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</tbody>
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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 specialty chemicals sector witnessed a significant growth of ~14% since 2015 and is expected to reach US$ 70 billion by end-2020, followed by a CAGR of ~12-13% over the next five years.
- The key segments of specialty chemicals—including personal care and paints & coatings—are likely to witness CAGR of ~13% and ~10%, respectively.
- 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.

Notes: GDP: Gross Domestic Product, FDI: Foreign Direct Investment, CAGR: Compounded Annual Growth Rate
Source: Department of Chemicals and Petrochemicals
Advantage India

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

- PCPIRs are expected to attract investments worth Rs. 7.63 lakh crore (US$ 104.36 billion).
- Indian chemical companies spend ~1% of their revenue on R&D.
- 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.

4. Opportunities

- India’s specialty chemicals companies are expanding their capacities to cater to rising demand from domestic and overseas.
- With global companies seeking to de-risk their supply chains, which are dependent on China, the chemical sector in India has the opportunity for a significant growth.

Source: Budget 2020-21, News Articles, DPIIT, *Ultradeck investors presentation May 2018
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 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% CAGR to reach US$ 3.7 billion by FY22 and US$ 4.7 billion by FY25.
- The country ranks 14th in exports and 8th in imports of chemicals worldwide.

Source: Department of Chemicals and Petrochemicals,
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

1939-1945
- 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.

1950s-1960s
- Indian government established five public-sector companies.
- Established Hindustan Antibiotics Ltd. (HAL) in 1954 and Indian Drugs and Pharmaceuticals Ltd. (IDPL) in 1961.

1980s-1990s
- 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.

1990s-2000s
- Indian players and MNCs collaborated for key investments.
- Lower tariff barriers exposed the domestic industry to competitors (from imports).

2000s to date
- 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

1. PIDILITE INDUSTRIES LIMITED
   Adhesives, sealants, waterproofing solutions, construction chemicals, industrial resins, and polymers.

2. TATA CHEMICALS LIMITED
   Gypsum, soda ash, soda bicarbonate, cement, salt, marine chemicals and crushed refined soda.

3. UNITED PHOSPHORUS LIMITED
   Crop protection, herbicide, fungicide, insecticide, water conservation, seed treatments, adjuvants, biosolutions and fumigants.

4. GUJARAT FLUOROCHEMICALS LIMITED
   Caustic soda, special chlorine derivatives, sodium chlorate, caustic potash, chloromethane, phosphoric acid, hydrogen peroxide and water treatment solutions.

5. RELIANCE INDUSTRIES LIMITED
   Polymers, elastomers, polyesters, aromatics, fibre-intermediates and advanced materials.

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

International Companies

1. BASF INDIA LIMITED
   - Fungicide, herbicide, insecticide, industrial gases, alcohols and aldehydes, glycol ethers, glycol ether acetates and esters.

2. E.I. DU PONT INDIA PRIVATE LIMITED
   - Adhesives, digital printing inks and packaging materials & solutions.

3. MITSUBISHI CHEMICAL INDIA PRIVATE LIMITED
   - Industrial chemicals, basic petrochemicals, solvents and methyl methacrylate monomer & derivatives acrylonitrile & related products.

4. SABIC INDIA PRIVATE LIMITED
   - Aromatics, chlor-alkali, ethanolamines, ethoxylated surfactants, glycols, linear alpha olefins, natural detergent alcohol and olefins.

5. EXXONMOBIL COMPANY INDIA PRIVATE LIMITED
   - Butyl, ethylene propylene diene (EPDM) rubber, polyethylene products, polymer modifiers, polyolefin plastomers & elastomers and polypropylene.

Note: This list is indicative
Source: Company website
Recent Trends and Strategies
### Chemical sector production capacity

#### Production of Chemicals (‘000 MT)

<table>
<thead>
<tr>
<th></th>
<th>Jan-21</th>
<th>Feb-21</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>930.68</td>
<td>839.31</td>
</tr>
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</table>

#### Production of Petrochemicals (‘000 MT)

<table>
<thead>
<tr>
<th></th>
<th>Jan-21</th>
<th>Feb-21</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,910.73</td>
<td>1,694.12</td>
</tr>
</tbody>
</table>

- In February 2021, production of key chemicals was 839,308 MT and petrochemicals was 1,694,120 MT.
- In February 2021, production of selected chemicals declined to 9.81% over January 2021, while petrochemicals production declined by 11.33%.

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

- In April 2021, exports of organic and inorganic chemicals increased 68.54% YoY to reach US$ 2,288.30 million.
- In April 2021, imports of organic and inorganic chemicals increased 72.87% YoY to reach US$ 2,242.53 million.
- For petrochemicals, imports of petroleum and crude products decreased 10.6% YoY to reach US$ 9,581.85 million in December 2020.
- 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,

Note: Import includes data for both organic and inorganic chemicals and chemicals materials and products; Export data includes only organic and inorganic chemicals.
Globally, India is the fourth-largest producer of agrochemicals after the United States, Japan and China.

The Indian agrochemicals market is expected to register an 8% CAGR to reach US$ 3.7 billion by FY22 and US$ 4.7 billion by FY25.

India is the fourth largest exporter of agrochemicals and is 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 agrochemical 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.

Source: Ministry of Chemical & Petrochemical Statistics, News Articles
Chemical trends in India

- Alkali chemicals accounted for 69.45% of the total chemical production from April to December 2020.

- 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.

   - The company adopted technology to recycle >98% of water and reuse >90% of salt.
   - The process consisted of a pre-treatment system, followed by water recovery system using reverse osmosis.

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

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

Increasing investment
- Establishing PCPIR(R 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.

![Middle-class Growth in India (million)](chart)

- CAGR 7.4%

![Manufacturing as % of GDP](chart)

- 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*
### Key growth drivers…(2/2)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>EMERGING MANUFACTURING HUBS</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>RISE IN DISINFECTANT DEMAND POST COVID-19</td>
<td>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.</td>
</tr>
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<td></td>
<td>3</td>
<td>FOREIGN INVESTMENT</td>
<td>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.</td>
</tr>
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<td>4</td>
<td>SKILLED AND LOW-COST MANPOWER</td>
<td>The skilled and low-cost labour, world-class engineering and strong R&amp;D set-up enable chemicals industries in India.</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>GROWING END USE INDUSTRIES</td>
<td>Demand from packaging, construction, automotive and other industries to drive the Indian chemical market.</td>
</tr>
</tbody>
</table>
Key industries driving growth

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.

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.

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
   - HIL (Hindustan Insecticides Limited) signed a memorandum of understanding with the Department of Chemicals & Petro Chemicals to achieve revenue target of Rs. 451 crore (US$ 60.86 million)
   - In October 2020, HIL manufactured its highest-ever production of >530 tonne of Malathion Technical in the first two quarters of the year.

2. M&As
   - 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
   - Bhoramdev Cooperative Sugar Factory Kawardha and Chhattisgarh Distillery’s subsidiary NKJ Biofuel signed a memorandum of understanding (MoU) for the country's first ethanol plant to be set up in the state under the public-private partnership (PPP) model.

Source: Company Websites, News Sources,
Sulphonation plant set up
- Ultramarine & pigments have successfully commissioned the Sulphonation plant setup in Nellore, Andhra Pradesh, to manufacture surfactants and specialty chemicals.

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.

International collaboration
- Prince Pipes and Fittings (PPFL) entered into a technical collaboration with Tooling Holland, an international plastic injection moulding industry, based in The Netherlands.
- Germany headquartered SCHOTT AG, an international specialty glass and technical ceramic materials manufacturer, increases sales in India and plans record investments.

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

**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>
<thead>
<tr>
<th>Subsegments</th>
<th>User Industries</th>
</tr>
</thead>
<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>
</tr>
<tr>
<td>Paper Chemicals</td>
<td>Printing, Packaging</td>
</tr>
<tr>
<td>Textile Chemicals</td>
<td>Apparel, Technical Textile</td>
</tr>
<tr>
<td>Water Chemicals</td>
<td>Industrial Water, Municipal Water</td>
</tr>
<tr>
<td>Cosmetic Chemicals</td>
<td>Bath, Shower, Haircare</td>
</tr>
<tr>
<td>Flavours &amp; Fragrances</td>
<td>Food Processing, Personal Care</td>
</tr>
<tr>
<td>Agro Chemicals</td>
<td>Agriculture, Exports</td>
</tr>
<tr>
<td>Home Care Surfactants</td>
<td>Laundry Care, Dishwashing</td>
</tr>
<tr>
<td>Colourants</td>
<td>Textile, Exports</td>
</tr>
</tbody>
</table>

*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.

1. **100% FDI is allowed in the chemical sector under automatic route with exception to few hazardous chemicals**

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

3. **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**

4. **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**

Source: Department of Chemicals and Petrochemicals,
Favourable initiatives by government

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.

1. VALUE-CHAIN INTEGRATION

- **Camlin Fine Sciences** acquired Borregaard Italia Spa54, a raw-material catechol manufacture, and Ningbo Wanglong, an end-product vanillin flavour manufacturer
- The vertical integration made CFS the third-largest vanillin producer worldwide

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*
Key Industry Contacts
<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>
</tr>
<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>
</tr>
<tr>
<td>Indian Specialty Chemical Manufacturers’ Association</td>
<td>1156, Bole Smruti, Suryavanshi Kshatriya Sabhagiha 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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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>
</tr>
<tr>
<td>2005-06</td>
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<td>2018-19</td>
<td>69.89</td>
</tr>
<tr>
<td>2019-20</td>
<td>70.49</td>
</tr>
<tr>
<td>2020-21</td>
<td>73.20</td>
</tr>
</tbody>
</table>

### Exchange Rates (Calendar Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>Rs. Equivalent of one US$</th>
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</thead>
<tbody>
<tr>
<td>2005</td>
<td>44.11</td>
</tr>
<tr>
<td>2006</td>
<td>45.33</td>
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<tr>
<td>2007</td>
<td>41.29</td>
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<tr>
<td>2008</td>
<td>43.42</td>
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<td>2009</td>
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<td>2018</td>
<td>68.36</td>
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<tr>
<td>2019</td>
<td>69.89</td>
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<tr>
<td>2020</td>
<td>74.18</td>
</tr>
<tr>
<td>2021*</td>
<td>74.94</td>
</tr>
</tbody>
</table>

**Note:** As of April 2021  
**Source:** Reserve Bank of India, Average for the year
India Brand Equity Foundation (IBEF) engaged Sutherland Global Services private Limited to prepare/update this presentation.

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