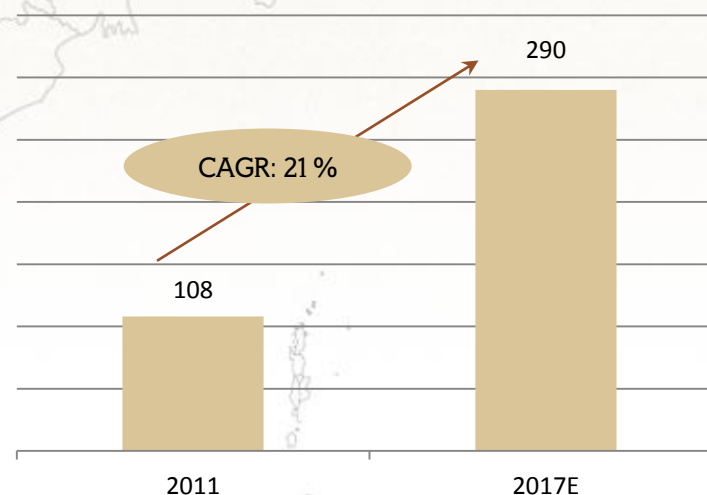
2017E

- Global chemical industry: USD5 trillion
- India chemical industry: USD290 billion

Contribution to global chemical industry will increase



Strong growth outlook for the Indian chemicals industry

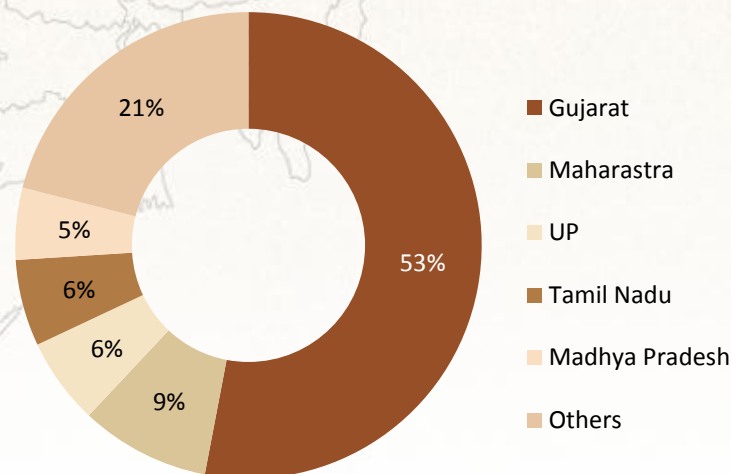


Source: TATA Strategic Management Group, Planning Commission, Aranca Research

Widespread chemical industry infrastructure across India ... (1/2)

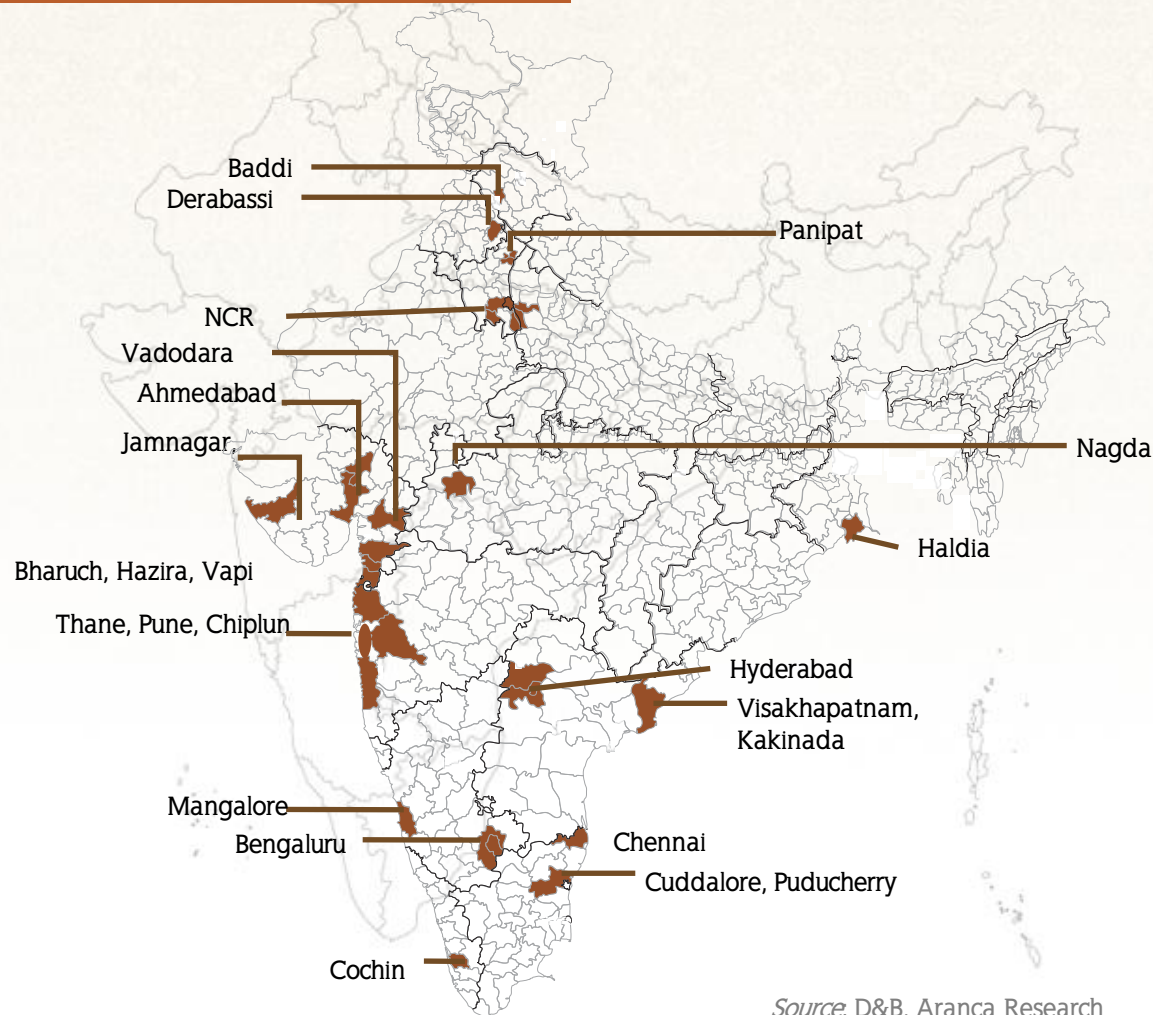
- Though the sector is spread across the country, there is relatively high concentration along the west coast due to proximity to raw materials and ports
- Gujarat alone is estimated to contribute about 53 per cent to total production in the country
- Gujarat and Maharashtra emerged as the most favoured zones for the industry, mainly because of government policies, strategic location, and availability of raw material

Regional concentration of basic chemical industry (FY11)



Source: India - Chem, TATA Strategic Management Group, Planning Commission, Aranca Research
Note: MoU - Memorandum of Understanding

Widespread chemical industry infrastructure across India ... (2/2)

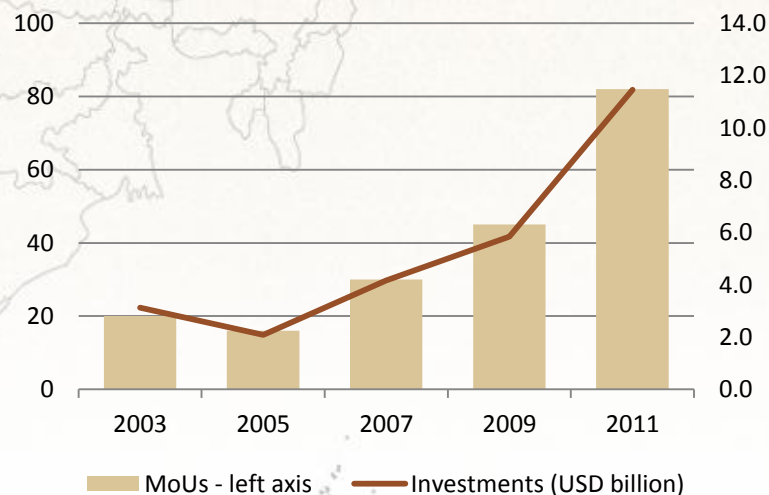


Source: D&B, Aranca Research

Gujarat: The chemicals hub of India

- With the presence of world class production facilities of Indian and multinational chemical manufacturers, Gujarat houses 53 per cent of India's manufacturing capacity of chemicals
- Reliance Industries, ONGC, Dow Chemicals, Cheminova, Lanxess, Gujarat State Fertilizers & Chemicals Ltd (GSFC), Gujarat Alkalis & Chemicals Ltd (GACL) and many other companies have their production facilities in Gujarat
- Government support, world class infrastructure, strategic location, availability of talent and raw material makes Gujarat a preferred location for chemical plants
- The Dahej PCPIR has been the most successful one; it is spread over an area of around 453 sq km and has attracted investments to the tune of USD25 billion

Proposed investments by chemical manufacturers in Gujarat



Source: India Chem, Aranca Research
Note: PCPIR - Petroleum, Chemicals and Petrochemical Investment Regions

Key domestic and international players in Indian chemicals ... (1/2)

Domestic company	Sales in FY12 (USD billion)	Products
Tata Chemicals Limited (TCL)	2.8	Soda ash, salt, marine chemicals, caustic soda, cement etc.
United Phosphorus Limited (UPL)	1.6	Agrochemicals
Nirma Ltd	1.0*	Alkyl benzene, alfa olefin sulphonate, sulfuric acid, soda ash
Gujarat Heavy Chemicals Ltd (GHCL)	0.41	Soda ash
Gujarat Alkalies and Chemicals Ltd (GACL)	0.35	Caustic soda
Solaris Chemtech Industries Ltd	0.05*	Bromine and bromine chemicals

Sources: Company annual reports, Aranca Research
Note: * - FY11

Key domestic and international players in Indian chemicals ... (2/2)

International Company	Sales in 2011 (USD billion)	Products
BASF	98.5	Chemicals, plastics, performance and nutrition products
The Dow Chemicals	60	Specialty chemicals, agrochemicals and plastics
Bayer	19.3	Agrochemicals, pharmaceuticals, polymers, technology services
E. I. du Pont de Nemours and Company	38	Specialty and fine chemicals
INEOS ABS India	.16*	PVC films and specialty resins
AkzoNobel	21	Coatings, decorative paints and specialty chemicals
Evonik Industries	22	Specialty chemicals
Lanxess	11.8	Plastics, rubber, specialty chemicals and intermediates
Wacker Chemie	6.6	Silicone, polymer, specialty and fine chemicals

Sources: Company ANR, Aranca Research

Note: * sales for Indian entities for FY 2011-12 in Million USD

Chemicals

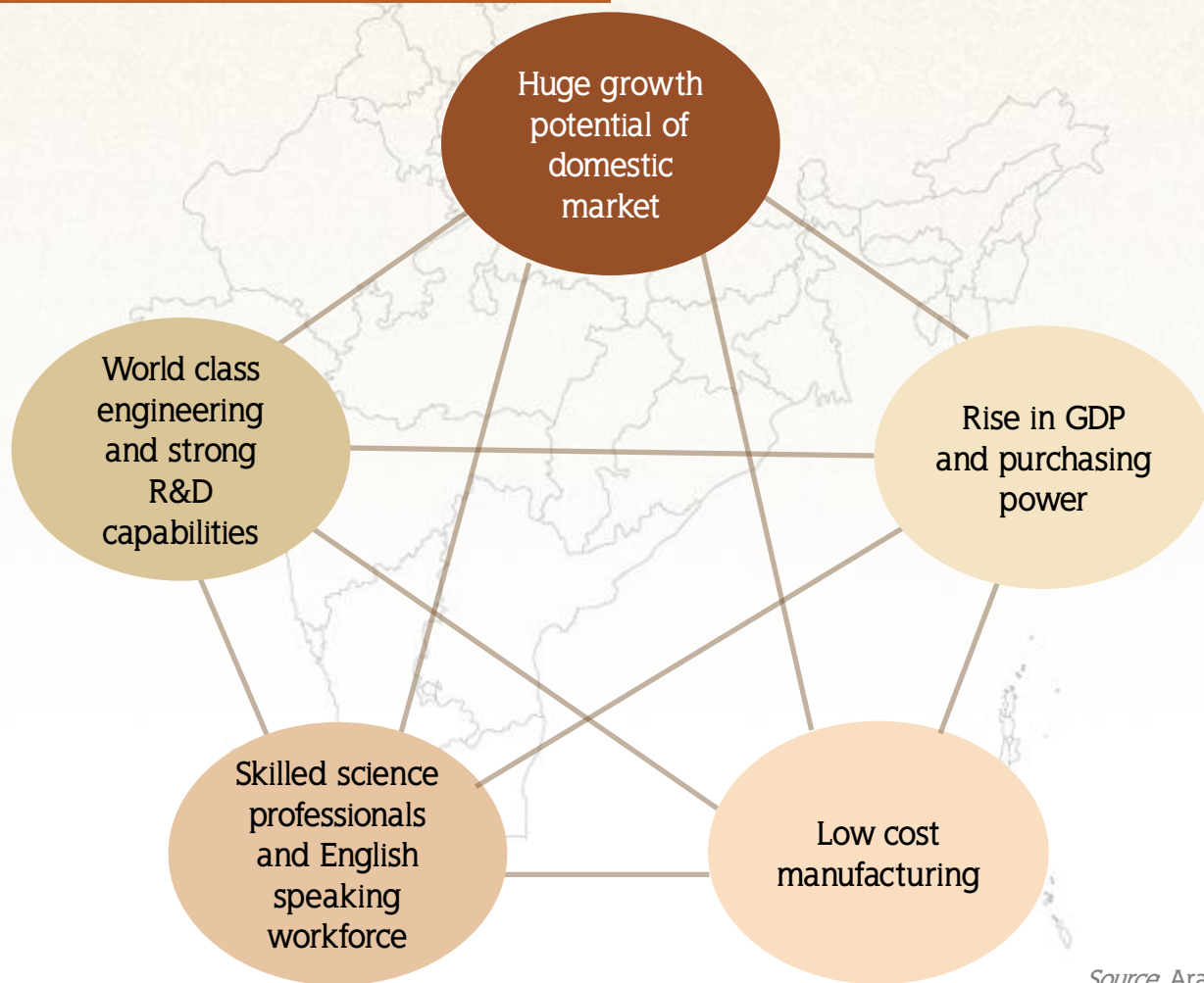
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Growth drivers of the Indian chemical industry

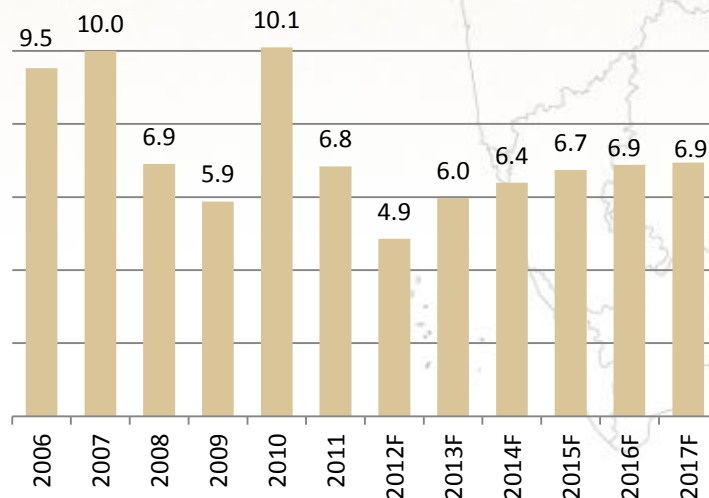


Source: Aranca Research

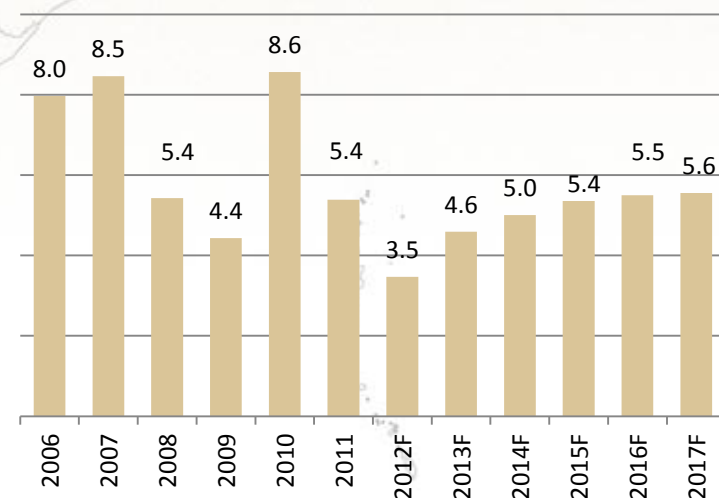
Economic expansion will continue to drive growth in the chemical industry

- 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 - that 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 few of the other major growth drivers of the chemicals sector

Real GDP growth



Per-capita GDP growth

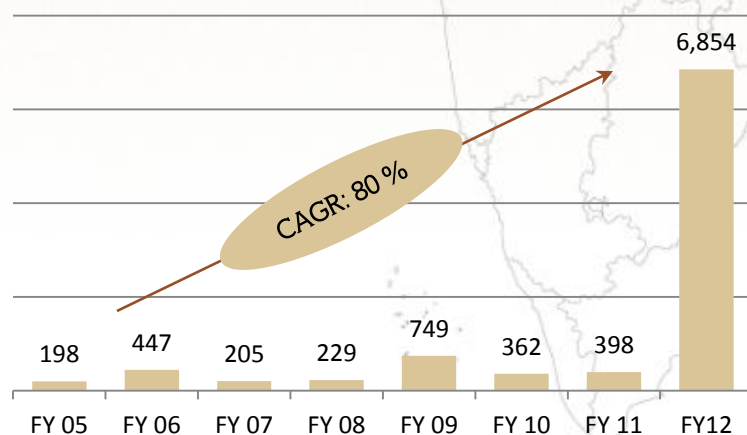


Source: IMF WEO, Aranca Research

Policy support for foreign investment

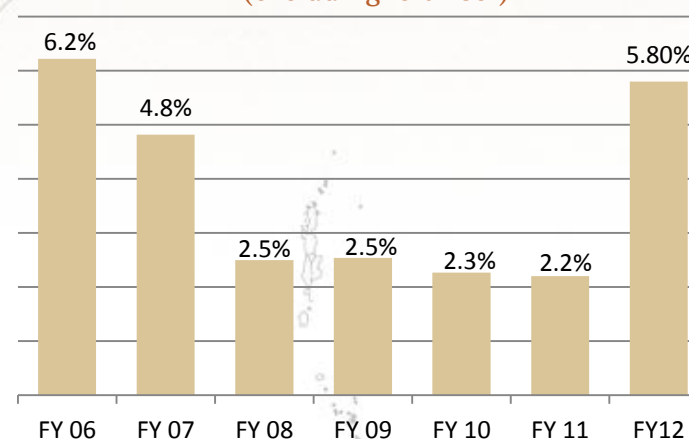
- FDI in chemicals (other than fertilisers) has grown at a CAGR of 80 per cent over FY05-12; cumulative FDI for the period April 2000 - August 2012 stood at USD8,691.9 million
- Procedures relating to FDI have been simplified; most of the items in the chemicals sector fall under the automatic approval route for FDI/NRI/OCB investment up to 100 per cent
- The USD7.2 billion deal between Reliance Industries Limited and British Petroleum is the most significant deal in Indian chemical sector, driving total FDI inflow to USD5.5 billion in FY12

Annual FDI inflow to the chemical industry
(excluding fertiliser)



Notes: NRI - Non-resident Indian,
OCB - Overseas Commercial Bodies

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



Sources: Department of Industrial Policy & Promotion,
Ministry of Commerce and Industry, Aranca Research

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*
Project based support to PSUs	29.1	4.3	0.0	8.3
Support to autonomous bodies	19.2	0.1	0.2	1.5
Other ongoing schemes	44.2	165.8	183.4	325.8
New schemes initiated in XI plan	25.0	17.9	10.1	30.5
Total	117.5	188.1	193.8	366.0

Source: Department of Chemicals and Petrochemicals,
Aranca Research
Note: * - Budgeted estimate

Government support to the sector is increasing ... (2/2)

All figures are in USD million

Name of the scheme	Plan outlay (FY10)	Plan outlay (FY11)	Non Plan outlay (FY10)	Non Plan outlay (FY11)	Non Plan outlay (FY12)
Secretariat	0.04	0.13	2.21	2.52	2.79
Central Institute of Plastics Engg. & Technology (CIPET)	4.19	15.42	0.63	0.10	0.10
Assam Gas Cracker Project	65.90	164.94	0.00	0.00	0.00
Chemical Weapons Convention (CWC)	0.17	0.21	0.00	0.00	0.00
Hindustan Insecticides Ltd (HIL)	5.19	3.13	0.00	0.00	0.00
Others	4.19	1.30	0.50	0.54	0.63
Total	83.94	188.13	4.31	158.46	4.58

Source: Department of Chemicals and Petrochemicals, Aranca Research

Growth, competitiveness and process initiatives

- The government has announced a number of measures to improve competitiveness in the sector
- Industrial licensing has been abolished for most sub-sectors (except a small list of hazardous chemicals)
- Approval is being granted for FDI up to 100 per cent in the chemicals sector
- The government is continuously reducing the list of reserved chemical items for production in the small-scale sector, thereby facilitating greater investment in technology up-gradation and modernization
- Policies have been initiated to set up integrated Petroleum, Chemicals and Petrochemicals Investment Regions (PCPIR). PCPIR will be an investment region spread across 250 square kilometers for manufacturing of domestic and export related products of petroleum, chemicals and petrochemicals
- 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
- Indian chemical firms have in place technical agreements with multinational firms to keep abreast of technological progress in the global chemical industry

Sources: EXIM Bank of India, Aranca Research,

Note: PCPIR - Petroleum, Chemicals and Petrochemicals Investment Regions

Milestones proposed for 12th Five Year Plan

Infrastructure

- Make PCPIRs a reality
- Provide infrastructure support to the industry by building roads, ports and other similar facilities

Feedstock

- Implementation of strategy for sourcing and allocation of feedstock

R&D and Technology

- 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

Sustainability

- 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

Regulations

- Committee to frame regulatory structure and remove redundancies
- Rationalisation of taxes and duties for the sector (to be implemented by 2014)
- Setting up of a national chemical inventory

Sources: Aranca Research

Note: PCPIR - Petroleum, Chemicals and Petrochemicals Investment Regions

Recent major M&A deals in the Indian chemical industry ... (1/2)

	Acquirer	Target/ JV partner	Valuation	Synergies/ drivers
Inbound				
September-12	Chemtura Corporation	Solaris Chemtech Industries	USD142 million	Increase in bromine production capacity
March-11	Bain Capital	Himadri Chemicals	USD89 million	Investments
April-11	Huntsman Corp.	Laffans Petrochemicals	NA	To acquire ethylene oxide facility
July-10	Abott laboratories	Piramal's domestic formulations business	USD3.7 billion	Abott: Increased market share; Piramal: Focus on core business
Outbound				
April-12	Kanoria Industries Ltd	APAG Holding	USD1.6million	Diversification into designing and engineering
July-11	United Phosphorus	DVA Agro-Brazil	USD150 million	Production, marketing crop protection products
June-11	BASF India	Cognis chemicals	USD2.9 million	Speciality chemicals
April-11	Tata Chemicals	Gabon (Government project)	USD290 million	Access to huge potash reserves
Jun-10	United phosphorus	DuPont's fungicide Business	NA	UPL: Access to South and Central America DuPont: Focus on core business
May-10	Piramal	BioSyntech, Canada	USD3.7 million	Piramal: Access to technology

Source: Department of chemicals and petro chemicals, Aranca Research

Recent major M&A deals in the Indian chemical industry ... (2/2)

	Acquirer	Target/ JV partner	Valuation	Synergies/ drivers
Domestic				
April-11	Aditya Birla Group	Kanoria Chemicals	USD172 million	Increase in caustic soda capacity
May-10	Piramal	CIPLA's 'i-pill'	USD21 million	Piramal: Brand extension

Source: Department of chemicals and petro chemicals, Aranca Research

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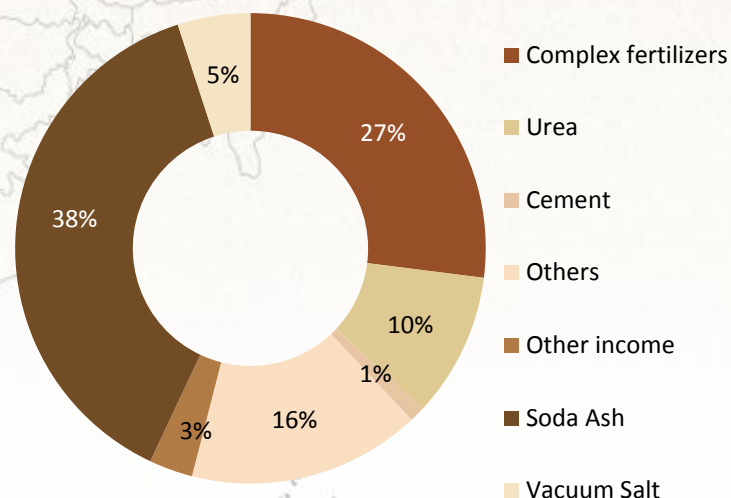
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TATA Chemicals: Diversifying their way to success ... (1/2)

- 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 fertilizer producer in India; amongst the most efficient globally
- 1/3rd stake holder in IMACID, Morocco - assured supply of key inputs

Source: TATA strategic analysis, Aranca Research
Notes: STPP* - Sodium tripolyphosphate
IMACID - Indo Maroc Phosphore S.A.

Revenue breakup of TATA chemicals (FY12)



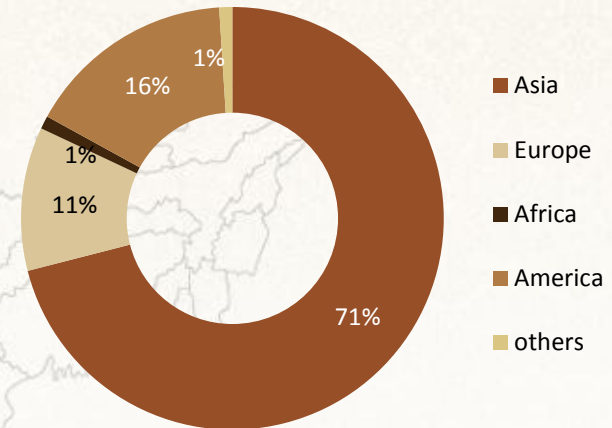
TATA Chemicals: Diversifying their way to success ... (2/2)

Growth path

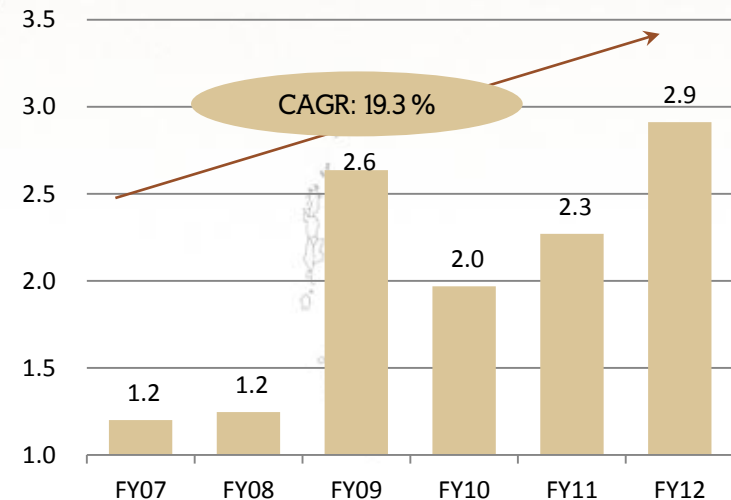
- 2004: Merger of Hind Lever Chemicals Ltd with Tata Chemicals
- 2005: The first step towards internationalisation with stake in IMACID
- 2006: Acquires US-based General Chemical Industrial Products Inc
- 2009: Acquires controlling stake in Rallis India Limited
- 2010: Acquires South Africa's Grown Energy
- 2011: Tata Chemicals Europe Ltd acquires British Salt, producing approximately half of the UK's pure salt
- 2012: India's first iodine plus iron fortified salt launched by Tata Chemicals

Notes: IMACID - Indo Maroc Phosphore S.A.

Geographical diversification (FY12)

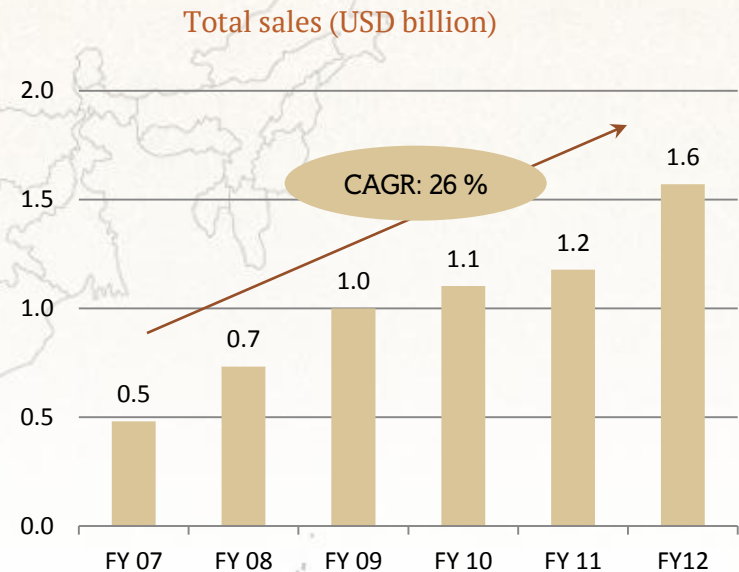


Turnover over the years (USD billion)



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 accounts for 80 per cent of total sales of the company while the industrial chemicals and intermediates segment accounts for 19 per cent
- UPL has 23 manufacturing sites - nine in India, four in France, two in Spain, three in Argentina, and one each in UK, Vietnam, Netherlands, Italy, China
- The company has also strengthened its distribution reach and access to new markets through strategic alliances with other agrochemical manufacturers of the world
- The company is planning to commence innovative technology, farming solutions, and new products through its other arms such as Advanta and Golden Seeds



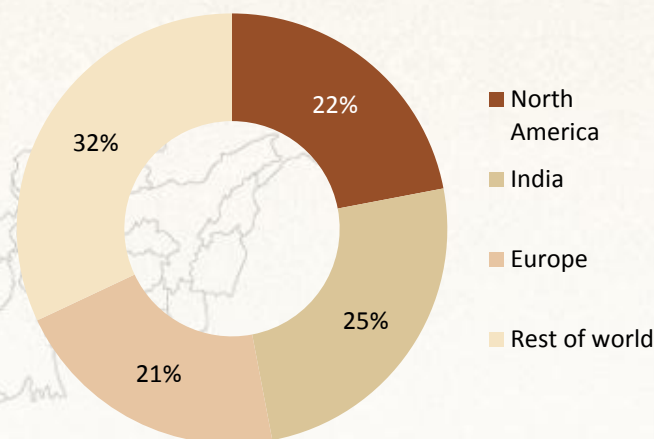
Source: United Phosphorus Limited (UPL) Annual Reports, Aranca Research

United Phosphorus Limited(UPL): An agrochemical success ... (2/2)

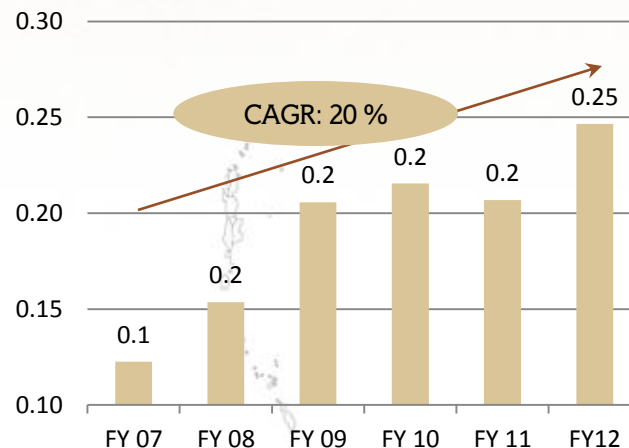
- Exports accounts for 53 per cent of total sales
- A big advantage for the company is that its cost of production of agrochemicals in India is low
- Acquired DVA-Agro of Brazil in July 2011 for USD150 million; this along with other various successful acquisitions, the company has gained access to global markets and is in a position to offer an extensive and balanced product portfolio to its customers worldwide
- UPL has acquired 100 per cent stake in the Dutch company Agrichem which will help gain access to the European market
- The company holds more than 1000 registrations for its products worldwide

Notes: EBIDTA - Earnings Before Interest, Taxes, Depreciation and Amortization

Income by region - FY12

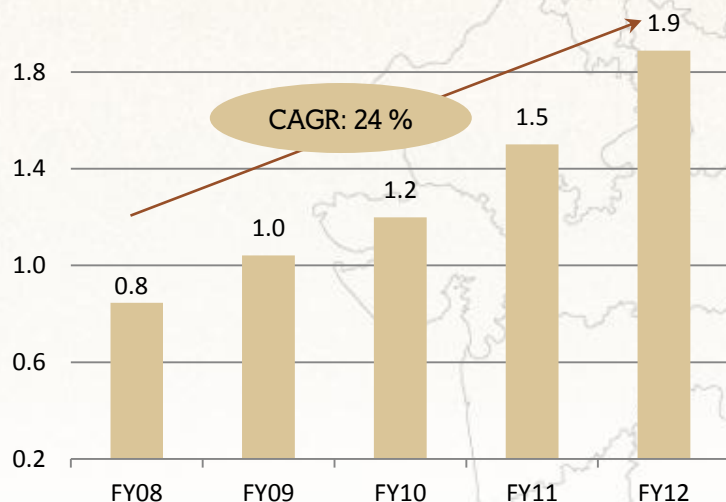


EBIDTA (USD billion)

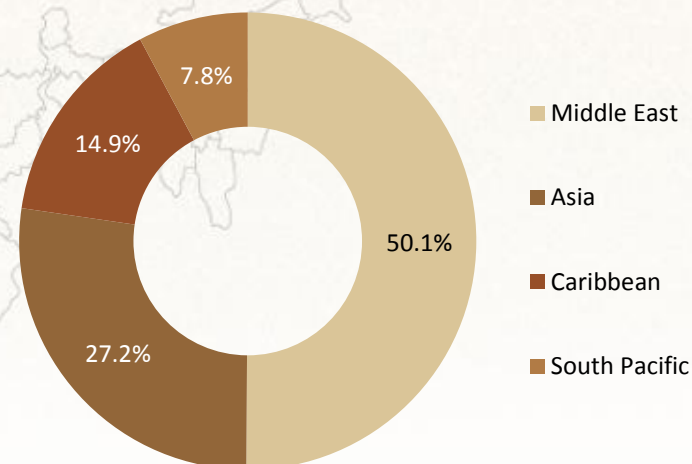


Asian Paints: A colourful growth path

Asian Paints sales (USD billion)



Asian Paints geography wise sales (FY12)



- In 1942, started manufacturing in a Mumbai garage; now with total installed capacity of 6,44,000 KL, Asian Paints is amongst the largest paint manufacturing companies in the world
- Asian Paints has grown at an excellent pace over the years; CAGR of 24 per cent from FY08-FY12
- Seventh decorative paint plant coming up in Maharashtra; it is expected to be commissioned by the end of FY13 with an initial capacity of 300,000 KL per annum
- The company has wide presence across all home decorative products and geographies
- Forbes magazine featured Asian Paints in Asia's Fab 50 List (2012) of companies

Source: Company Annual report, Aranca Research
Note: KL - Kilo Litre

Chemicals

MARCH
2013

Contents

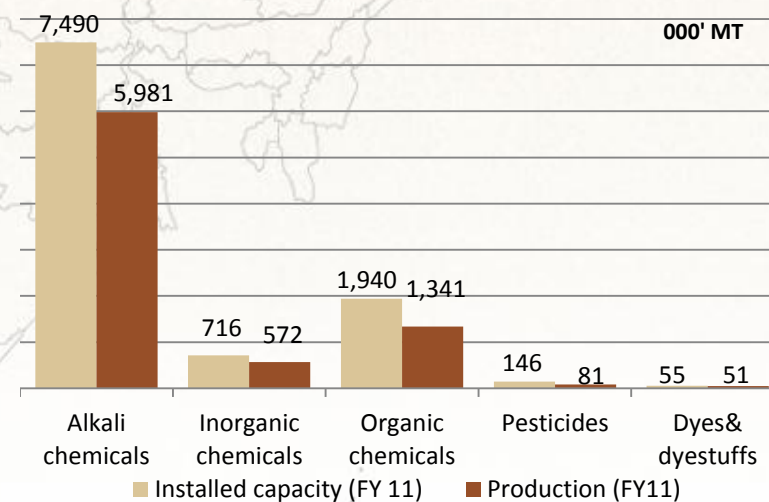
- ❖ Advantage India
- ❖ Market overview and trends
- ❖ Growth drivers
- ❖ Success stories: TATA Chemicals, UPL, Asian Paints
- ❖ Opportunities
- ❖ Useful information

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Immense growth potential for chemical industry in India ... (1/2)

- The industry as a whole operates much below installed capacity - under 77.6 per cent in FY11
- The 'alkali' segment (more than 74 per cent share) operated below 80 per cent of installed capacity in FY11; the figure for 'pesticides' was 56 per cent
- Only the dyes-related segment operated at high capacity (93 per cent)

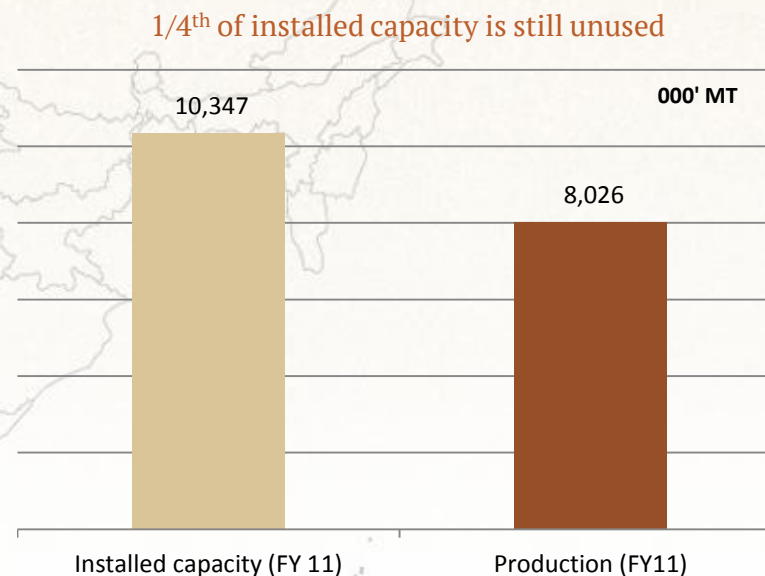
Installed capacity and production of selected major chemicals



Source: Department of Chemicals and Petrochemicals, Aranca Research

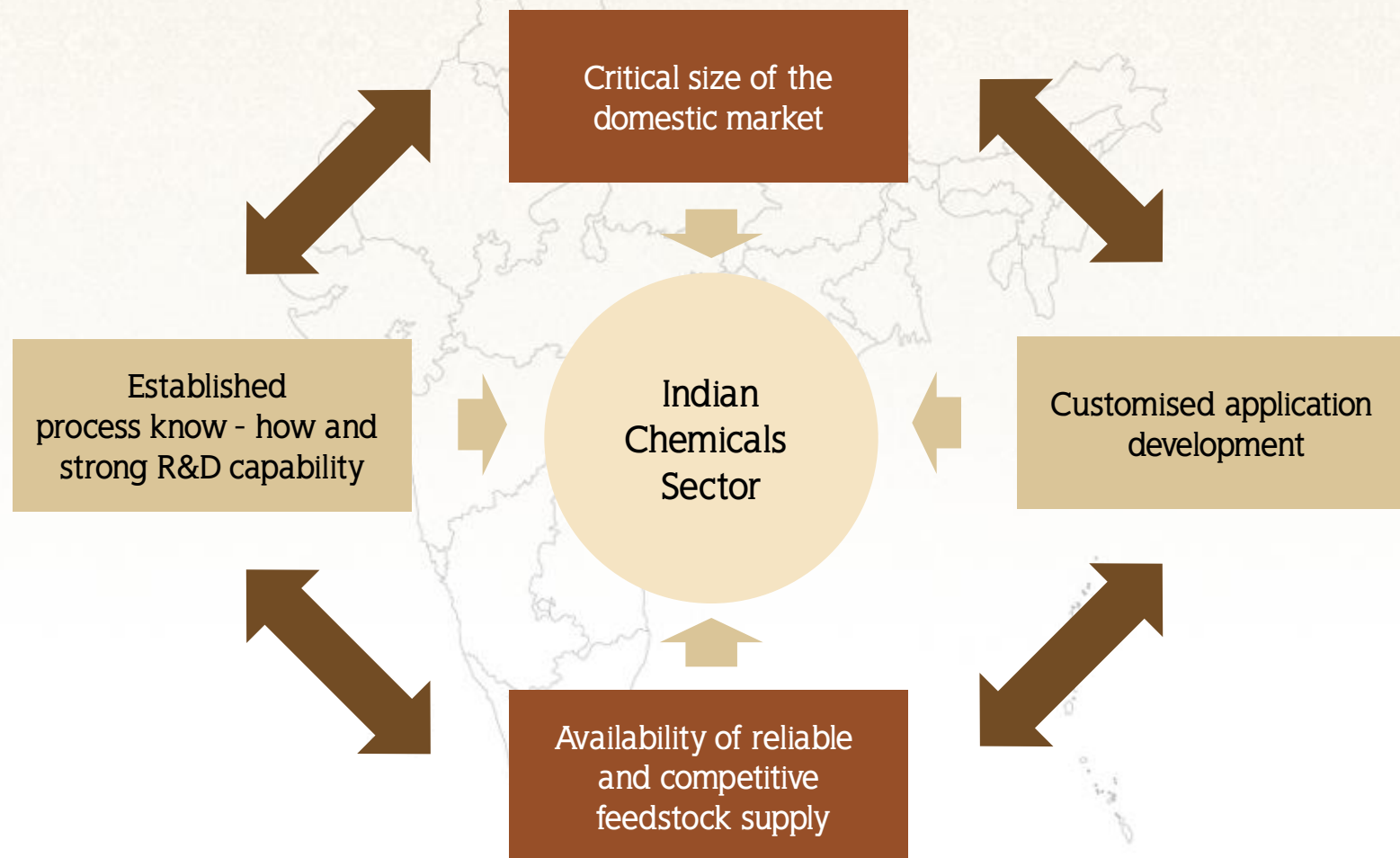
Immense growth potential for chemical industry in India ... (2/2)

- Strong demand growth - both domestic and external - will drive chemical industry production in future
- Government policy support and domestic environment pushing industry growth towards double digits



Source: Department of Chemicals and Petrochemicals,
Aranca Research

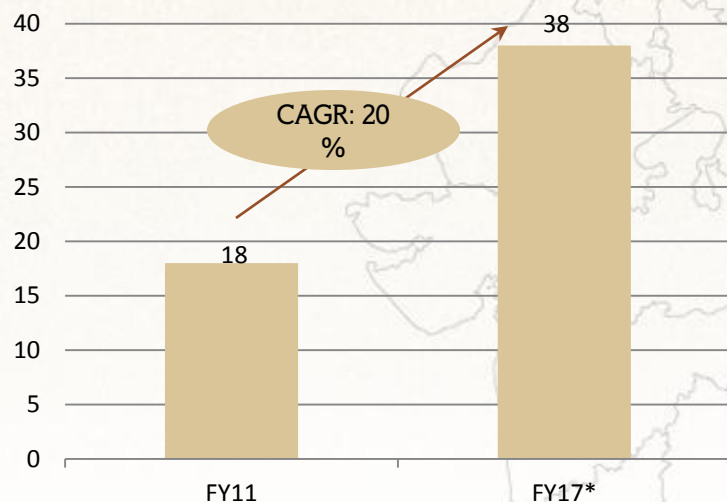
Growth value proposition of Indian chemical industry



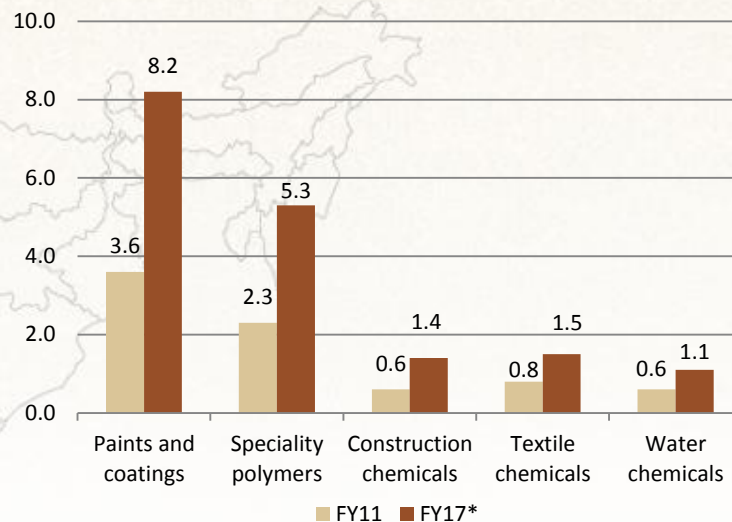
Sources: KPMG international 2011, Aranca Research

Specialty chemicals: Lucrative opportunities in this segment

Specialty chemical growth outlook (USD billion)



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



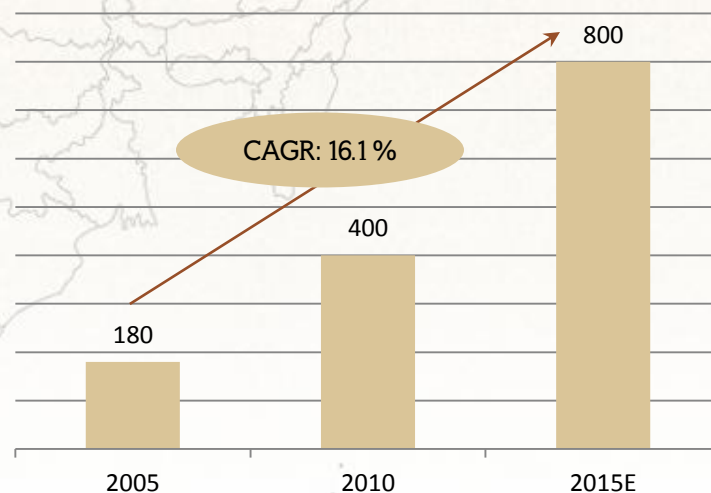
- Specialty chemicals market has expanded at a CAGR of about 13 per cent over FY07-11; the figure is expected to rise to 20 per cent over the next five years
- The Indian middle-class is expected to grow from 31 million households in 2008 to 148 million households by 2030. This will lead to huge demand of specialty chemicals in automotives, water treatment, and construction and thus the market size is expected to reach USD38 billion by FY17
- 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

Source: Dept. of Chemicals and Petrochemicals, Planning Commission, Aranca Research
Note: * - Estimates

Within specialty chemicals, construction chemicals is likely to shine

- India's construction chemical sector consists of a variety of products ranging from admixtures to sealants. Admixtures forms the largest segment with a 35 per cent share followed by flooring chemicals (15 per cent) and water proofing chemicals (10 per cent)
- The size of the domestic market is however very small compared to the global one
- Nevertheless, with the construction sector expected to pace ahead due to strong economic growth, the fundamentals for construction chemical are sound
- By 2015, the construction chemicals sector is set to touch USD800 million, up from USD400 million in 2010

Construction chemical growth outlook (USD million)



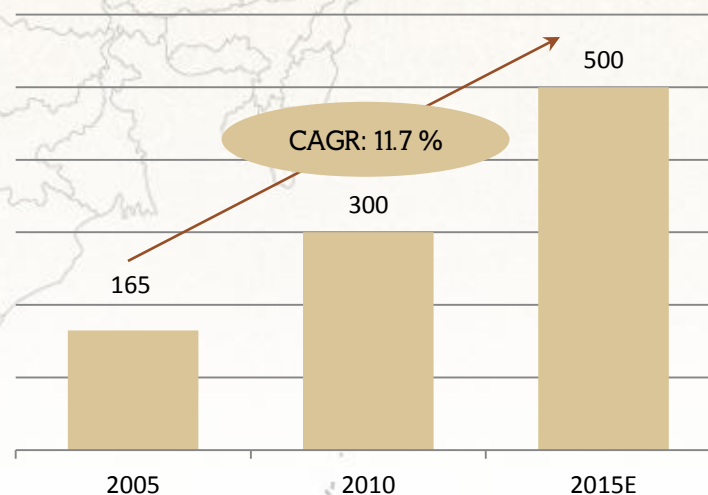
Source: TATA strategic analysis, Aranca Research

Polymer chemicals will be yet another key segment of specialty chemicals

Polymer chemicals

- The Indian polymer chemical market has expanded at a CAGR of 10.5 per cent in the last five years
- Polymer market is expected to expand at a CAGR of 11.7 per cent over 2005-2015 to USD 500 million
- The sector is expected to grow at a higher rate due to growth in plastic demand due to increased usage in packaging, construction and automotive sectors
- Due to increasing environmental concerns and cost plastic is replacing of wood, metal and glass by plastic will also augment demand

Polymer chemical growth outlook (USD million)

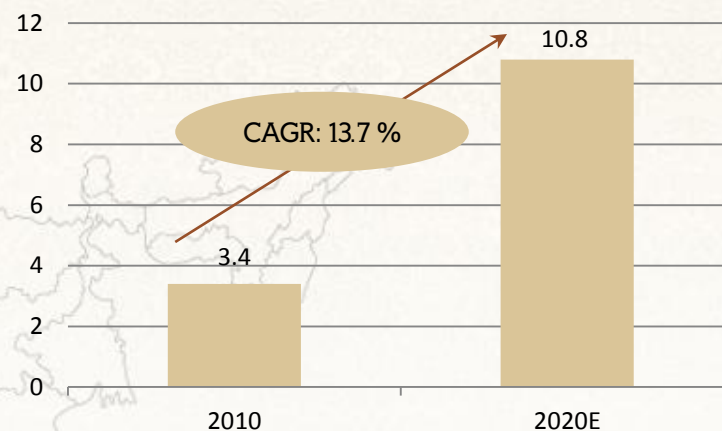


Source: TATA strategic analysis, Aranca Research
Note: E - Estimates

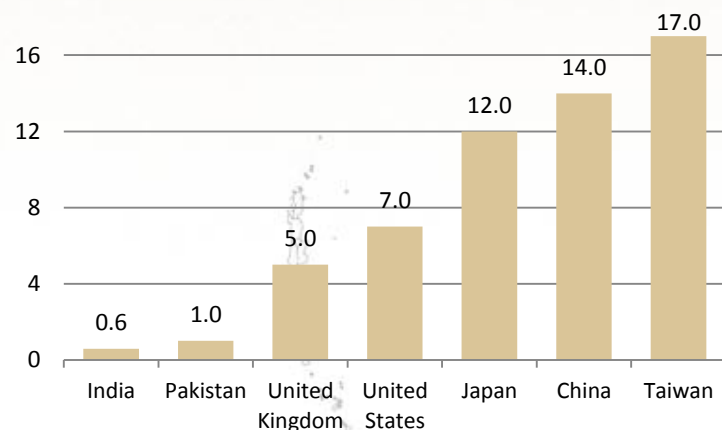
Agrochemicals: The future looks bright

- India is the fourth largest producer of agrochemicals globally
- 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 agrochemicals consumption is set to rise in the coming years given the above - mentioned factors
- India exports about 50 per cent of its current production; exports are likely to remain a key component of the industry

Agrochemical industry growth outlook (USD billion)



Average crop protection consumption (kg/ha)



Source: India Chem, Aranca Research
Note: E - Estimates

Chemicals

MARCH
2013

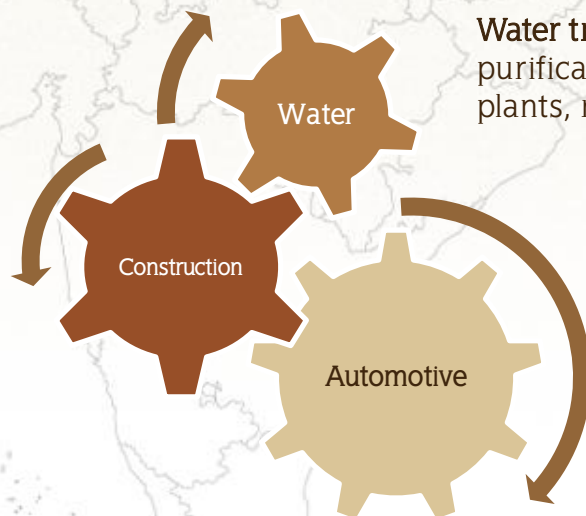
Contents

- ❖ Advantage India
- ❖ Market overview and trends
- ❖ Growth drivers
- ❖ Success stories: TATA Chemicals, UPL, Asian Paints
- ❖ Opportunities
- ❖ Useful information

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Appendix: Key growth drivers of specialty chemicals

Construction industry in India has been posting a CAGR of about 16 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 re-enforcing material in construction will drive the demand for related chemicals



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

Automotive sector in India has been growing at a CAGR of 10 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: Aranca Research

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

Glossary

- **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
 - Conversion rate used: USD1= INR48
EUR1= USD1.3275
- Wherever applicable, numbers have been rounded off to the nearest whole number

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