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Executive summary

2. HIGHLY DIVERSIFIED

- The Indian chemicals industry is highly diversified, covering >80,000 products and employing >2 million people.
- A network of 200 national laboratories and 1,300 R&D centres provides a strong base to the Indian chemical industry to drive innovations.
- The chemical industry is expected to contribute US$ 300 billion to India’s GDP by 2025.

1. GLOBAL POSITION

- Globally, India is the third-largest consumer of polymers, fourth-largest producer of agrochemicals and sixth-largest producer of chemicals.
- The Indian chemicals industry makes up 3.4% of the global chemicals industry.
- In 2019, the Indian chemicals market stood at US$ 178 billion and is forecast to reach US$ 304 billion by 2025.

3. STRONG GROWTH IN SPECIALTY CHEMICALS

- The Indian specialty chemicals sector is expected to increase at a CAGR of 12.4%, from US$ 32 billion in 2019 to an estimated US$ 64 billion by 2025.
- Also, ICRA’s ratings indicate improved exports and a positive outlook for agrochemicals and surfactants.

4. LARGEST GLOBAL DYE SUPPLIER

- India is the second-largest manufacturer and exporter of dyes and accounts for ~16% of the world production.
- According to the Basic Chemicals, Cosmetics & Dyes Export Promotion Council, the export value of dye in India stood at US$ 2.3 billion as of FY21.

Notes: GDP: Gross Domestic Product, FDI: Foreign Direct Investment, CAGR: Compounded Annual Growth Rate
Source: Department of Chemicals and Petrochemicals, Nirmal Bang Group
1. Growing demand

- Rise in demand from end-user industries such as food processing, personal care and home care is driving development of different segments in India's specialty chemicals market.
- The domestic chemicals sector's small and medium enterprises are expected to showcase 18-23% revenue growth in FY22, owing to an improvement in domestic demand and higher realisation due to high prices of chemicals.

2. Increasing investments and spending

- FDI inflows in the chemicals sector (other than fertilisers) reached US$ 18.69 billion between April 2020 and June 2021.
- In November 2021, Indian Oil Corporation (IOCL) announced plans to invest Rs. 3,681 crore (US$ 495.22 million) to set up India's first mega-scale maleic anhydride unit for manufacturing high-value specialty chemicals at its Panipat Refinery in Haryana.
- An investment of Rs. 8 lakh crore (US$ 107.38 billion) is estimated in the Indian chemicals and petrochemicals sector by 2025.

3. Policy support

- The government plans to introduce production-linked incentive (PLI) scheme to promote domestic manufacturing of agrochemicals.
- Under the Union Budget 2021-22, the government allocated Rs. 233.14 crore (US$ 32.2 million) to the Department of Chemicals and Petrochemicals.
- The PLI plan for the National Programme on Advanced Chemistry Cell Battery Storage has been approved by the Union Cabinet as of May 2021.

4. Opportunities

- India’s specialty chemicals companies are expanding their capacities to cater to rising demand from domestic and overseas.
- In July 2021, the government announced discovery of indigenous deposits of phosphatic rocks. This will help expand fertiliser production domestically and boost self-reliance in fertiliser production.
- The Odisha government accepted investment applications worth ~US$ 345.3 million in the metal, cement, chemical, plastic, food processing and manufacturing sectors in April 2021. This is likely to generate 2,755 jobs.

Source: Budget 2020-21, News Articles, DPIIT, *Ultratech investors presentation May 2018
Market Overview
Chemicals market in India

- Chemicals industry in India covers >80,000 commercial products.
- India’s chemicals industry is de-licensed, except for a few hazardous chemicals.
- The industry is expected to reach US$ 304 billion by 2025 at a CAGR of 9.3%, driven by rising demand in the end-user segments for specialty chemicals and petrochemicals segment.
- Specialty chemicals constitute for 22% of the total chemicals and petrochemicals market in India. Demand for specialty chemicals is expected to register 12% CAGR in 2019-22.
- Specialty chemical companies are seeking at import substitutions while exploring export opportunities to accelerate their business.
- The Indian dyes and pigments market is projected to reach US$ 63 billion by 2022, accounting for about 16% of the global dye production.
- The petrochemical demand is expected to record a 7.5% CAGR between 2019 and 2023, with the demand for polymers growing at 8%.
- The agrochemicals market in India is expected to register 8.6% CAGR to reach US$ 7.4 billion between 2021 and 2026.
- Specialty chemicals account for 20% of the global chemicals industry's US$ 4 trillion, with India’s market expected to increase at a CAGR of 12% to US$ 64 billion by 2025. This gain would be driven by a healthy demand growth (CAGR of 10-20%) in the export/end-user industries.
- The country ranks 14th in exports and 8th in imports of chemicals worldwide.

Source: Department of Chemicals and Petrochemicals, The Brokerage
Chemical's market is split into five key segments

- **Bulk chemicals**: These are groups of chemicals, which are manufactured on a large scale and further divided into organic, inorganic and alkali chemicals.

- **Petrochemicals & polymers**: These chemicals are derivative of several chemical compounds such as hydrocarbons, which are derived from crude oil or natural gas.

- **Fertilisers**: These provide nutrients for plant growth; are divided into organic/inorganic and natural/synthetic. Further, these can be broadly classified into phosphate, potassium and nitrogenous.

- **Specialty chemicals**: These are derivatives of basic chemicals that are manufactured for specific end-use solutions. The characteristics of these chemicals include high-value, high R&D and low volume.

- **Agrochemicals**: These chemicals are used to protect crops against insects and pests and include fungicides, herbicides, and insecticides, among others. These chemicals can be applied in water irrigation, seeds, soils and crops.
Evolution of the Indian chemical sector

- Foreign drug supplies were decreased, and several Indian pharmaceutical companies were established.
  - Companies included Unichem, Chemo Pharmaceuticals, Zandu Pharmaceutical Works, Chemical Industrial and Pharmaceutical Laboratories (CIPLA) and East India Pharmaceutical Works.

- Indian government established five public-sector companies.
  - Established Hindustan Antibiotics Ltd. (HAL) in 1954 and Indian Drugs and Pharmaceuticals Ltd. (IDPL) in 1961.

- Expansion of the petrochemical industry.
  - Development of integrated naphtha and gas crackers, along with related downstream plants for polymers, synthetic fibers, aromatics and other chemicals.

- Indian players and MNCs collaborated for key investments.
  - Lower tariff barriers exposed the domestic industry to competitors (from imports).

- The chemical industry is expected to contribute US$ 300 billion to India’s GDP by 2025.
  - Indian chemical companies spend ~1% of their revenue on R&D.
  - Chemicals contributes 4% to the total FDI equity inflow and ~8% to the country’s exports.

- Investments in petrochemicals are driven by growth in end-user segments.

Source: KPMG report, News Articles
## Key players in the chemical sector...(1/2)

### Indian Companies

<table>
<thead>
<tr>
<th></th>
<th>Company Name</th>
<th>Products and Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PIDILITE INDUSTRIES LIMITED</td>
<td>Adhesives, sealants, waterproofing solutions, construction chemicals, industrial resins, and polymers.</td>
</tr>
<tr>
<td>2</td>
<td>TATA CHEMICALS LIMITED</td>
<td>Gypsum, soda ash, soda bicarbonate, cement, salt, marine chemicals and crushed refined soda.</td>
</tr>
<tr>
<td>3</td>
<td>UNITED PHOSPHORUS LIMITED</td>
<td>Crop protection, herbicide, fungicide, insecticide, water conservation, seed treatments, adjuvants, biosolutions and fumigants.</td>
</tr>
<tr>
<td>4</td>
<td>GUJARAT FLUOROCHEMICALS LIMITED</td>
<td>Caustic soda, special chlorine derivatives, sodium chlorate, caustic potash, chloromethane, phosphoric acid, hydrogen peroxide and water treatment solutions.</td>
</tr>
<tr>
<td>5</td>
<td>RELIANCE INDUSTRIES LIMITED</td>
<td>Polymers, elastomers, polyesters, aromatics, fibre-intermediates and advanced materials.</td>
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</tbody>
</table>

**Note:** This list is indicative  
**Source:** Company website
### Key players in the chemical sector...(2/2)

**International Companies**

<table>
<thead>
<tr>
<th>No.</th>
<th>Company Name</th>
<th>Products/Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BASF INDIA LIMITED</td>
<td>Fungicide, herbicide, insecticide, industrial gases, alcohols and aldehydes, glycol ethers, glycol ether acetates and esters.</td>
</tr>
<tr>
<td>2</td>
<td>E.I. DU PONT INDIA PRIVATE LIMITED</td>
<td>Adhesives, digital printing inks and packaging materials &amp; solutions.</td>
</tr>
<tr>
<td>3</td>
<td>MITSUBISHI CHEMICAL INDIA PRIVATE LIMITED</td>
<td>Industrial chemicals, basic petrochemicals, solvents and methyl methacrylate monomer &amp; derivatives acrylonitrile &amp; related products.</td>
</tr>
<tr>
<td>4</td>
<td>SABIC INDIA PRIVATE LIMITED</td>
<td>Aromatics, chlor-alkali, ethanolamines, ethoxylated surfactants, glycols, linear alpha olefins, natural detergent alcohol and olefins.</td>
</tr>
<tr>
<td>5</td>
<td>EXXONMOBIL COMPANY INDIA PRIVATE LIMITED</td>
<td>Butyl, ethylene propylene diene (EPDM) rubber, polyethylene products, polymer modifiers, polyolefin plastomers &amp; elastomers and polypropylene.</td>
</tr>
</tbody>
</table>

*Note: This list is indicative  
Source: Company website*
Recent Trends and Strategies
In August 2021, production volumes of key chemicals stood at 935,513 MT and petrochemicals at 1,716,781 MT.

In August 2021, production levels of various chemicals were as follows:

- Soda Ash: 267,430 MT
- Caustic Soda: 275,528 MT
- Liquid Chlorine: 197,765 MT
- Formaldehyde: 25,395 MT
- Pesticides and Insecticides: 23,302 MT

At the CPMA - Argus Petrochemical Online Forum held on August 25, 2021, President of India's Chemicals and Petrochemicals Manufacturers Association (CPMA), Mr. Kamal Nanavaty, said that the Indian petrochemicals industry will have to increase its production capacity tenfold to meet higher demand by 2050. He also highlighted that India's consumption is estimated to double every nine years at an annual rate of 8%.

Notes: MT: metric tonnes
Source: Department of Chemicals and Petrochemicals
Chemical sector import and export statistics

- In October 2021, exports of organic & inorganic chemicals increased 41.93% YoY to reach US$ 2.56 billion.
- In October 2021, imports of organic & inorganic chemicals grew 67.88% YoY to reach US$ 2.62 billion.
- In October 2021, imports of petroleum and crude products rose by 140.47% YoY to reach US$ 14,429.12 million.
- India holds a strong position in international trading of chemicals and ranks 9th in exports and 6th in imports at a global level (excluding pharmaceuticals).

**Source:** Department of Chemicals and Petrochemicals, Directorate General of Commercial Intelligence and Statistics
Globally, India is the fourth-largest producer of agrochemicals after the United States, Japan and China.

India is the fourth India is a net exporter of agrochemicals and the thirteenth-largest exporter of pesticides and disinfectants. The country’s exports have increased on the account of low-cost manufacturing, availability of technically trained manpower, seasonal domestic demand, overcapacity, competitive pricing and strong presence in generic pesticide manufacturing.

Rise in demand in the agricultural segment is driving growth of agrochemicals in India

In October 2020, the government urged players in the agrochemicals industry to come out with new molecules of global standards for the farmers' benefit, while CropLife India, the industry body, pitched for stable policies and regulatory regimes to boost growth in the sector

The current GST on agrochemical is 18%. In January 2021, CropLife India, an industry body, demanded the government to reduce GST as this will help lower prices of agrochemicals and benefit farmers.

The Indian agrochemicals market was worth ~US$ 4.5 billion in 2020. According to Expert Market Research (EMR), the market is expected to increase at a CAGR of 8.6% between 2021 and 2026 to reach ~US$ 7.4 billion.

As per Chemexcil (Chemicals Export Promotion Council), India’s agrochemicals export was estimated at US$ 3.57 billion in FY21, up from US$ 3.28 billion in FY20.

Source: Ministry of Chemical & Petrochemical Statistics, News Articles
In FY22, alkali chemicals accounted for 71.9% of the total chemicals production from April to July 2021.

Government initiatives such as promotion of small and midsized ‘Sodium Bicarbonate’ and ‘Ammonia’ processing industries in proximity to soda ash manufacturing units is likely to boost demand for soda ash in the country.

Note: *for FY20 and FY21 Pesticide includes production of Pesticides and Insecticides  
Source: Ministry of Chemical & Petrochemical Statistics
Petroleum, chemicals and petrochemicals investment region (PCPIR)

To promote investments and development in this sector, Indian government approved four PCPIRs

- **PCPIR in Dahej, Gujarat** attracted more investments-compared with the other three cities-wherein various Indian and multinational companies such as ONGC, GACL, OPAL, BASF and LANXESS have opened facilities.

- In December 2020, the PCPIR policy is being completely redesigned. Under the new PCPIR Policy 2020-35, it has been targeted to attract a combined investment of Rs. 10 lakh crore (US$ 142 billion) by the year 2025, Rs. 15 lakh crore (US$ 213 billion) by 2030 and Rs. 20 lakh crore (US$ 284 billion) by 2035 in all the PCPIRs across the country.

- The four PCPIRs are expected to generate employment for ~33.83 lakh people. ~3.50 lakh persons have been employed in direct and indirect activities related to PCPIRs by the end of 2020.

*Source: Federation of Indian Chambers of Commerce and Industry, News Articles*
Indian chemical companies are investing in innovative solutions, focusing on issues such as water, environmental impact, raw materials, safety over lifecycle and energy use.

1. Tata Chemicals
   - Tata Chemicals commissioned a solar photo-voltaic plant to save energy.
   - With an aim to control greenhouse gas emissions, it proposed to establish a 150 kWp grid-connected solar photovoltaic power plant on the rooftop terrace of the electrical sub-station.

2. Kanoria Chemicals & Industries Limited
   - The company’s AlcoChem Ankleshwar Division runs ‘waste to wealth’ programme, which involves treatment of effluent and recycling water by a ‘Reverse Osmosis’ process developed by the company.

3. Reliance Industries
   - As of June 2021, Reliance Industries (REL), which operates the world’s largest refining facility in Jamnagar, Gujarat, plans to invest US$ 10.1 billion in clean energy over the next three years to become a net carbon zero corporation by 2035.

Source: News Articles
Growth Drivers
Strong demand and policy support driving investments

Growing demand
- Higher real disposable incomes
- Shift in production and consumption towards Asian and Southeast Asian countries
- Shift in consumer preference towards environment-friendly products

Inviting
- Policy support
  - 100% FDI under the automatic route in the chemical sector, except for hazardous chemicals
  - MSIHC Rules to be merged with CAEPPR to safely handle hazardous chemicals

Resulting in
- Increasing investment
  - Establishing PCPIRs (investment regions for petroleum, chemicals and petrochemicals)
  - Domestic and overseas companies investing in greenfield or brownfield projects
  - Increase in FDI investments

Notes: MSIHC: Manufacture Storage and Import of Hazardous Chemicals, CAEPPR: Chemical Accidents Emergency Planning, Preparedness and Response
Source: News Articles
Key growth drivers...(1/2)

Rise in domestic demand

- By 2030, India is likely to have ~80% of the households in the middle-income group.
- The growing middle-class and increasing urbanisation is driving the demand for personal care, agrochemicals, food, paints & coatings resulting into higher consumption of chemicals per capita.

Government aims to boost manufacturing share in GDP to 20% by 2025

- Government considers the manufacturing sector to be a key focus area and has contacted ~1,450 companies worldwide to manufacture in India.
- The government plan includes 2-3 autonomous zones which does not have labor and land laws.
- ~300 companies are actively pursuing production plans in mobiles, electronics, medical devices and textiles.

Source: National Council of Applied Research, World Economic Forum
EMERGING MANUFACTURING HUBS
The dedicated integrated manufacturing hubs under Petroleum, Chemicals and Petrochemicals Investment Regions (PCPIR) policy to attract an investment of Rs. 20 lakh crore (US$ 276.46 billion) by 2035.

RISE IN DISINFECTANT DEMAND POST COVID-19
With increasing demand for disinfestation of personal and public places post COVID-19, the chloro-alkali, ethanol, personal care, and surfactant industry is expected to record significant growth in near future.

FOREIGN INVESTMENT
Presence of prominent global players, such as BASF, Dow Chemicals, Bayer and others, 100% FDI in the chemicals sector and stringent laws on anti-dumping to drive the Indian chemical market.

SKILLED AND LOW-COST MANPOWER
The skilled and low-cost labour, world-class engineering and strong R&D set-up enable chemicals industries in India.

GROWING END USE INDUSTRIES
Demand from packaging, construction, automotive and other industries to drive the Indian chemical market.
2. WATER TREATMENT
- Increasing urbanisation and population is driving the demand for safe drinking water. Moreover, rising awareness of hygiene among the people is leading to excessive water consumption.

3. TEXTILE, FLAVOURS & FRAGRANCES
- India has witnessed increasing demand for wide range of cosmetic chemicals, health care products and hygiene products that use specialty chemicals, polymers and oleo chemicals. This segment is likely to outperform other segments.

1. AUTOMOTIVE
- Disruption in automotive sector with the emergence of autonomous driving, connected cars, electric vehicles and shared mobility will affect the value chain of Indian chemical companies supplying chemicals to automotive applications.

4. CONSTRUCTION
- ‘Smart City’ projects by the Indian government are driving growth of chemical companies in India. Availability of essential raw materials at low cost is anticipated to increase demand for construction chemicals.

Source: News Articles
Recent developments and investments by key players (1/2)

1 Rise in production
- At the CPMA - Argus Petrochemical Online Forum held on August 25, 2021, President of India's Chemicals and Petrochemicals Manufacturers Association (CPMA), Mr. Kamal Nanavaty, said that the Indian petrochemicals industry will have to increase its production capacity tenfold to meet higher demand by 2050. He also highlighted that India’s consumption is estimated to double every nine years at an annual rate of 8%.
- In November 2021, Coromandel International announced plans to set up 1,650-metric-tonnes-per-day sulphuric acid plant at its fertiliser complex in Visakhapatnam with an investment of Rs. 400 crore (US$ 53.69 million).
- In November 2021, Indian Oil Corporation (IOCL) announced plans to invest Rs. 3,681 crore (US$ 495.22 million) to set up India’s first mega-scale maleic anhydride unit for manufacturing high-value specialty chemicals at its Panipat Refinery in Haryana.

2 M&As
- In July 2021, Rossari Biotech announced plan to acquire Tristar Intermediates Pvt. Ltd. for Rs. 120 crore (US$ 16.19 million) to strengthen its capabilities. The acquisition is expected to create opportunity in the specialty chemicals sector in India.
- Pidilite Industries acquired Huntsman Group’s Indian subsidiary for Rs. 2,100 crore (US$ 283.38 million) to strengthen its adhesives and sealants portfolio and complement its retail portfolio.

3 Self-reliant in fertilisers
- By 2023, India will be self-reliant in fertiliser production and reduce import dependency, by establishing new units covering an investment of Rs.400 billion. At present, Indian fertiliser production stands at 42-45 million tonnes and imports at 18 million tonnes.

4 Public-private partnership (PPP) model
- In November 2021, Praj Industries Limited and Indian Oil Corporation inked a memorandum of understanding (MoU) to explore opportunities in the production of alcohol-to-jet (ATJ) fuels, 1G & 2G ethanol, compressed bio-gas (CBG) and related opportunities in the biofuels industry.

Source: Company Websites, News Sources,
Recent developments and investments by key players (2/2)

5 Skills and technical support

- Central Institute of Petrochemicals Engineering & Technology (CIPET), under the Ministry of Chemicals and Fertilisers, will establish two new ‘Centres for Skilling and Technical Support’ (CSTS) at Bhagalpur, Bihar and Varanasi, Uttar Pradesh. This will act as a catalyst for development and growth of new and existing industries in the region.
- On September 30, 2021, Prime Minister, Mr. Narendra Modi, inaugurated the CIPET: Institute of Petrochemicals Technology, Jaipur.
- In September 2021, CareerLabs, India’s first profile building EdTech start-up, announced an industry certification programme for chemical engineers in partnership with Dr. Reddy’s Laboratories Ltd. The partnership aims at opening avenues for students to pursue highly rewarding careers in the pharmaceutical industry and concurrently meet the ever-increasing demand for chemical engineers to cater to the need of the hour with relevant skill development.
- In June 2021, the Rubber Skill Development Council (RSDC) announced that it is expanding its vertical to cover the chemicals and petrochemicals sectors and will be known by the name Rubber, Chemical, Petrochemical Skill Development Council (RCPSDC). The council will implement skill training programmes in chemicals and petrochemicals verticals for the youth across the country.

6 International collaboration and investments

- The government is planning to hold roadshows in eight overseas markets for the proposed investors’ summit planned in January 2022, with focus on the petrochemicals sector, and is eager to attract investors to its newly launched Petroleum, Chemicals and Petrochemicals Investment Region (PCPIR) near the upcoming crude oil refinery in Pachpadra village (in Barmer district, Rajasthan).
- In October 2021, Rosneft, Russia, launched a large-scale petrochemicals production development programme in India with investments worth ~US$ 750 million at the current implemented stage.
- In September 2021, Dorf Ketal Chemicals India Pvt. Ltd., a company headquartered in Mumbai, India; and TriBonds Chemical Co., based in Dammam, the Kingdom of Saudi Arabia, have announced a joint venture (JV) to manufacture water specialty chemicals for applications in the Middle East refining and petrochemical industry. The JV will focus on meeting the energy and water management and processing needs of refineries, petrochemicals, fuel additives, plastics, lubricants, oil field chemicals, catalysts and adsorbents.
- In August 2021, Privi Speciality Chemicals Limited collaborated with Givaudan to strengthen manufacturing capabilities of its specialty fragrance ingredient products by establishing a production unit in Mumbai to manufacture small-volume fragrance ingredients.

Source: Company Websites, News Sources,
Specialty chemicals - aggressive capex to drive growth

- Specialty chemical companies in India have started accelerating their capex plan on the back of strong growth visibility and emerging opportunities.
  - Due to growing environmental concerns, many chemical companies in China ceased activities in 2018; this led to an increase in manufacturing of specialty chemicals in the Indian market to ensure uninterrupted supply.
  - Indian manufacturers have recorded a CAGR of 11% in revenue between FY15 and FY21, increasing India’s share in the global specialty chemicals market to 4% from 3%, according to the Crisil report.
  - A revival in domestic demand and robust exports will spur a 50% YoY increase in the capex of specialty chemicals manufacturers in FY22 to Rs. 6,000-6,200 crore (US$ 815-842 million).
  - Revenue growth is likely to be 19-20% YoY in FY22, up from 9-10% in FY21, driven by recovery in domestic demand and higher realisations owing to rising crude oil prices and better exports.

Key growth drivers in the end-user industry for specialty chemicals include the following:

- Paints & coatings: Increase in urbanisation, increase in middle-income households, high replacement demand and increase in per capita income.
- Textile: Increase in Indian export, increase in urbanisation and higher disposal income.
- Construction: Low expenditure on admixtures compared with China and the US.
- Home care: Increased consumption.

### Table: Subsegments and User Industries

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<tr>
<th>Subsegments</th>
<th>User Industries</th>
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<tbody>
<tr>
<td>Paints &amp; Coatings</td>
<td>Construction, Automotive</td>
</tr>
<tr>
<td>Special Polymers</td>
<td>Packaging Automotive</td>
</tr>
<tr>
<td>Construction Chemicals</td>
<td>Infrastructure, Real Estate</td>
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<tr>
<td>Paper Chemicals</td>
<td>Printing, Packaging</td>
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<tr>
<td>Textile Chemicals</td>
<td>Apparel, Technical Textile</td>
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<tr>
<td>Water Chemicals</td>
<td>Industrial Water, Municipal Water</td>
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<tr>
<td>Cosmetic Chemical</td>
<td>Bath, Shower, Haircare</td>
</tr>
<tr>
<td>Flavours &amp; Fragrances</td>
<td>Food Processing, Personal Care</td>
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<tr>
<td>Agro Chemicals</td>
<td>Agriculture, Exports</td>
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<tr>
<td>Home Care Surfactants</td>
<td>Laundry Care, Dishwashing</td>
</tr>
<tr>
<td>Colourants</td>
<td>Textile, Exports</td>
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Source: Department of Chemicals and Petrochemicals
A 2034 vision for the chemicals and petrochemicals sector has been set up by the government to explore opportunities to improve domestic production, reduce imports and attract investments in the sector. The government plans to implement production-link incentive system with 10-20% output incentives for the agrochemical sector; to create an end-to-end manufacturing ecosystem through the growth of clusters.

100% FDI is allowed in the chemical sector under automatic route with exception to few hazardous chemicals.

Industrial licensing is approved in most sectors, except for few hazardous chemicals.

The Indian Government supports the industry in research & development, reduced the basic customs duty on several products and offers support through the ‘Make in India’ campaign.

Four Petroleum, Chemicals and Petrochemical Investment Regions (PCPIRs) have been set up as the investment regions for petroleum, chemicals and petrochemicals along with associated services.

The Government of India is considering launching a production-linked incentive (PLI) scheme in the chemical sector to boost domestic manufacturing and exports.

Source: Department of Chemicals and Petrochemicals,
2. ALTERNATIVE AND LOW-COST FEEDSTOCK

- In November 2020, NextChem, and Indian Oil Corp. Ltd. (IndianOil) signed a memorandum of understanding (MOU) to use NextChem technologies to build industrial projects to support industrialisation of India's sustainable development.
- The projects would emphasis on recycling of plastics, production of biofuels from renewable feedstock and circular fuels and non-recyclable waste chemicals.

3. GLOBAL FOOTPRINT AND CUSTOMER SEGMENTS

- Aarti Industries generates >40% revenue from the global markets.
- UPL has presence in multiple markets with >30% of its revenue generated from Latin America.
- SH Kelkar has completed several strategic acquisitions, including China-based Anhui Ruibang Aroma and Italy’s Creative Flavours and Fragrances; this helped expand its portfolio, improve technological platforms and gain access to new markets.

4. EXPOSURE TO CUTTING-EDGE TECHNOLOGIES

- Atul Chemicals, partnered with Akzo Nobel to access state-of-the-art eco-friendly hydrogenation technology for monochloroacetic acid (MCA) production in India.

Many Indian chemical companies are focussing on attaining scale to build their margins and enhance environmental sustainability.

Source: Company Website, News Articles
<table>
<thead>
<tr>
<th>Agency</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Chemicals &amp; Petrochemicals</td>
<td>Dept. of Chemicals &amp; Petrochemicals, Ministry of Chemicals &amp; Fertilisers, 341-(C), A-wing, 3rd floor, Shastri Bhawan, New Delhi-110001 Phone: +91 11 23383428 Fax: +91 11 23073682(F) Email: <a href="mailto:samir.biswas@gov.in">samir.biswas@gov.in</a> Website: <a href="https://chemicals.nic.in">https://chemicals.nic.in</a></td>
</tr>
<tr>
<td>Indian Chemical Council</td>
<td>Sir Vithaldas Chambers, 6th Floor 16 Mumbai Samachar Marg, MUMBAI - 400 001 Phone: +91 22 61144000 / 22048043 Email: <a href="mailto:iccmumbai@iccmail.in">iccmumbai@iccmail.in</a>, <a href="mailto:events@iccmail.in">events@iccmail.in</a> Website: <a href="http://www.icmaindia.com">www.icmaindia.com</a></td>
</tr>
<tr>
<td>Dye Manufacturers Association of India</td>
<td>A-317, 3rd Floor, Antop Hill Warehousing Complex, Vidyalankar College Road, Near Barkat Ali Naka, Wadala (East), Mumbai - 400 037. India Phone: +91 22 24158156, 24158157 Fax: +91 22 24157374 Email: <a href="mailto:info@dmai.org">info@dmai.org</a> Website: <a href="http://dmai.org/">http://dmai.org/</a></td>
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<tr>
<td>Alkali Manufacturers Association of India</td>
<td>Alkali Manufacturers Association of India,3rd Floor, Pankaj Chambers, Commercial Complex Preet Vihar, Vikas Marg, Delhi 110092 Phone: +91 11 22432003, 22410150 Fax: +91 11 22468249 Email: <a href="mailto:hkanand@ama-india.org">hkanand@ama-india.org</a>, <a href="mailto:info@ama-india.org">info@ama-india.org</a> Website: <a href="http://www.ama-india.org">www.ama-india.org</a></td>
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<td>Indian Specialty Chemical Manufacturers' Association</td>
<td>1156, Bole Smruti, Suryavanshi Kshatriya Sabha griha Marg, Off. Veer Savarkar Marg, Dadar (West), Mumbai - 400 028 Phone: +91 22 2446 5003 Email: <a href="mailto:info@iscma.in">info@iscma.in</a>, <a href="mailto:iscma@email.com">iscma@email.com</a> Website: <a href="http://www.iscma.in">www.iscma.in</a></td>
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</tbody>
</table>
Glossary

- CAGR: Compound Annual Growth Rate
- Capex: Capital Expenditure
- MMTPA: Million metric tons per annum
- CENVAT: Central Value Added Tax
- EHTP: Electronic Hardware Technology Park
- EPCG: Export Promotion Capital Goods Scheme
- FDI: Foreign Direct Investment
- FY: Indian Financial Year (April to March); So, FY10 implies April 2009 to March 2010
- LCD: Liquid Crystal Display
- R&D: Research and Development
- US$: US Dollar
- Wherever applicable, numbers have been rounded off to the nearest whole number
## Exchange Rates

### Exchange Rates (Fiscal Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>Rs. Equivalent of one US$</th>
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<tbody>
<tr>
<td>2004-05</td>
<td>44.95</td>
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<td>2011-12</td>
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<td>2019-20</td>
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<td>2020-21</td>
<td>73.20</td>
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</table>

### Exchange Rates (Calendar Year)

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<thead>
<tr>
<th>Year</th>
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<tr>
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<td>2006</td>
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<td>69.89</td>
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<td>2020</td>
<td>74.18</td>
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<tr>
<td>2021*</td>
<td>74.84</td>
</tr>
</tbody>
</table>

**Note:** As of November 2021  
**Source:** Reserve Bank of India, Average for the year
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