

CHEMICAL AND PETROCHEMICAL STATISTICS AT A GLANCE-2024



Government of India
Ministry of Chemicals and Fertilizers
Department of Chemicals and petrochemicals
Statistics and Monitoring Division
New Delhi

गंगा कुमार
उप महानिदेशक
Ganga Kumar
Dy. Director General
Tel. : 011-23387761
E-mail : kumar.ganga@nic.in



भारत सरकार
रसायन और उर्वरक मंत्रालय
रसायन और पेट्रो रसायन विभाग
Government of India
Ministry of Chemicals & Fertilizers
Department of Chemicals & Petrochemicals

MESSAGE

The "Chemical & Petrochemical Statistics at a Glance 2024 (Status as on 31.03.2024)", an annual publication by the Department, serves as a reliable resource for evaluating the performance of the chemical and petrochemical sector, a major contributor to India's economy. This sector has vast potential to drive economic growth for betterment of Indian economy.

I am glad to note that the "Chemical and Petrochemical Statistics at a Glance – 2024" publication, prepared by the Statistics and Monitoring (S&M) Division, provides a thorough statistical analysis of key indicators in the chemical and petrochemical sector. The data and insights in this publication will be invaluable for tracking the industry's progress and pinpointing areas in need of further development.

I appreciate the efforts of the officers and officials of S&M Division for their hard work and dedication in producing this comprehensive publication. Their efforts in collecting and analysing data from various sources have made this year's edition possible.

My best wishes to everyone involved.


(Ganga Kumar) 07/01/2025



75
आज़ादी का
अमृत महोत्सव



भारत सरकार
GOVERNMENT OF INDIA
रसायन और उर्वरक मंत्रालय
MINISTRY OF CHEMICALS & FERTILIZERS
रसायन और पेट्रो रसायन विभाग
DEPARTMENT OF CHEMICALS & PETROCHEMICALS
शास्त्री भवन, डॉ. राजेन्द्र प्रसाद रोड़,
SHASTRI BHAVAN, DR. RAJENDERA PRASAD ROAD,
नई दिल्ली – 110 001
NEW DELHI-110 001

ज्ञानेंद्र प्रताप सिंह
Gyanendra Pratap Singh
निदेशक
Director
Tel:011-23063306

Preface

The Statistics and Monitoring (S&M) Division of the Department of Chemicals and Petrochemicals plays a vital role in collecting, compiling, and managing statistical data on chemical and petrochemical products from manufacturing units across the country. The release of the "Chemical and Petrochemical Statistics at a Glance - 2024" provides comprehensive and up-to-date information on various aspects of the chemical sector. This includes trends in installed capacity, production, consumption, and trade by group and product, along with key economic indicators like the Index of Industrial Production (IIP), Wholesale Price Index (WPI), Gross Value Added (GVA), and more. Such information is essential for policymakers, data users, and stakeholders in the chemical sector. This publication will be a valuable resource for those seeking insights into the sector's performance, identifying growth opportunities, and shaping strategies for sustainable development.

2. This publication consists of seven chapters, namely,
- Chapter-1: Introduction
 - Chapter-2: India's Chemical Sector at a Glance
 - Chapter-3: Important Economic Indicators
 - Chapter-4: Important Definitions of CPC Coding System and Economic System
 - Chapter-5: Indices Released by Government of India
 - Chapter-6: ChemIndia - Chemicals inventory of India;
 - Chapter-7: Relevant National & International regulations for C&PC Sector
 - Chapter-8: Glimpses of Important Trends from the FY 2019-20 to FY 2023-24.

Chapter-1 besides defining Basic Chemicals, Specialty Chemicals & Agro-chemicals, also presents the latest status of Chemical Sector in India. Chapter-2 presents the status of Indian Chemical Sector vis-a-vis other countries of the world. Chapter-3 provides important statistics like Gross Valued Added (GVA), Index of Industrial Production (IIP), Export and Import of Chemical sector. Chapter 4 describes the important definition CPC

Coding System and Economic. Chapter-5 describes important indices like IIP, Consumer Price Index (CPI) & Wholesale Price Index (WPI). Chapter 6 describes the key aspects of ChemIndia, a web-based data collection and management system portal. Chapter-7 provides Relevant National & International regulations for C&PC Sector. Chapter-8 provides graphical representation of trends as well as summarise information from the FY 2019-20 to FY 2023-24 on Production, Installed Capacity, Import and Export for various groups under Major Chemicals and Major Petrochemicals along with brief analysis. At the end of the Appendices Section, Statistical tables presenting information inter-alia on Production, Installed Capacity, Capacity Utilization, Imports / Exports along with their growth rates from the FY 2019-20 to FY 2023-24 have also been provided. Detailed table on Foreign Trade, FDI, IIP, WPI etc. related to Chemical and Petrochemical Sector have been included in the Annexures.

3. It is commendable that various ministries, departments, and organizations—including the Ministry of Statistics & Programme Implementation (MoS&PI), Directorate General of Commercial Intelligence and Statistics (DGCI&S), Directorate General of Foreign Trade (DGFT), and the Department for Promotion of Industry and Internal Trade (DPIIT) under the Ministry of Commerce and Industry, Ministry of Petroleum and Natural Gas and the Directorate of Plant Protection, Quarantine & Storage under the Ministry of Agriculture & Farmers Welfare—have supported this publication by providing updated inputs. Their contributions will undoubtedly offer valuable insights and data to all stakeholders in the chemical and petrochemical sector. This collaborative effort enhances transparency, accuracy, and consistency in the data used for decision-making and policy formulation.

4. I commend the S&M Division team's efforts in the Department for presenting this statistical information in a user-friendly format, ensuring it is easily accessible to policymakers, investors, researchers, and industry professionals. I wish them ongoing success in their mission to provide valuable statistical data to all stakeholders. This publication is also available on the Department's website at <https://chemicals.gov.in/statistics-at-glance>.

The feedback towards enhancing the quality and relevance of future editions of this publication is welcomed.


(Gyanendra Pratap Singh)

Contents

Contents

Title	Description	Page No.
Message from Dy.DG		
Preface from Director		
	Introduction	1-3
	Acronyms	4-5
	Coverage, Data Sources, Definitions & Limitations	6-11
Chapter 1	13-26	13-26
Chapter 2	28-30	28-30
Chapter 3	32-36	32-36
Chapter 4	38-48	38-48
Chapter 5	50-56	50-56
Chapter 6	ChemIndia - Chemicals inventory of India	58-59
Chapter 7	Relevant National & International Regulations for C&PC Sector	61-67
Chapter 8	Glimpses of Important Trends from the FY 2019-20 to FY 2023-24	69-115
	Annexures	
	Section – I Chemical Sector	
Table -1	Performance of Selected Major Chemicals (Group-wise) from the FY 2016-17 to FY 2023-24 at a Glance	117
Table -1A	Projection of Production, Installed Capacity, Export and Import of Selected Major Chemical (Group-wise) from the FY 2024-25 to FY 2029-30	118
Table -2	Production, Installed Capacity & Growth of Selected Major Chemicals (Group –wise) from the FY 2016-17 to FY 2023-24	119
Table -3	Production, Capacity Utilization & Growth of Major Chemicals (Product-wise) from the FY 2016-17 to FY 2023-24	120-122
Table -4	Installed Capacities of Selected Chemicals (Group-Wise) from FY 2016-17 to FY 2023-24	123
Table -5	Consumption of Selected Major Chemicals (Product -wise) from the FY 2016-17 to FY 2023-24	124
Table -5A	Consumption of Chemical Pesticides in various States/UTs from the FY 2019-20 to FY 2023-24	125
	Section – II Petrochemical Sector	
Table - 6	Performance of Selected Major Petrochemicals (Group- wise) from the FY 2016-17 to FY 2023-24 at a Glance	127
Table – 6A	Projection of Production, Installed Capacity, Export and Import of Selected Basic Major Petrochemical (Group-wise) from the FY 2024-25 to FY 2029-30	128
Table- 7	Production, Installed Capacity & Growth of Selected Major Petrochemicals (Group- wise) from the FY 2016-17 to FY 2023-24	129
Table – 8	Production, Capacity Utilization & Growth of Selected Major Petrochemicals (Product-wise) from the FY 2016-17 to FY 2023-24	130-132

Table – 9	Installed Capacities of Selected Major Petrochemicals (Group- wise) from FY 2016-17 to FY 2023-24	133
Table - 10	Consumption of selected Major Petrochemicals (Product wise) from the FY 2016-17 to FY 2023-24	134-135
Section-III Foreign Trade		
Table – 11	Exports and Imports of Chemicals and Chemical Products (excluding Pharmaceutical Products and Fertilizers) from the FY 2016-17 to FY 2023-24	137
Table – 12	Exports and Imports of Chemicals & Chemical Products (including Pharmaceutical Products and Fertilizers) during 2016-17 to 2023-24	138
Table –12A	Net Imports of Chemicals and Chemical Products (including Pharmaceutical Products and Fertilizers) from the FY 2016-17 to FY 2023-24	139
Table – 13	Exports of Major Chemicals (Group-wise) from the FY 2016-17 to FY 2023-24	140
Table – 14	Imports of Major Chemicals (Group-wise) from the FY 2016-17 to FY 2023-24	141
Table – 15	Net Imports of Major Chemicals (Group-wise) from the FY 2016-17 to FY 2023-24	142
Table – 16	Exports of Major Chemicals (Product-wise) from the FY 2016-17 to FY 2023-24	143-145
Table – 17	Imports of Major Chemicals (Product-wise) from the FY 2016-17 to FY 2023-24	146-147
Table – 18	Net Imports of Major Chemicals (Product-wise) from the FY 2016-17 to FY 2023-24	148-149
Table – 19	Top Five Export Destinations of Selected Chemicals in the FY 2023-24	150-156
Table – 20	Top Five Import Destinations of Selected Chemicals in the FY 2023-24	157-162
Table – 21	Exports of Major Petrochemicals (Group-wise) from the FY 2016-17 to FY 2023-24	163
Table – 22	Imports of Major Petrochemicals (Group-wise) from the FY 2016-17 to FY 2023-24	164
Table – 23	Net Imports of Major Petrochemicals (Group-wise) from the FY 2016-17 to FY 2023-24	165
Table – 24	Exports of Major Petrochemicals (Product-wise) from the FY 2016-17 to FY 2023-24	166-168
Table – 25	Imports of Major Petrochemicals (Product-wise) from the FY 2016-17 to FY 2023-24	169-170
Table – 26	Net Imports of Major Petrochemicals (Product-wise) from the FY 2016-17 to FY 2023-24	171-172
Table – 27	Top Five Export Destinations of Selected Petrochemicals in the FY 2023-24	173-181
Table – 28	Top Five Import Destinations of Selected Petrochemicals in the FY 2023-24	182-190

Table – 29	Exchange Rates of Indian Rupee vis-a-vis US\$	191
Table – 30	World Exports of Chemicals by top 10 countries-2023	192
Table – 31	World Imports of Chemicals by top 10 countries-2023	193
Table – 32	India's share in World Exports and Imports of Chemicals -2023	194
Section-IV Foreign Direct Investment (FDI)		
Table – 33	Sector-wise FDI Inflows from the FY 2021-22 to FY 2023-24 (in US\$ million)	196
Section-V Index of Industrial Production (IIP)		
Table – 34	Monthly Production Growth in 'Chemicals and Chemical Products' vis-a-vis Manufacturing Sector in the FY 2023-24 (Based on Index of Industrial Production with base year: 2011-12)	198
Table – 35	Annual Production Growth in Chemicals and Chemical Products Vis -a-Vis Manufacturing Sector from the FY 2017-18 to FY 2023-24 (Based on Index on Industrial Production with base year: 2011- 12)	199
Table – 36	Weights of Products covered under Chemicals and Chemical Products (Industry Division 20 of NIC- 2008)	200-201
Section-VI Inflation Based on Wholesale Price Index (WPI)		
Table – 37	Annual Inflation of Chemicals & Chemical products vis-à-vis other commodities from the FY 2017-18 to FY 2023-24 (Based on Wholesale Price Index with base year: 2011-12)	203
Table –38	Monthly Inflation of Chemicals & Chemical Products vis-a-vis Other Commodities in the FY 2023-24 (Based on Wholesale Price Index with base year: 2011-12)	204
Table –39	WPI (Base year 2011-12) of Chemicals & Chemical Products (Group Wise) from the FY 2017-18 to FY 2023-24	205
Section-VII Miscellaneous		
Table –40	Growth Rates of Core Industries (%) from the FY 2018-19 to FY 2023-24 (Base Year: 2011-12)	207
Table –41	Index of Core Industries from the FY 2018-19 to FY 2023-24 (Base Year: 2011-12)	208
Table –42	Consumption of Naphtha, Natural Gas and Fuel Oil from the FY 2018-19 to FY 2022-23	209
Table –43	Important Indicators of Industry Division 29, 21 (Unincorporated Sector) in 2015-16 (July 2015- June 2016)	210
Table –44	Employment in Chemicals and Chemicals products (Industry Division 20, NIC-2008) from the FY 2017-18 to FY 2022-23	211

Table –45	Gross Value Added from Chemical and Chemical Products (Industry Division 20: NIC 2008) and Pharmaceutical; Medicinal Chemicals and Botanical Product (Industry Division 21: NIC 2008) vis-a-vis Manufacturing sector and all Economic Activities (at Current prices)	212
Table –46	Gross Value Added from Chemical and Chemical Products (Industry Division 20: NIC 2008) and Pharmaceutical; Medicinal Chemicals and Botanical Product (Industry Division 21: NIC 2008) vis-a-vis Manufacturing sector and all Economic Activities (at constant price: 2011-12)	213
Table –47	Value of Output from Chemicals and Chemical Products (Industry Division 20: NIC 2008) and Pharmaceutical; Medicinal Chemicals and Botanical Product (Industry Division 21: NIC 2008) vis-a-vis Manufacturing sector (at Current price)	214
Table –48	Value of Output from Chemicals and Chemical Products (Industry Division 20: NIC 2008) and Pharmaceutical; Medicinal Chemicals and Botanical Product (Industry Division 21: NIC 2008) vis-a-vis Manufacturing sector (at constant prices: 2011-12)	215
Table –49	All India Estimate of Selected Characteristics of Factory Sector for Chemical and Chemical Products (Industry Division 20: NIC 2008), Pharmaceutical; medicinal Chemicals and Botanical Product (Industry Division 21: NIC 2008) and Manufacture of Magnetic and Optical Media (Industry Division 268)	216
Table –50	State wise Estimate of Selected Characteristics of Factory Sector for Industry Division 20: NIC 2008: Chemicals and Chemical Products	217
Table –51	Production, Import, Export, Consumption of Major Chemicals and Petrochemicals and Export as percentage (%) of Production and Imports as percentage (%) of Consumption	218
Table –52	Exports of all Chemicals as % of Value of output and Imports of all Chemicals as % of Consumption	219

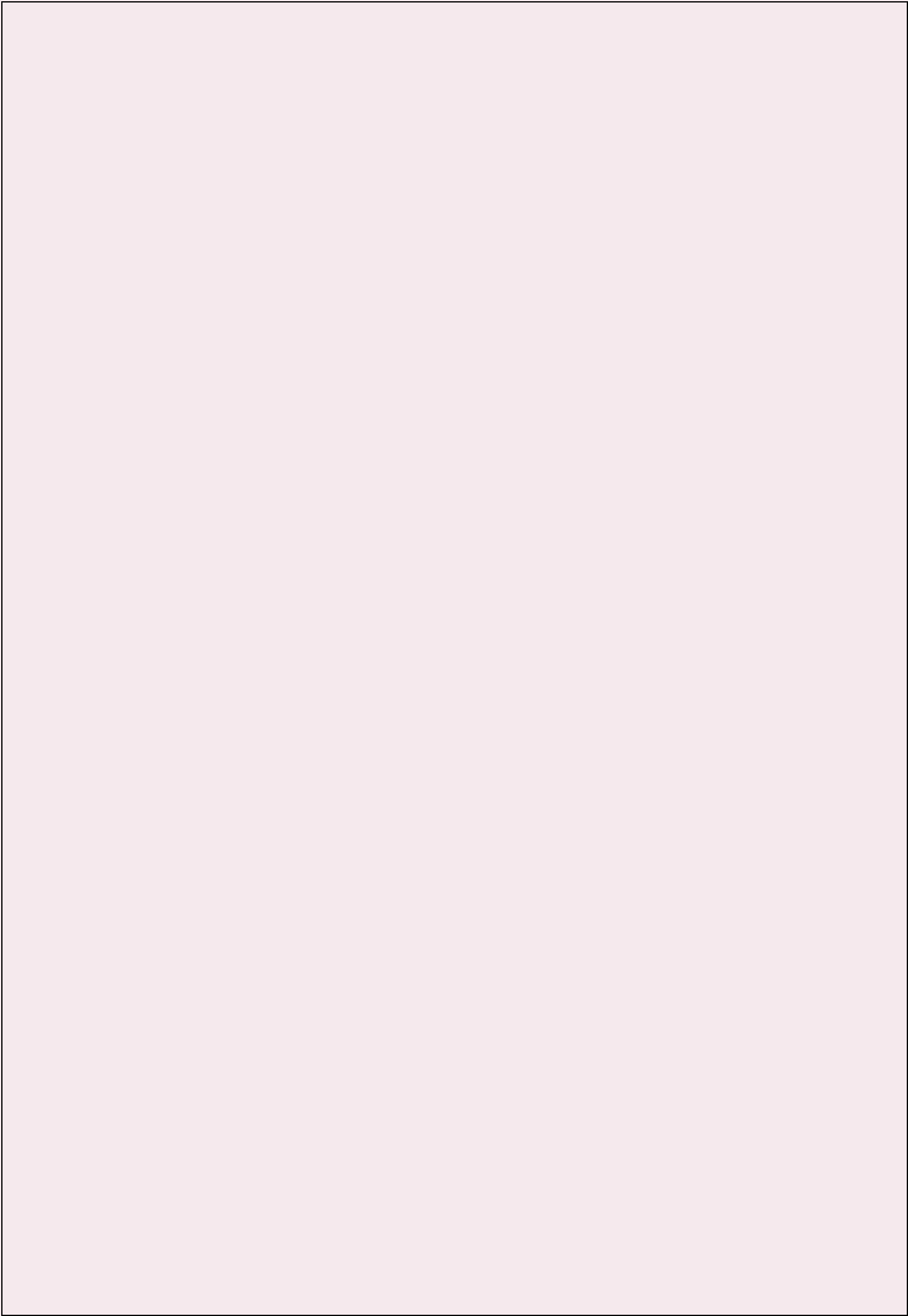
Introduction

Acronyms

Coverage

Data Sources and Definitions

Duration of the Data



Chemical and Petrochemical Sector is one of the pioneering sectors having an impact on day-to-day needs of the society. Chemical Industry is playing a vital role in addressing our basic needs in the fields of food and water security, shelter, clothing and textiles, health care, information, communication and entertainment and many more. In order to boost domestic production capacities as a part of Petroleum Sector, Chemicals and Petrochemicals Investment Regions (PCPIRs) policy, a perspective planning for the chemical and petrochemical industry has been initiated to study demand supply scenario keeping in view the existing and under execution capacities. This will help to realize India's vision of becoming self-reliant and provide substantial employment to the youth in the Chemical Sector.

2. Statistics and Monitoring (S&M) Division under the Department of Chemicals & Petrochemicals (DCPC) compiles statistics on monthly production data and installed capacity of selected Chemical and Petrochemical products from selected large and medium scale units. It also derives estimates of consumption of the chemical's products in the country. Data on Export and Import of Chemical and Petrochemical items are being maintained by the DCPC based on the data received from the Directorate General of Commercial Intelligence and Statistics (DGCIS), Ministry of Commerce and Industry.

3. This publication consists of seven chapters, namely,

- Chapter-1: An Overview of Chemical and Petrochemical Sectors;
- Chapter-2: Global Scenario;
- Chapter-3: Important Economic Indicators;
- Chapter-4: Important Definitions of CPC Coding System and Economic System;
- Chapter-5: Indices Released by Government of India;
- Chapter-6: ChemIndia - Chemicals inventory of India;
- Chapter-7: Relevant National & International Regulations for C&PC Sector
- Chapter-8: Glimpses of Important Trends from the FY 2019-20 to FY 2023-24.

Chapter-1 besides defining Basic Chemicals, Specialty Chemicals & Agro-chemicals, also presents the latest status of Chemical Sector in India. Chapter-2 presents the status of Indian Chemical Sector vis-a-vis other countries of the world. Chapter-3 provides important statistics like Gross Valued Added (GVA), Index of Industrial Production (IIP), Export and Import of Chemical sector. Chapter 4 describes Harmonized System (HS), CPC Coding System and describe important definitions like Gross Domestic Product (GDP), Net Domestic Product (NDP), Gross National Product (GNP), Net National Product (NNP), Gross Value Added (GVA) and the relation

between GDP&GVA and also provides statistical figure thereof. Chapter-5 describes important indices like IIP, Consumer Price Index (CPI) & Wholesale Price Index (WPI). Chapter 6 describes the initiative of Department of Chemical and Petrochemical in developing a secure web-based chemical and petrochemical data management system. It is a pan India portal of Chemical Inventory named as ChemIndia (<https://chemindia.chemicals.gov.in/>). Chapter-7 provides Relevant National & International Regulations for C&PC Sector. Chapter-8 provides graphical representation of trends as well as summarise information from the FY 2019-20 to FY 2023-24 on Production, Installed Capacity, Sales and Purchase for various groups under Major Chemicals and Major Petrochemicals along with brief analysis. At the end of the Appendices Section, Statistical tables presenting information inter-alia on Production, Installed Capacity, Capacity Utilization, Imports / Exports along with their growth rates from the FY 2019-20 to FY 2023-24 have also been provided. Detailed table on Foreign Trade, FDI, IIP, WPI etc. related to Chemical and Petrochemical Sector have been included in the Appendices Section.

4. The share of Gross Value Added (GVA) of Chemicals Sector in the Manufacturing Sector in the FY 2022-23 is about 9.8% at current prices. GVA of Chemical Sector has grown with CAGR of 9.05% from the FY 2017-18 to FY 2022-23.

5. The production of selected Major Chemicals and selected Major Petrochemicals for each Group is generally found to be growing consistently over the years. In case of Major Chemicals, the production has grown with a CAGR of 3.5% over a period of 8 years while Major Petrochemicals has grown with a CAGR of 3.0% during the same period.

6. Installed Capacity utilization of Major Chemicals was 76.2% in the FY 2023-24 while it was around 88.0% in case of Major Petrochemicals over the last year. The utilization of installed capacity was around 82.0% and 68.9% for the Alkali Chemicals and Inorganic Chemicals respectively in the FY 2023-24. The utilization of installed capacity was 112.0% for the Synthetic Detergent Intermediates whereas; it was 97.8%, 96.9%, 85.7% and 46.6% for Synthetic Rubber, Polymers, Synthetic Fibres and Performance Plastics respectively in the FY 2023-24.

7. Among Selected Major Chemicals, there was a substantial import of Inorganic Chemicals and Organic Chemicals into the country in the FY 2023-24. Amongst Inorganic Chemicals, three products, namely, Carbon Black (Rs. 1,710/- crore), Calcium

Carbonate (Rs.527/-crore) and Aluminium Fluoride (Rs.512/- crore) had been imported worth more than Rs. 2,700/- crores. Amongst Organic Chemicals, seven products, namely, Methanol (Rs. 7,431/- crore), Acetic Acid (Rs. 4,177/- crore), Phenol (Rs. 1,988/- crore), Aniline (Rs. 1,822/- crore), Menthol (Rs. 1,091/- crore), Acetone (Rs.912/- crore), and Citric Acid (Rs.798/- crore) had imported worth more than Rs.18, 200/- crore. (Table 17).

8. Amongst Selected Major Petrochemicals, substantial import was seen for Polymers, Synthetic Rubber and Synthetic Fibres/Yarn into the country in the FY 2023-24. Amongst Polymers, three products, namely, High Density Polyethylene (Rs. 18,830/-crore), Polypropylene (Inc. Co-Polymer) (Rs. 15,879/-crore) and Poly Vinyl Chloride (Rs. 4,713/-crore) had import of approximately Rs. 39,421/-crore. Amongst Synthetic Rubber, four products, namely, Ethyl Vinyl Acetate (Rs. 3,179/-crore), Styrene Butadiene Rubber (Rs. 2,678/-crore), Poly Butadiene Rubber (Rs. 1,731/-crore) and Butyl Rubber (Rs. 1,346/-crore), was imported of approximately worth Rs. 8,934/-crore into the country (Table 25).

9. The trade deficit in the FY 2023-24 (i.e. net import) in Chemicals and Chemical products (comprising chapters 28, 29, 32, 38, 39, 4002, 54 and 55 of HS code) was Rs. 2,27,093 /-crore as per information on DGCIS portal (Table 12 A). The trade deficit of selected Major Chemicals and Petrochemical Products was around Rs. 75,878/-crore as per figures received from DGCIS, Kolkata (Tables 15 & 23). The export / import monitored by DCPC are basically intermediate in nature.

10. In respect of Major Chemicals at group level, it is observed that Pesticides and Dyes & Pigments was in trade surplus whereas Alkali Chemicals, Organic Chemicals and Inorganic Chemicals were in trade deficit during 2023-24 (Table 18). However, in respect of Major Petrochemicals at group level Fibre Intermediates, Polymers, Synthetic Rubber, Performance Plastics, Synthetic Detergent Intermediates and Other Petro-based Chemicals were in trade deficit, whereas Synthetic Fibre, Olefins and Aromatics were in trade surplus during the same period (Table 26). This contributes to the overall trade deficit in both major chemicals and major petrochemicals, leading to a net trade deficit for the chemicals and petrochemicals sector.

Acronyms

AF	Acrylic Fiber (including Dry Spun)
ASI	Annual Survey of Industries
ACN	Acrylonitrile
CAGR	Compound Annual Growth Rate
CEFIC	European Chemical Industry Council
NSO	National Statistical Office
CSO	Central Statistics Office
CPI	Consumer Price Index
DGCI&S	Directorate General of Commercial Intelligence & Statistics
DPIIT	Department for Promotion of Industry and Internal Trade
DMT	Dimethyl Terephthalate
EO	Ethylene Oxide
EPDM	Ethyl Propylene Dimers
EVA	Ethyl Vinyl Acetate
EX-PS	Expandable Polystyrene
FY	Financial Year
FDI	Foreign Direct Investment
GVA	Gross Value Added
HBR	Halo Butyl Rubber
HDPE	High Density Polyethylene
IIP	Index of Industrial Production
IIR	Iso Butylene Isoprene Rubber
ISIC	International Standard Industrial Classification
ITC (HS)	Indian Trade Classification (Harmonized System)
KTPA	Thousand Tons Per Annum
LAB	Linear Alkyl Benzene
LDPE	Low Density Polyethylene
LLDPE	Linear Low Density Polyethylene
MEG	Mono Ethylene Glycol
MEK	Methyl Ethyl Ketone
MMA	Methyl Methacrylate
MMSCM	Million Metric Standard Cubic Meters

MoSPI	Ministry of Statistics and Programme Implementation
MT	Metric Tons
NBR	Nitrile Butadiene Rubber
NFY	Nylon Filament Yarn
NIC	National Industrial Classification
NIY	Nylon Industrial Yarn
ONCB	Ortho Nitro Chloro Benzene
PAN	Phthalic Anhydride
PBR	Poly Butadiene Rubber
PBT	Polybutylene Terephthalate
PET	Polyethylene terephthalate
PIB	Poly Isobutylene
PFY	Polyester Filament Yarn
PG	Propylene Glycol
PMMA	Polymethyl Methacrylate
PNCB	Para Nitro Chloro Benzene
PO	Propylene Oxide
PP	Polypropylene
PPFY	Polypropylene Filament Yarn
PPSF	Polypropylene Staple Fibre
PS	Poly Styrene
PSF	Polyester Staple Fibre
PSFF	Polyester Staple Fibre Filament
PTA	Purified Terephthalic Acid
PVC	Poly Vinyl Chloride
SAN	Styrene Acrylonitrile
SBR	Styrene Butadiene Rubber
UNSC	United Nations Statistical Commission
VAM	Vinyl Acetate Monomer
WPI	Wholesale Price Index
CAS	Chemical Abstracts Service
UN	United Nations

Coverage

Major Chemicals			
S. No.	Group	Products	
I	Alkali Chemicals	Soda Ash	Caustic Soda
		Liquid Chlorine	
II	Inorganic Chemicals	Aluminium Fluoride	Calcium Carbide
		Carbon Black	Potassium Chlorate
		Sodium Chlorate	Titanium Dioxide
		Red Phosphorous	Hydrogen Peroxide
		Calcium Carbonate	
III	Organic Chemicals	Acetic Acid	Acetic Anhydride
		Acetone	Phenol
		Methanol	Formaldehyde
		Nitrobenzene	Citric Acid
		Maleic Anhydride	Pentaerythritol
		Aniline	Chloromethane
		ONCB	PNCB
		MEK	Acetaldehyde
		Ethanol amines	Ethyl Acetate
		Menthol	Ortho- Nitro Toluene
		Isobutyl Benzene	
IV	Pesticides (Technical Grade)	D.D.T.	Malathion
		Parathion(Methyl)	Dimethoate
		D.D.V.P.	Quinalphos
		Monocrotophos	Phosphamidon
		Phorate	Ethion
		Endosulfan	Fenvalerate
		Cypermethrin	Anilophos
		Acephate	Chlorpyrifos
		Phosalone	Metasystox
		Temephos	Fenthion
		Triazophos	Lindane
		Temephos	Deltamethrin
		Alphamethrin	Profenofos Technical

S. No.	Group	Products	
		Pretilachlor Technical	Lambda Cyhalothrin
		Phenthoate	Permethrin Tech
		Imidacaloprid Tech	Captan & Captafol
		Ziram (Thio Barbamate)	Carbendazim (Bavistin)
		Calixin	Mancozeb
		Copper-Oxychloride	Hexaconazole
		Metconazole	2, 4-D (2,4-Dichlorophenoxyacetic acid)
		Butachlor	Ethofumesate Technical
		Thiamethoxam Technical	Pendimethalin
		Metribuzin	Triclopyr Acid Tech
		Isoproturon	Basalin
		Glyphosate	Paraquat
		Diuron	Atrazin
		Fluchloralin	Zinc Phosphide
		Aluminium Phosphide	Methyl Bromide
		Dicofol	
V	Dyes and Pigments	Acid Direct Dyes (other than AZO)	Azo Dyes
		Basic Dyes	Disperse Dyes
		Oil soluble (Solvent Dyes)	Fast Colour Bases
		Ingrain Dyes	Solubilised Vat Dyes
		Optical Whitening Agents	Organic Pigments
		Inorganic Pigments	Pigment Emulsion
		Reactive Dyes	Sulphur Dyes
		Vat Dyes	Food Colours
		Naphthols	Other Dyes

Major Petrochemicals			
A. Basic Major Petrochemicals			
S. No.	Group	Products	
I	Synthetic Fibres	Acrylic Fibre	Polyester Staple Fibre Filament
		Nylon Filament Yarn	Nylon Industrial Yarn/Tyre Cord
		Polyester Filament Yarn	Polyester Staple Fibre
		Polypropylene Filament Yarn	Polypropylene Staple Fibre
		Polyster Industrial Yarn	Elastomeric/Spandex Filament Yarn
II	Polymers	Low Density Polyethylene	High Density Poly Ethylene
		Poly Styrene	Polypropylene (Inc. Co-Polymer)
		Expandable Poly Styrene	Poly Vinyl Chloride
		Linear Low Density Poly Ethylene	PVC Compound
III	Synthetic Rubber (Elastomers)	Styrene Butadiene Rubber (SBR)	Poly Butadiene Rubber (PBR)
		Nitrile Butadiene Rubber (NBR)	Ethyl Propylene Dimers (EPDM)
		Ethyl Vinyl Acetate (EVA)	Butyl Rubber
IV	Synthetic Detergent Intermediates	Linear Alkyl Benzene (LAB)	Ethylene Oxide (EO)
V	Performance Plastics	Acrylonitrile Butadiene Styrene (ABS) Resin	Nylon-6
		Nylon 6,6	Poly Methyl Methacrylate (PMMA)
		Styrene Acrylonitrile (SAN) Resin	Polytetrafluoroethylene(PT FE)
		Polyester Chips/PET Chips	
B. Intermediates			
I.	Fibre Intermediates	Acrylonitrile	Caprolactum
		Mono Ethylene Glycol (MEG)	Dimethyl Terephthalate (DMT)
		Purified Terephthalic Acid (PTA)	
II.	Building Blocks	(a) Olefins	
		Ethylene	Propylene
		Butadiene	
		(b) Aromatics	
		Benzene	Toluene
		Ortho Xylene	Para Xylene
		Mixed Xylene	

C. Other Petro-based Chemicals		
Diethylene Glycol	Diacetone Alcohol	Ethylene Dichloride
Butanol	Oxo Alcohol	2-Ethyl Hexanol
Vinyl Chloride Monomer	Epichlorohydrine	Iso Butylene
PET	PIB	Polycarbonate
Propylene Oxide	Propylene Glycol	Polyvinyl Acetate Resin
Unsaturated Polyester Resin	Methyl Methacrylate	Iso-Butanol
Ethyl Benzene	C4-Raffinate	Cellulose Acetate Butyrate
Polyacetal Resin	Phthalic Anhydride	Styrene
Vinyl Acetate Monomer	Isopropanol	Polyol
Metaxylene	Methyl Isobutyl Ketone	PBT
Cellulose Acetate Sheet	Cellulose Nitrate Sheet	Melamine Moulding Powder

Data Sources & Definitions

The major sources of data presented in this publication are:

i	Production & Installed capacities	Production of Major Chemicals and Petrochemicals and their installed capacities have been aggregated based on monthly returns received from large and medium scale Chemicals & Petrochemicals Industries of the country.
ii	Imports & Exports	Directorate General of Commercial Intelligence & Statistics (DGCIS), Ministry of Commerce & Industry, Kolkata.
iii	FDI	Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry, New Delhi.
iv	IIP	National Statistical Office (NSO), Ministry of Statistics & Programme Implementation, New Delhi.
v	WPI	Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry, New Delhi.
vi	Chemical Industry (Broad definition)	The chemical industry includes organic chemicals, inorganic chemicals, pharmaceuticals products, fertilizers, tanning or dyeing extracts, dyes pigments, paints and varnishes, putty and other mastics inks, essential oils, perfumery cosmetic, soap, organic surface, active agents, washing, lubricating, artificial waxes, dental waxes, polishing, albuminoidal substance, modified starches, glues, enzymes, explosive, pyrotechnic products, beverages, spirits and vinegar, matches, pyrophoric alloys, photographic or cinematographic goods, miscellaneous chemical products, petrochemicals, plastics synthetic, rubber, man-made filaments, man-made fibre.
vii	Chemicals and Petrochemicals (Narrow definition)	The Chemicals and Petrochemical products monitored by the Department of Chemicals & Petrochemicals are selected major products and the list of these products is given in the tables 3 & 8 respectively. Unless contrary is mentioned, the terms 'Major Chemicals' and 'Major Petrochemicals' refer to the products or groups thereof as enumerated in the tables 3 & 8.

Duration of the Data

Data	Data Source	Duration
Installed Capacity Production	DCPC	FY 2016-17 to FY 2023-24
Import / Export	DGCIS, Kolkata, M/o Commerce and Industry	FY 2016-17 to FY 2023-24
Exchange Rates of Indian Rupee vis-à-vis US\$	Financial Benchmarks India Private Limited (https://www.fbil.org.in)	April 2021 to March 2024
FDI	DPIIT	FY 2021-22 to FY 2023-24
IIP	MoSPI	FY 2017-18 to FY 2023-24
WPI	Office of the Economic Advisor (http://eaindstry.nic.in)	FY 2017-18 to FY 2023-24
Gross value added, Value Output	MoSPI	FY 2017-18 to FY 2022-23
World Import / Export	UN Comrade	2023
Number of factories, Number of Workers, Total output	Annual Survey of Industries	FY 2017-18 to FY 2021-22

Chapter 1

1.1 The chemical industry is the backbone of industrial and agricultural development of the country and provides building blocks for several downstream industries, such as textiles, papers, paints, soaps, detergents, pharmaceuticals, varnish etc. It is one of the most diversified sectors of all industrial sectors covering thousands of commercial products. Indian chemical industry comprises of small scale, medium scale as well as large scale units. With initiatives like "Make in India" programme gaining steam, investments, innovation and infrastructure are going to be the major thrust areas for chemical industry players. The current per capita consumption of chemical products in India is about 1/10 of the world average, indicating that the demand potential is yet to be realized. The industry is important as it has several linkages with other sectors of an economy. Petrochemicals have backward linkages with other industries in petroleum refining, natural gas processing and forward linkages with industries dealing variety of downstream products. Also, the industry offers alternatives, which serve as substitutes for natural products and therefore, it has the capacity to meet the constantly growing demand that would otherwise strain the natural resources. The value additions in the petrochemicals chain offer immense possibilities and cater to the need of textiles and clothing, agriculture, packaging, infrastructure, healthcare, furniture, automobiles, information technology, power, electronics and telecommunication, irrigation, drinking water, construction needs and host of other articles of daily and specialized usage, amidst other emerging areas.

1.2 In Chemicals sector, 100% FDI in India is allowed under the automatic route (except in the case of certain hazardous chemicals). Manufacture of most chemical products, inter-alia, covering organic / inorganic, dyestuffs & pesticides is de-licensed. The entrepreneurs need to submit only Industries Entrepreneur Memorandum (IEM) with the Department of Industrial Policy & Promotion provided location of the project falls outside standard urban area limits of metropolitan cities and municipal cities. However, the following items are still covered in the compulsory licensing list because of their hazardous nature as required by international conventions.

- Hydrocyanic acid & its derivatives
- Phosgene & its derivatives
- Isocyanates & di-isocyanates of hydrocarbons.

1.3 Chemicals can be broadly divided into the following sub-groups: -

Two broad categories within the chemical industry, each with its own characteristics and purposes are:

1. Basic Chemicals are known as commodity-type chemicals which are usually produced in large quantities and are essential for the manufacturing of a wide range of goods.

Examples of basic chemicals include:

- I. Petrochemicals: Chemicals derived from petroleum or natural gas, such as ethylene, propylene, and benzene, used as raw materials for plastics, synthetic fibres, and more.
 - II. Inorganic Chemicals: Chemicals like sulphuric acid, chlorine, and ammonia used in various industrial processes, including manufacturing fertilizers and metals.
 - III. Bulk Polymers: These are polymers produced in large quantities, such as polyethylene, polypropylene, and polyvinyl chloride (PVC), which are used in plastics manufacturing.
2. Specialty Chemicals are higher value-added chemicals that are produced in smaller quantities and are often tailored to specific applications. These chemicals provide unique properties or functions and are used in various industries, including pharmaceuticals, electronics, cosmetics, and more.

Examples of specialty chemicals include:

- I. Pharmaceutical Intermediates: Chemical compounds used as intermediate steps in the production of pharmaceutical drugs.
- II. Agrochemicals: Chemicals like pesticides, herbicides, and fertilizers used in agriculture to enhance crop yield and protect plants from pests and diseases.
- III. Performance Chemicals: Chemicals designed to provide specific properties, such as flame retardants, anti-corrosion agents, and coatings.
- IV. Electronic Chemicals: Chemicals used in the manufacturing and assembly of electronic components, such as semiconductors and printed circuit boards.

1.4 Further, Chemicals are broadly classified into the following groups:

I. Alkali:

Alkali also known as a base, are typically found on the opposite end of the pH scale with pH values above 7 and are known for their ability to neutralize acids and react with them to form salts and water in a process called neutralization.

The main characteristics of alkalis include:

- They taste bitter unlike acids which taste sour.
- They are slippery or soapy to touch due to the reaction of alkalis with the natural oils on the skin, forming soap-like substances.
- They have the ability to turn red litmus paper blue.
- They react with acid, to form salt and water, neutralizing the acidic properties.
- The pH scale ranges from 0 to 14, with 7 being neutral, alkalis have pH values greater than 7, indicating their basic nature.

Examples of alkalis include sodium hydroxide (NaOH), potassium hydroxide (KOH), calcium hydroxide (Ca (OH)₂), and ammonia (NH₃).

II. Inorganic chemicals:

Inorganic chemicals are chemical compounds that do not contain carbon-hydrogen (C-H) bonds.

Key characteristics of inorganic chemicals include:

- They contain elements such as metals, non-metals, and metalloids. They can form various ionic or covalent bonds without the presence of carbon-hydrogen bonds.
- They encompass a diverse range of compounds. Examples include salts (such as sodium chloride), metals and metal oxides (like iron oxide), minerals (e.g., calcium carbonate), acids and bases (like sulfuric acid and sodium hydroxide, respectively) etc.
- They are naturally occurring and can be found in minerals, rocks, soil, water, and the atmosphere.
- They are used in agriculture Industry as fertilizers, in medicine field as metal-based drugs or contrast agents for medical imaging, in construction for cement production, in electronics for semiconductor materials, and in many other fields.
- They are either highly stable or can react and participate in redox reactions.

Exceptions: organometallic compounds, which contain metal-carbon bonds are considered a blend of organic and inorganic chemicals

III. Organic Compounds:

Organic chemicals contain carbon atoms bonded with other elements such as hydrogen, oxygen, nitrogen, sulphur, and more.

Key characteristics of organic chemicals include:

- They contain carbon atoms, which have the unique ability to form stable covalent bonds with other carbon atoms and various other elements.
- They include a vast array of compounds, ranging from simple hydrocarbons like methane and ethane to complex molecules like proteins, carbohydrates, lipids, and nucleic acids.
- They form the basis of biomolecules such as sugars, amino acids, fatty acids, and nucleotides, which are crucial for the structure and functioning of cells and living organisms.
- They are used in pharmaceuticals, plastics, synthetic rubber, dyes, pesticides, solvents, perfumes, and many other products.

Note: carbonates, carbides, and cyanides are examples of carbon-containing compounds that fall under the domain of inorganic chemistry, not organic.

IV. Dyes and Pigments:

Dyes and pigments are both colouring agents used to add colour to various materials even though they serve a similar purpose, there are fundamental differences in their properties and applications.

Key characteristics of dyes include:

- They are soluble in liquids, which allows them to be easily applied to different materials.
- They are generally transparent or semi-transparent, allowing the underlying material's colour or texture to show through.
- They are absorbed into the material, resulting in a more permanent and vibrant coloration.
- They are commonly used in the textile industry for colouring fabrics, in the printing industry for inks, and have other applications like food colouring, cosmetics, and medical dyes.

Key characteristics of pigments include:

- They are insoluble in the medium they are applied to, which means they do not dissolve but remain as solid particles.
- They are generally opaque, meaning they cover the underlying material's colour and texture, providing excellent hiding power.
- They are often more stable and resistant to fading than dyes, making them suitable for outdoor applications and products that need to withstand exposure to light, heat, and other environmental factors.
- Pigments are commonly used in paints, coatings, plastics, ceramics, and various other applications.

V. Pesticides and Insecticides:

Pesticides are chemical substances or mixtures of chemicals that are used to mitigate, or eliminate Pests i.e., insects, weeds, fungi, rodents, and other organisms to protect agricultural crops and indirectly protect human health and livestock from their adverse effects.

Pesticides are grouped according to the types of pests they kill, such as:

- Larvicides – Target larvae of insects
- Insecticides: Target insects and arthropods
- Herbicides: Target unwanted plants, commonly known as weeds
- Fungicides: Target fungi and mold that can damage plants
- Rodenticides: Target rodents like rats and mice
- Nematicides: Target nematodes, microscopic worms that can harm plants
- Bactericides and Virucides: Target bacteria and viruses that affect plants

Key characteristics of Pesticides include:

- They help increase agricultural productivity by protecting crops from pests that can cause yield losses.
- They also contribute to reducing the spread of disease vectors, such as mosquitoes carrying malaria or ticks carrying Lyme disease.
- However, their use needs to be balanced with careful consideration of potential environmental and health impacts.
- They are formulated as liquids, powders, granules, aerosols, or gases for specific application methods, such as spraying, dusting, or fumigation.

Examples of common pesticides and insecticides include organophosphate are insecticides, they affect the nervous system of insect, carbamate also affect the nervous system of insect, pyrethroid are synthetic version of pyrethrin, a naturally occurring pesticide, found in chrysanthemums (Flower) etc.

1.5 Petrochemicals are broadly classified into the following groups:

I. Synthetic Fibres:

Synthetic fibres, also known as man-made fibres or synthetic textiles are engineered to have specific properties, making them suitable for various applications in the textile industry. They are designed to imitate or enhance the characteristics of natural fibres like cotton, silk, or wool, while offering distinct advantages.

Key characteristics of Synthetic fibres include:

- They are not derived from natural sources like plants or animals instead, they are created by polymerizing synthetic materials derived from petrochemicals or other raw materials.
- They can be engineered to have a wide range of properties, including strength, durability, elasticity, water resistance, and colourfastness allowing them to be tailored for specific uses.
- They exhibit resistance to chemicals, mildew, and insects, making them suitable for applications where natural fibres might be less durable.
- They are used in a variety of products, including clothing, home furnishings, industrial textiles, geotextiles, ropes, medical textiles, and more.

Examples of synthetic Fibres include polyester, nylon, acrylic, polypropylene, rayon (Viscose) etc.

II. Polymers:

Polymers are composed of repeating units called monomers. These monomers are chemically bonded together in long chains or networks, to form large molecules. Polymers can be natural or synthetic and have a wide range of applications in various fields.

Key features of polymers include:

- These monomers can be identical or different, linked together through chemical bonds to create the polymer chain. Some polymers can have thousands or even millions of monomer units in their structure.
- They have higher molecular weights being made up of repeating units, resulting in a larger mass for each molecule.
- They have diverse properties, such as flexibility, strength, elasticity, thermal resistance, and electrical conductivity, hence are chemical processed to form materials like plastics, synthetic fibres, and rubber.
- Being versatile they have applications in various industries, such as packaging, textiles, construction, electronics, automotive, healthcare, and more.

Examples of common synthetic polymers include polyethylene (used in plastic bags, bottles, and various packaging materials), polypropylene (found in automotive parts, textiles, and household items), polyvinyl chloride (PVC) (used in pipes, electrical insulation, and vinyl products), polystyrene (used in foam packaging and disposable utensils) polyethylene terephthalate (PET) (used in beverage bottles and synthetic fibres (e.g., polyester).

III. Synthetic rubber

Synthetic rubber also known as elastomers, is a man-made material designed to imitate the properties and characteristics of natural rubber obtained from the latex sap of certain plants.

Key characteristics of synthetic rubber include:

- It is produced by polymerizing various petrochemical-derived monomers, using either emulsion polymerization or solution polymerization.
- They can be engineered to have specific properties, such as elasticity, flexibility, durability, resistance to heat, chemicals, and weathering, making it suitable for diverse applications.
- It is used manufacturing of tires (largest application of synthetic rubber), gaskets, belts, hoses, rubber soles, in industrial goods such as conveyor belts, seals, and in consumer goods such as gloves, swimwear, and inflatable items etc.

Examples of common synthetic rubber include styrene-butadiene rubber (SBR), polybutadiene rubber (BR), neoprene (chloroprene rubber), and nitrile rubber (NBR).

IV. Synthetic detergent:

Synthetic detergents, commonly known as detergents, are cleaning agents that are specifically formulated to remove dirt, stains, grease, and other contaminants from various surfaces. Unlike soap, which is produced via saponification of natural fats and oils, synthetic detergents are chemically synthesized compounds designed to provide effective cleaning

Key characteristics of synthetic detergents include:

- Their molecules allow detergents to break down and emulsify grease and oils, enabling them to be washed away with water.
- They are effective in both soft and hard water i.e., even in presence of calcium and magnesium ions, synthetic detergents do produce lather and maintain their cleaning efficiency.
- They are used in various cleaning products, including laundry detergents, dishwashing liquids, surface cleaners, shampoos, body washes, and more.
- They contain chemicals that may have environmental impacts, surfactant containing wastewater, if discharged into the environment, results in harming aquatic life, polluting the water and endangering human health. Therefore, there's a growing interest in developing environmentally friendly detergents.

Examples of common synthetic rubber include sodium lauryl sulphate (SLS) (used in personal care products like shampoos, body washes, and toothpaste) cetyl trimet04hyl ammonium chloride (CTAC) (used in fabric softeners, hair

conditioners, and some industrial cleaners) linear alkyl benzene sulfonate (LAS) (used in laundry detergents and household cleaners).

V. Performance plastics

Performance plastics, also known as engineering plastics or high-performance polymers, offer advanced mechanical, thermal, electrical, and chemical properties and are specifically designed to withstand challenging conditions and provide enhanced performance compared to standard or commodity plastics.

Key features of performance plastics include:

- They can maintain their mechanical properties over a broad temperature range, from high-temperature applications to extremely low temperatures.
- They often have higher tensile strength, impact resistance, and toughness compared to standard plastics.
- They are resistant to various chemicals, acids, solvents, and corrosive substances, making them suitable for applications involving contact with aggressive environments.
- Some of them exhibit excellent electrical insulating properties and can be used in applications requiring high dielectric strength.
- They have low coefficients of thermal expansion and exhibit minimal creep, maintaining their shape and size even under stress and temperature changes.
- They can have self-lubricating properties, reducing wear and friction in moving parts.
- They have inherent flame-retardant properties, making them suitable for applications where fire safety is a concern.
- Despite their enhanced properties, they are often lighter than metals, making them useful in weight-sensitive applications.

Examples of performance plastics include: polyether ether ketone (PEEK) (used in aerospace, medical implants, and industrial applications.) polytetrafluoroethylene (PTFE) known as Teflon, PTFE (used in non-stick cookware, gaskets, and seals) polyimides (PI) (used in aerospace, electronics, and automotive applications) polyphenylene sulphide (PPS) used in automotive parts, electrical components, and industrial applications.

VI. Fiber intermediates:

Fiber intermediates serve as precursors in the production of synthetic fibres. These intermediates are transformed into polymers through various chemical processes, which are then spun into fibres for use in textiles, plastics, and other applications.

Key points about fibre intermediates include:

- They are the initial building blocks used to create the polymers that form synthetic fibres which are then processed into fibres through spinning and other techniques.
- They may undergo chemical modifications to enhance their properties or adjust their characteristics for specific applications.
- Once they are transformed into polymers and then fibres, can be further processed into textiles, garments, industrial materials, and other products.

Examples of fibre intermediates and their corresponding synthetic fibres include: terephthalic acid and ethylene glycol are combined to produce polyethylene terephthalate (PET) polymer used in textiles, bottles, and packaging. adipic acid and hexamethylenediamine react to form nylon 6,6 polymer used in nylon fibres used in acrylonitrile and other monomers used in the production of acrylic fibres, which have applications in textiles, clothing, and outdoor fabrics. caprolactam polymerized to create nylon 6 polymer, used in textiles and engineering plastics.

VII. Olefins

Olefins, also known as alkenes, are a class of unsaturated hydrocarbons with at least one carbon-carbon double bond in their molecular structure. They are an important group of organic compounds widely used in various industrial processes and applications. Olefins are commonly found in the production of plastics, polymers, and other chemicals.

Key characteristics of olefins include:

- The defining feature of olefins is the presence of a carbon-carbon double bond ($C=C$) in their chemical structure. This double bond gives them unique reactivity and properties.
- They are unsaturated hydrocarbons, meaning they have fewer hydrogen atoms in their structure compared to their saturated counterparts (alkanes).
- Due to the presence of the double bond, they readily undergo addition reactions, where atoms or groups of atoms are added to the double bond.
- They are crucial feedstocks in the petrochemical industry, are obtained from the cracking of hydrocarbons in processes like steam cracking, which breaks down larger hydrocarbon molecules into smaller olefin molecules.
- They serve as starting materials for the production of various polymers, including polyethylene and polypropylene.
- They are used to produce a wide range of products, including plastics, synthetic rubber, solvents, detergents, and more.

Examples of olefins include ethylene (simplest olefin), propylene (used in the production of plastics, synthetic rubber, and various chemicals), Butenes (used in the production of synthetic rubber, plastics, and fuels), hexenes and heptenes (as intermediates in the synthesis of chemicals and polymers), octenes and nonenes (used in the production of detergents, lubricants, and specialty chemicals)

VIII. Aromatics

Aromatics contain a specific type of cyclic structure called an aromatic ring or benzene ring which is stable and highly conjugated, having alternating single and double bonds.

Key characteristics of aromatic compounds include:

- They are highly stable due to the resonance (delocalization) of electrons over the entire ring. This resonance leads to a distribution of electron density that helps stabilize the molecule.
- They exhibit distinct reactivity patterns i.e., they undergo electrophilic aromatic substitution reactions, where a hydrogen atom in the ring is replaced by another atom or group.
- They are used as starting materials in the production of many chemicals, including plastics, dyes, pharmaceuticals, and solvents.

Examples of olefins include benzene (C₆H₆), simplest example which has a hexagonal ring with three alternating double bonds, toluene, xylene, naphthalene, and various aromatic compounds found in essential oils and perfumes.

1.6 Growth Drivers for the Chemical Sector:

- A large population, huge domestic market, dependence on agriculture and strong export demand are the key growth drivers for this industry.
- A global shift towards Asia as the World's chemicals manufacturing hub.
- Per capita consumption of chemicals in India is lower compared to western countries, so immense scope for new investments.
- Rise in GDP and purchasing power generates huge growth potential for the domestic market.
- A focus on new segments such as specialty and knowledge chemicals.
- Availability of skilled science professionals.
- World-class engineering and strong R&D capabilities.

1.7 Research & Development (R&D)

The Chemical sector is highly heterogeneous encompassing many segments like organic, inorganics, dyestuffs, pesticides, paints, soaps and petrochemicals etc. R&D is critical and of paramount importance for the growth & development of this sector. Continued R&D efforts in the part of the industry helps to improve the quality standards, obtain higher yields resulting reduction in cost of production and to earn competitive edge in the International Market. Indian Chemical Industry spends on R&D to the extent

of 2-3% of their total turnover, as against 9-10% by the multi-national companies in overseas countries. The industry would, therefore, have to make large investments in R&D to successfully counter the competition from the international chemicals industry. India has a number of scientific institutions and the country's strength lies in its large pool of highly trained scientific manpower. With the introduction of the Patent Act 2005, product innovation has assumed high importance.

1.8 Foreign Technology Agreements

Foreign Technology Agreements in India cater to the growth of the technology in the Indian industries. The foreign technology is transferred from foreign sources such as research and development agencies, foreign parent companies and other manufacturers to the Indian counterparts. The transfer of foreign technology takes place by the means of foreign direct investments and foreign technology collaboration agreements. Foreign Technology Agreements in India enable transfer of technology by the means of Government approval or through the automatic route delegated by the RBI.

1.9 The Chemical and Petrochemical Industries occupies a pivotal position in meeting some basic human needs and in improving the quality of life. It is extremely important to the economy and is an integral part of everyday life. India has a high population base and thus, faces formidable problems in providing sufficient food, medicines and adequate shelter. From a very modest level of 52 million MT in 1951-52, food grain production increased to about 329.6 million MT in the FY 2022-23 in the country (D/o Agriculture and Farmers Welfare, M/o Agriculture and Farmers Welfare published in PIB on 25 September 2024). The chemical industry provides the vital inputs required, chemical fertilizers and pesticides, to augment food production and save crops from attack by a variety of pests in a safe and selective way. The marked improvements in the average life expectancy of our countrymen can be at-least partially attributed to the Chemical Industry which has provided lifesaving drugs and other chemicals required for managing public health care. The problem of housing can be tackled effectively with the assistance of the Chemicals Industry. It plays a crucial role in housing development.

1.10 The Chemical Industry converts raw materials like water, salt, crude oil, natural gas, air, metals minerals, etc. into other valuable products. It has involved in almost every industrial process and therefore plays a significant role in economic and social development. Without Chemical Industry, there would be no electronics or

microelectronics, refrigerators, recording tapes, automobiles, laser discs, super magnets, processed foods and virtually all consumer products etc. Even the power industry depends on the Chemical Industry for its operations. The use of chemicals (ion exchange resins) becomes indispensable for removing dissolved salts needs in boilers and other applications. In gold mining, cyanide solution is used for extracting gold. The crude oil refining process uses chemicals, catalysts, heat and pressure to separate and combine the basic types of hydrocarbon molecules naturally found in crude oil into groups of similar molecules. Apart from providing a variety of drugs for alleviation of human sufferings, the chemical industry provides safe anaesthetic agents and high quality artificial aids including a hip joint made from ultra-low molecular weight polyethylene. Other health products including dental fills, contact lenses and dialyses also depend on the Chemicals Industry.

1.11 Some of the most useful materials, synthetic polymers, also known as plastics, have transformed our lives in the last few decades. The driving force for this development was provided by the need for conservation of natural resources and energy efficiency and inherent advantages of the material which created possibilities of innovative designs and cost savings. Its usefulness, adaptability and flexibility of usage have led to a shift in manufacturing from the conventional material-based products to synthetic products. The production of polymers has increased from 9.16 million tonne in the FY 2016-17 to 12.55 million ton in the FY 2023-24 (CAGR of 4.6%) while its consumption has increased from 12.70 million tons to 17.16 million tons during the same period. (Reference: Table: 6 &10 of Section II)

1.12 Chemicals from petroleum may range from petrochemicals such as ethylene, propylene, benzene, xylenes to finished end-products like plastics, rubbers, fibres, detergents, pesticides, dyes etc. These may be classified as (a) first generation, (b) second generation and (c) third generation petrochemicals.

First generation petrochemicals are chemicals directly available from basic inputs such as petroleum crude oil or natural gas, either by fractionation, isomerization, cracking etc. These can also be derived from coal gasification and bio mass. These generally represent the basic petrochemicals, which are the building blocks for various chemical syntheses. Examples of this class of chemicals are methane, ethane, propane, ethylene, propylene, toluene, xylenes etc.

Second generation petrochemicals are the derivatives of the first-generation petrochemicals. Example of such products are styrene (derived from benzene and ethylene), dimethyl terephthalate or terephthalic acid (derived from p-xylene), acrylonitrile (derived from propylene), ethylene glycol (derived from ethylene), vinyl chloride monomer (derived from acetylene or ethylene) etc. Second generation petrochemicals constitute the intermediate chemicals which serve as the raw materials for consumer industries like plastics, rubbers, fibres, dyes, detergents etc.

Third Generation Petrochemicals are the consumer commodities derived generally from second generation petrochemicals and represent the most important commercial products such as plastics, rubbers, fibres, detergents etc. Examples are polystyrene (from vinyl chloride monomer), DDT from (chlorobenzene), azo dyes (from styrene), Polyvinyl chloride (from aniline) etc. However, some of the products may be directly synthesized from first generation petrochemicals. Polybutadiene rubber, for instance, is obtained by polymerizing butadiene. Since most of the plastics or rubbers are derived from second generation petrochemicals, polybutadiene rubber is regarded as a third-generation petrochemical. (# Dr. G.N.Sarkar, *Advanced Petrochemicals, First Edition, Khanna Publishers, New Delhi*)

1.13 Chemical sector is predominantly based on feedstock derived from crude oil, natural gas, salt and minerals. Naphtha (used for production of Urea, Aromatics and Olefins), Heavy Gas oil (propylene and ethylene) and Kerosene (Linear Alkyl Benzene) are derived from crude oil. Steam cracking/ Catalytic Reforming of low and high aromatic naphtha in oil refineries provide Olefins (Ethylene, Propylene and Butadiene) and Aromatics (benzene, toluene and xylenes). Natural gas contains Methane (CH₄), Ethane (C₂H₆), Propane (C₃H₈) and Butane (C₄H₁₀). Rich natural gas, which contains C₂ and C₃ in extractable quantity, is used in producing Ethylene and Propylene. Methane is converted into synthesis gas. Synthesis gas is a mixture of carbon monoxide & hydrogen which is used to make ammonia & methanol. Ammonia is used to make Urea and Methanol is used to make acetic acid and derivatives. Consumption of naphtha in Petrochemical sector has decreased from 10874 thousand tons in the FY 2019-20 to 10424 thousand ton in the FY 2023-24. The consumption of natural gas for Petrochemical sector has decreased from 3569 Million Standard Cubic Metres (MMSCM) to 2667 MMSCM during the same period. (Reference: Table- 42 of Section-VII).

1.14 Olefins and Fibre Intermediates (Acrylonitrile, Caprolactam, Mono Ethylene Glycol, Purified Terephthalic Acid, and Dimethyl Terephthalate) form the basis of the petrochemical industries. Olefins and Aromatics are used in producing Fibre Intermediates. Salt is the feed stock for the Chlor-alkali chemical industry, just as crude oil and Natural Gas for the petrochemical industry. Salt, Aromatics, Minerals (Limestone, Bauxite ore (Aluminium), Rock Phosphate, Sulphur, Iron ore, Indium ore (Tin), Chromite ore, Mica, Silica, Manganese ore, etc.) and Basic metals (Copper, Zinc, Titanium, Aluminium, Iron, Chromium, Tin, Nickel, etc.) form the basis of chemical industries producing Chlor-Alkali, Organic Chemicals, Inorganic Chemicals, Pesticides and Dyes & Pigments. Dyes are organic compounds and are mainly based on Benzene, Toluene, Naphthalene (from petroleum fractions and coke oven batteries of steel plants), Anthracene and Cyanuric Chloride. Pesticides are mainly based on Benzene, Naphthalene, Phosphorous (produced from phosphate rock) and Sulphur. Pharmaceuticals are mainly based on Benzene, Toluene and Xylene.

1.15 Innovations in additives, alloys, blends, compounds, composites and high grade reinforcement materials such as glass, nano-clays, carbon nano-tubes and carbon fibres require attention for technology development. New developments in the field of bio and photodegradable plastics, are also taking place all over the world. The chemical and petrochemical industries face the challenge to operate in an environmentally acceptable manner. Chemicals are globally tradable and unless chemicals produced in India are cost effective, these cannot contribute usefully to the Nation's economy. With an eye on emerging usages, research and development efforts may focus on the need to modernize and upgrade the existing manufacturing processes, improve the quality of existing products and make them safe for environment and human health.

1.16 According to the Annual Survey of Industries (ASI) 2022-23 (factory sector), 10.58 lakh persons were engaged in Chemicals and Chemical Products (Industry Division 20, NIC 2008), in organised sector in medium and large-scale industries, whereas 1.85 crore persons engaged in all industries during FY 2022-23.

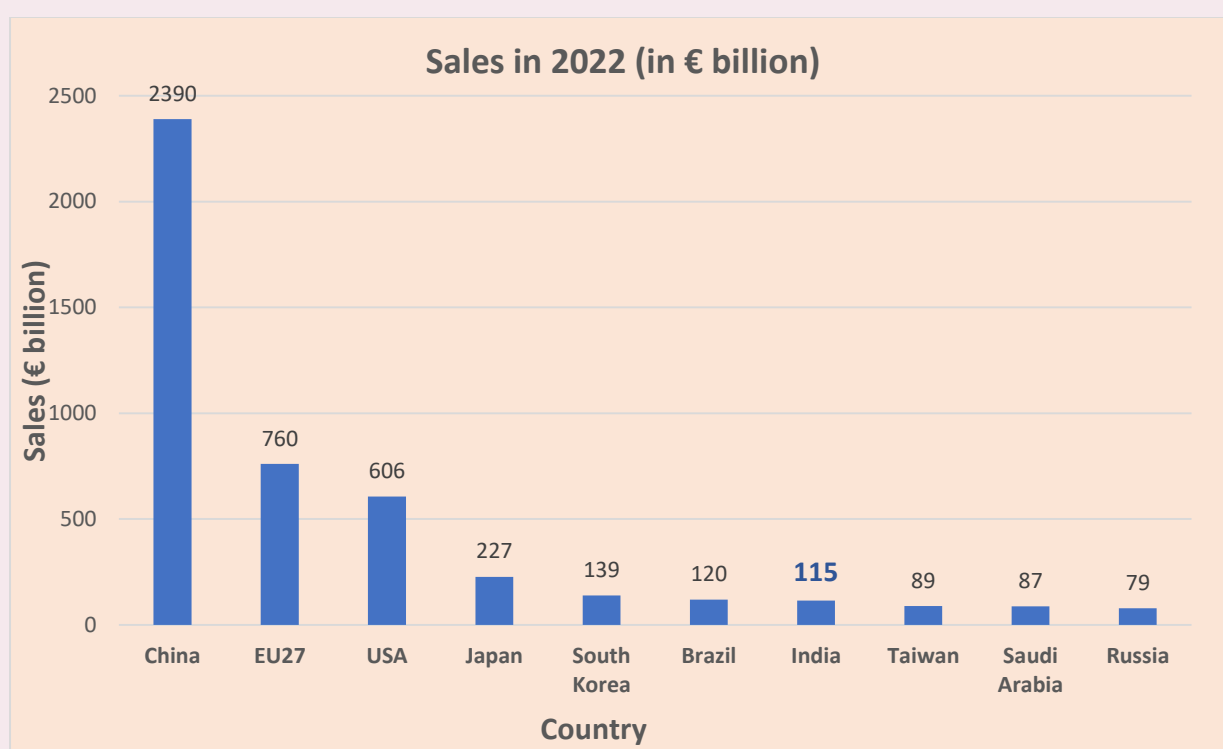
Chapter 2

Chapter 2

Global Scenario

2.1 As per the European Chemical Industry Council (CEFIC) Report 2023, the world chemicals (excluding pharmaceuticals) sales in 2022 are valued at €5,434 billion. India ranks 4th in Asia and 7th in world with chemicals sales valued at €115 billion in 2022. India's Capital spending in World Chemicals (excluding pharmaceuticals) is valued at €5.5 billion in 2022, as compared to €4.4 billion in 2012. India's R&I spending in the chemicals industry is valued at €1.8 billion in 2022, as compared to €1.1 billion in 2012. Top ten countries in World Chemical sales during 2022 are as under:

Graph 2.1



Source: Cefic-Facts and Figures-2023

2.2 As per UN Comtrade Database for 2023, India ranks 11th in the world exports of chemicals (excluding pharmaceutical products) and ranks 4th in the world imports of chemicals (excluding pharmaceutical products). India's exports of chemicals (excluding pharmaceutical products) was 43.20 US\$ billion in 2023, which is 2.4% share of World exports of chemicals (excluding pharmaceutical products). India's imports of chemicals (excluding pharmaceutical products) was 85.41 US\$ billion in 2023, which is 4.6% share of World imports of chemicals (excluding pharmaceutical products). (Reference: Table 32 of section III)

2.3 The top five Chemical Products (in terms of value) exported to different countries in the FY 2023-24 were Other Herbicides-Anti Sprouting Products (₹12,002/- Cr.), Other Insecticides (₹9,214 /- Cr.), Other Fungicide Nes (₹7,448/- Cr.), Pigment Emulsion (₹5,831/- Cr.), and Reactive Dyes (₹4,634/- Cr.). Other Herbicides-anti Sprouting Products mainly exported to U S A, Brazil, Argentina, France and China P RP; Other Insecticides exported to Brazil, Bangladesh PR, U S A, Vietnam Soc Rep and Nigeria; Other Fungicide NES exported Brazil, Bangladesh PR, U S A, Colombia and U Arab Emts; Pigment Emulsion exported to U S A, China P RP, Netherland, Vietnam Soc Rep and Brazil; and Reactive Dyes exported Bangladesh PR, Turkey, Brazil, Indonesia and Honduras. (Reference: Table 16 and Table 19 of section III)

2.4 During FY 2023-24, top five Chemical products (in terms of value) imported from different countries were Methanol (₹ 7,431/- Cr), Acetic Acid (₹ 4,177/- Cr), Other Insecticides (₹ 3,795/- Cr), Soda Ash (₹ 2,520/- Cr) and Other Fungicide Nes (₹ 2,107/- Cr). Methanol mainly imported from Oman, Saudi Arab, Iran, Qatar and Baharain IS; Acetic Acid from China P RP, Malaysia, Singapore, Taiwan and Saudi Arab; Other Insecticides from China P RP, Israel, Netherland, Japan and U S A; Soda Ash imported from Turkey, U S A, Russia, Kenya and U Arab Emts; Other Fungicide Nes imported from China P RP, Thailand, Netherland, U K and Belgium. (Reference: Table 17 and Table 20 of section III)

2.5 Export of top five Petrochemical Products (in terms of value) to different countries in the FY 2023-24 were Benzene (₹ 10,931/- Cr.), Polyester Filament Yarn (₹ 5,723/- Cr.), Polypropylene (Inc. Co-Polymer) (₹ 3,246/- Cr.), Paraxylene (₹ 2,152 /- Cr.) and Polyester Staple Fibre (₹ 1,857/- Cr.). Benzene was mainly exported to Saudi Arab, Kuwait, Taiwan, China P RP and U S A; Polyester Filament Yarn exported to Turkey, Brazil, Morocco, U S A and Egypt A RP; Polypropylene (Inc. Co-Polymer) was exported to Nepal, Turkey, Vietnam Soc Rep, Bangladesh PR and China P RP; Paraxylene was exported to Malaysia, China P RP, Indonesia, Portugal and Brazil; and Polyester Staple Fibre was exported to U S A, Nepal, Turkey, Belgium and Egypt A RP. (Reference: Table 24 and Table 27 of section III)

2.6 Top five Petrochemical products (in terms of value) imported from different countries in the FY 2023-24 were High Density Polythylene (₹ 18,830/- Cr.), Polypropylene (Inc. Co-Polymer) (₹ 15,879/- Cr.), Purified Terephthalic Acid (₹ 10,945/- Cr.), Styrene (₹ 9,316/- Cr.) and Paraxylene (₹ 7,625/- Cr.). High Density Polythylene

mainly imported from U Arab Emts, Saudi Arab, U S A, Oman and Qatar; Polypropylene (Inc. Co-Polymer) imported from U Arab Emts, Saudi Arab, Singapore, Thailand and China P RP; Purified Terephthalic Acid mainly imported from China P RP, Taiwan, Thailand, Korea RP and Indonesia; Styrene imported from Kuwait, Singapore, Saudi Arab, Korea RP and Taiwan; and Paraxylene imported from Japan, Singapore, Kuwait, Oman and Brunei. (Reference: Table 25 and Table 28 of section III)

Chapter 3

Chapter 3

Important Economic Indicators

3.1 According to the National Accounts Statistics, brought out by the Central Statistics Office (CSO), Chemical and Chemical products sector, excluding pharmaceuticals (Industry Division 20 of NIC 2008), accounted for 1.4% of the GVA for All Economic Activity in the FY 2022-23. The share of Gross Value Added (GVA) of Chemicals in the Manufacturing Sector in the FY 2022-23 is about 9.8%. GVA of Chemical Sector has grown with CAGR of 9.05% from the FY 2017-18 to FY 2022-23. The average Indices of Industrial Production (IIP) for the Chemical and Chemical products (Industry Division 20 of NIC 2008) for the FY 2023-24 stood at 127.4, which is 1.5% less as compared to the previous year. The size of the Indian Chemical industry, excluding Pharmaceuticals (Industry Division 20 of NIC 2008), in terms of Value of Output in the FY 2022-23 was Rs. 15,76,459/- cores and it was 8.5% of Value of Output of Manufacturing Sector. The size of Chemical industry, including Pharmaceuticals (i.e. Industry Division 20 and 21 of NIC 2008), in terms of Value of Output in the FY 2022-23 was Rs. 22,19,310/- crores and it was 12.03% of the Total Value of Output of Manufacturing sector. During last six years, i.e. within FY 2017-18 to FY 2022-23, Compounded Annual Growth Rate (CAGR) in output of Chemical Industry excluding Pharmaceuticals Industry (i.e. Industry Division 20) was 16.4%, which was 15.8% for Chemical Industry including Pharmaceutical Industry {i.e. Industry Division 20 & 21}. Growth in value of output for Manufacturing Sector during the same period was 13.1%.

3.2 The exports and imports data of FY 2023-24 shows that in the Chemical Sector, comprising of chapters 28, 29, 30, 31, 32, 38, 39, 4002, 54 and 55 of HS code, India was Net Importer in all categories except of four categories, namely, Pharmaceuticals Products (Chapter 30 HS code), Man-made staple fibres (Chapter 55 HS code), Man-Made Filaments (Chapter 54 HS code) and Tanning or Dyeing (Chapter 32 HS code). Pharmaceuticals products accounted Rs.1,61,649/- crore, Man-made staple fibres accounted Rs.6,109/- crore, Man-Made Filaments accounted Rs.865/- crore and Tanning or Dyeing accounted Rs.2,881/- crore in Net Export. (Reference: Table 12A of section III)

3.3 As per Annual Survey of Industries (Factory Sector: 2022-23), top seven States, namely, Gujarat (30.6%), Maharashtra (17.8%), Andhra Pradesh (5.4%), Tamil Nadu (4.7%), Uttar Pradesh (4.2%), Karnataka (4.0%) and Uttarakhand (3.9%), contributed around 70.58% in the Gross Value Added (GVA) for the Chemical & Chemical products

Sector (Industry Division 20 of NIC 2008) and seven States, namely, Gujarat (33.36%), Maharashtra (15.65%), Uttar Pradesh (6.8%), Tamil Nadu (4.8%), Rajasthan (4.5%), Andhra Pradesh (4.4%) and West Bengal (4.2%), contributed around 73.65% in the value of output. . (Reference: Table 50 of Section VII)

3.4 The exports of chemicals & petrochemicals (excluding pharmaceutical products and fertilizers) has increased from Rs. 1,90,193/- crores in the FY 2016-17 to Rs. 3,73,285/-crore in the FY 2023-24. The percentage share of the exports of chemicals & petrochemicals (excluding pharmaceutical products and fertilizers) in the total national exports slightly increased from 10.28% to 10.31% during the same period. (Reference: Table 12 of Section III)

At the product level, the following products accounted more than Rs. One Thousand crores in the exports during 2023-24 (Reference: Table 16 & 24 of Section III):

Table: 3.1

Product (Chemical)	Export (Rs. Crore)	Product (Petro-Chemical)	Export (Rs. Crore)
Other herbicides-anti sprouting products	12,002	Benzene	10,931
Other insecticides	9,214	Polyester Filament Yarn	5,723
Other fungicide nes	7,448	Polypropylene (Inc. Co-Polymer)	3,246
Pigment emulsion	5,831	Paraxylene	2,152
Reactive dyes	4,634	Polyester Staple Fibre	1,857
Carbon black	3,422	High Density Polyethylene	1,733
Azo Dyes	1,963	Polyester Chips/Pet Chips	1,175
Caustic Soda	1,696	Butadiene	1,020
Food Colours	1,501	Polytetrafluoroethylene(PTFE)	1,016
Menthol	1,429		
Soda Ash	1,031		

Source: DCPC

3.5 The imports of Chemicals & Petrochemicals (excluding Pharmaceutical products and fertilizers) has increased from Rs. 2,69,189/- crores in the FY 2016-17 to Rs. 6,00,378/- crores in the FY 2023-24. The percentage share of the imports of Chemicals & Petrochemicals (excluding Pharmaceutical products and fertilizers) in the total national imports increased from 10.44% to 10.69% during the same period. (Reference: Table 11 of Section III)

At the product level, the following products accounted for more than Rs. One Thousand crores in the imports in 2023-24 (Reference: Table 17 & 25 of Section III):

Table: 3.2

Product (Chemical)	Import (Rs. Crore)	Product (Petro-Chemical)	Import (Rs. Crore)
Methanol	7,431	High Density Polythylene	18,830
Acetic acid	4,177	Polypropylene (Inc. Co-Polymer)	15,879
Other insecticides	3,795	Purified terephthalic acid	10,945
Soda Ash	2,520	Styrene	9,316
Other Fungicide Nes	2,107	Paraxylene	7,625
Phenol	1,988	Polyester Filament Yarn	5,087
Other Herbicides-Anti Sprouting Products	1,968	Polycarbonate	5,069
Aniline	1,822	Toluene	5,031
Carbon Black	1710	Poly Vinyl Chloride	4,713
Menthol	1091	Mono Ehylene Glycol	4,627
		Linear Low Density Polythylene	3,581
		Linear Alkyl Benzene	3,370
		Ethyl Vinyl Acetate	3,179
		Low Density Polyethylene	3,070
		Vinyl Chloride Monomer	3,045
		Styrene Butadiene Rubber	2,678
		Acrylonitrile	1,830
		Abs Resin	1,764
		Poly Butadiene Rubber	1,731
		Polyester Chips/Pet Chips	1,678
		Ethylene Dichloride	1,641
		Vinyl Actate Monomer	1,534
		Polyestyrene	1,480
		Butyl rubber	1,346
		Ethyl propylene dimers	1,212
		Unsaturated Polyster Resin	1,076
		Polyacetal resin	1,071

Source: DCPC

3.6 The net imports of Chemicals & Petrochemicals (excluding Pharmaceutical products and fertilizers) has increased from Rs. 78,995/- crore in 2016-17 to Rs. 2,27,093/-crore in 2023-24. The percentage share of the net imports of Chemicals & Petrochemicals (excluding Pharmaceutical products and fertilizers) in the total national net imports increased from 10.8% to 11.4% during the same period. At the product level,

the following products accounted more than Rupees One Thousand crores in the net imports in 2023-24. (Reference: Table 12(a), 18 & 26)

Table: 3.3

Product (Chemical)	Net Import (Rs. Crore)	Product (Petro-Chemical)	Net Import (Rs. Crore)
Methanol	7,254	High Density Polythylene	17,097
Acetic acid	4,072	Polypropylene (Inc. Co-Polymer)	12,633
Aniline	1,821	Purified Terephthalic Acid	10,902
Phenol	1,708	Styrene	9,215
Soda Ash	1,489	Paraxylene	5,472
		Polycarbonate	5,021
		Toluene	4,762
		Poly Vinyl Chloride	4,696
		Mono Ethylene Glycol	4,332
		Linear Alkyl Benzene	3,332
		Linear Low Density Polythylene	3,150
		Ethyl Vinyl Acetate	3,149
		Vinyl Chloride Monomer	3,045
		Low Density Polyethylene	2,255
		Styrene Butadiene Rubber	2,193
		Acrylonitrile	1,788
		Abs Resin	1,755
		Poly Butadiene Rubber	1,669
		Ethylene Dichloride	1,640
		Vinyl Acetate Monomer	1,472
		Ethyl Propylene Dimers	1,188
		Polyacetal Resin	1,024
		Butyl Rubber	1,013

Source: DCPC

The following products accounted more than Rs. One Thousand crore in the total net exports in 2023-24.

Table: 3.4

Product (Chemical)	Net Export (Rs. Crore)	Product (Petro-Chemical)	Net Export (Rs. Crore)
Other Herbicides-Anti Sprouting Products	10,034	Benzene	10,904
Other Insecticides	5,419	Polyester Staple Fibre	1,311
Other Fungicides	5,341	Butadiene	1,019
Pigment Emulsion	5,118		
Reactive Dyes	4,373		
Azo Dyes	1,881		

Carbon Black	1,712	
Food Colours	1,407	

Source: DCPC

3.7 Chemical Sector (including Pharmaceutical) in India i.e. 99.5% GVA of Chemical Sector (including Pharmaceutical) comes from the organized Sector. The estimates of the Total Output (Factory Sector) of at 4-digit Industry class in the Chemicals and Chemical Products (Division 20-NIC 2008) from the FY 2021-23 and FY 2022-23 are given in the table below:

Class	Description	Total Output (Rs. Crore)	
		2021-22	2022-23
2011	Manufacture of basic chemicals	288868	311035
2012	Manufacture of fertilizers and nitrogen compounds	182647	263683
2013	Manufacture of plastics and synthetic rubber in primary forms	169930	194539
2021	Manufacture of pesticides and other agrochemical products	85924	93970
2022	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	71956	104134
2023	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations	114937	127690
2029	Manufacture of other chemical products n.e.c.	103610	137397
2030	Manufacture of man-made fibres	80035	83154
Total		1097907	1315603

Source: Annual Survey of Industries, 2021-22 and 2022-23 (Factory sector), Ministry of Statistics & Programme Implementation.

Chapter 4

4.1 Harmonized System:

Harmonized System is an internationally standardized system of names and numbers for classifying traded products. It has been developed and maintained by World Customs Organization (WCO). It is used by customs authorities around the world to identify products when assessing duties and taxes and for gathering statistics.

The HS is organized into 21 Sections, which are subdivided into 96 Chapters (Chapters 1 to 97 with Chapter 77 reserved for potential future use by the HS). The 96 HS Chapters are further subdivided into 1,228 headings and 5,612 subheadings in the current 2022 edition of the HS.

The HS code consists of 6-digits. The first two digits designate the Chapter wherein headings and subheadings appear. The second two digits designate the position of the heading in the Chapter

Eg: HS code 1006.30 indicates Chapter 10 (Cereals), heading 10.06 (Rice), and subheading 1006.30 (Semi-milled or wholly milled rice, whether or not polished or glazed)

Most of countries use an 8-digit or 10-digit classification system, with the first 6-digit adopting the Harmonized System developed by the WCO and the last 2 or 4 digits representing a further breakdown in commodity classification to meet domestic needs.

4.2 Indian Trade Clarification based on Harmonized System (ITC-HS) 2017

Indian Trade Classification (Harmonized System), 2017 was compiled and notified by the Directorate General of Foreign Trade, Ministry of Commerce and Industry, Government of India in January 2017. ITC-HS codes are divided into two schedules. ITC (HS) Import Schedule I describe the rules and guidelines related to import policies. Schedule II describes the rules and regulation related to export policies. Schedule I of the ITC-HS code is divided into 21 sections and each section is further divided into chapters. The total number of chapters in the schedule I is 98. The chapters are further divided into sub- heading under which different HS codes are mentioned. Export Policy Schedule II of the ITC-HS code contains 97 chapters giving all the details about the guidelines related to the export policies.

The Chapters dealing with Chemicals and Petrochemical products are falling under Section VI, VII & XI as depicted below:

Chapter	Description	Section
Chapter 28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare- earth metals, of radioactive elements or of; isotopes	SECTION VI
Chapter 29	Organic chemicals	
Chapter 38	Miscellaneous chemical products	
Chapter 39	Plastics and articles thereof	SECTION VII
Chapter 40	Rubber and articles thereof	
EXIM Code 4002	Synthetic rubber and factice derived from oils, in primary Forms or in plates, sheets or strip; mixtures of any product of heading 4001 with any product of this heading, in primary forms or in plates, sheets or strip	
Chapter 54	Man-made filaments	SECTION XI
Chapter 55	Man-made staple Fibre	

Illustration of 8-digit Product Code:

Chapter	Exim Code	Item Description
28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of; isotopes	
	2801	Fluorine, Chlorine, Bromine and Iodine
	28011000	Chlorine
39	Plastics and articles thereof	
	3902	Polymers Of Propylene or Of Other Olefins, In Primary Forms
	39021000	Polypropylene

Source: Directorate General Foreign trade (DGFT), Ministry of Commerce and Industry, Government of India (<https://www.dgft.gov.in/CP/?opt=itchs-import-export>)

4.3 Group-wise bifurcation of HS code of 2334 Chemicals and Petrochemicals product

Department of Chemicals and Petrochemicals deals with the import and export of Chemicals that falls in the chapter 28,29,30,31,32,38,39,4002,54 and 55 of HS Code. There are total 2334 products that comes under these chapters which are currently imported in the country. Of these 2334 products there are certain product categories that fall under the purview of other Departments too. This identification of the products will help in avoiding duplicity at the time of monitoring imports of the products by the concerned departments.

The formulation of group wise bifurcation of available HS code list prepared by DCPC for chemicals and petrochemicals for 2334 products as under:

List of Abbreviations for Chemicals				
S. No	Abbreviations		Description	Nos.
	C		Chemicals	
1		AC	Alkali Chemicals	10
2		IC	In-Organic Chemicals	271
3		OC	Organic Chemicals	473
4		PI	Pesticides and Insecticides	43
5		DP	Dyes and Pigments	304
6		MISC	Miscellaneous	167
		Sub-Total		1268
		NA	Not Applicable	593
List of Abbreviations for Petro-Chemicals				
S. No	Abbreviations		Description	Nos.
	PC		Petro-Chemicals	
1		SF	Synthetic Fibres	38
2		P	Polymers	221
3		SR	Synthetic Rubber (Elastomers)	20
4		SDI	Synthetic Detergent Intermediates	3
5		PP	Performance Plastics	33
6		FI	Fibre Intermediates	5
7		O	Olefins	3
8		A	Aromatics	6
9		OP	Other Petro-based Chemicals	144
		Sub-Total		473

		Grand Total	2334
--	--	--------------------	-------------

The Pharmaceutical Department stated that 191 out of the 2334 Chemicals and Petrochemicals products listed by HS codes are related to pharmaceuticals according to Pharma Principal Commodities (PCGs) in the BD/DI HSN codes

List of Chemical & Petrochemical products (HS- Code Wise) related to Pharma as per PCGs of BD/DI list of HSN code:

S. No	Abbreviations	Description	Nos.	Remarks
1.	C	Chemicals		All these HSN codes are also related to Pharma-Principal commodities group (PCGs) of Bulk Drug & Drug Intermediates list of 260 HSN codes.
2.	OC	Organic Chemicals	38	
3.	PI	Pesticides and Insecticides	1	
4.	DP	Dyes and Pigments	8	
5.	MISC	Miscellaneous	47	
6.	NA	Not Applicable	97	
	Total		191	

Details of 2334 Chemicals and Petrochemicals products is in attached in **Annexure**.

4.4 CAS Registry Number:

Chemical Abstract Service (CAS) is a division of American Chemical Society. It is the only organization in the world whose objective is to find, collect and organize all publicly disclosed chemical substance information.

The registry maintained by CAS is an authoritative collection of disclosed chemical substance information. It identifies more than 182 million unique organic and inorganic substances and 68 million protein and DNA sequences, plus additional information about each substance. It is updated with around 15,000 additional new substances daily

A CAS Registry Number has no inherent meaning, but is assigned in sequential, increasing order when the substance is identified by CAS scientists for inclusion in the CAS REGISTRY database.

A CAS RN is separated by hyphens into three parts, the first consisting from two up to seven digits, the second consisting of two digits, and the third consisting of a single

digit serving as a check digit. This format gives CAS a maximum capacity of 1,000,000,000 unique numbers. The check digit is found by taking the last digit times 1, the preceding digit times 2, the preceding digit times 3 etc., adding all these up and computing the sum modulo 10.

For example, the CAS number of water is 7732-18-5: the checksum 5 is calculated as $(8 \times 1 + 1 \times 2 + 2 \times 3 + 3 \times 4 + 7 \times 5 + 7 \times 6) = 105$; $105 \bmod 10 = 5$.

4.5 UN Codes:

UN Numbers or UN IDS are four-digit numbers that Identify hazardous substances, and articles such as explosives, flammable Liquids, toxic substances etc.

The UN numbers range from UN0001 to about UN3600 and are assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.

For example, the UN Code for Nitrogen (compressed) is UN 1066

4.6 International Standard Industrial Classification

The International Standard Industrial Classification (ISIC) of All Economic Activities (ISIC) is the international reference classification of productive activities. Its main purpose is to provide a set of activity categories that can be utilized for the collection and reporting of statistics according to such activities.

Wide use has been made of ISIC, both nationally and internationally, in classifying data according to kind of economic activity in the fields of economic and social statistics, such as for statistics on national accounts, demography of enterprises, employment and others. In addition, ISIC is increasingly used for non-statistical purposes.

4.7 National Industrial Classification (NIC) - A Digest

The Central Statistics Office (CSO), Ministry of Statistics & Programme Implementation being nodal Statistical Authority in the Country is vested with the responsibility of setting up Standards for collection, compilation and dissemination of Statistical data. The Official statistics is required to be collected and presented according to classification designed to facilitate its use for National Economic Policies and conform to International comparison. The need for comparability of Statistics available from various sources, on different aspects of the economy and usability of

such data for economic analysis necessitated the need of standardization of a system of classification.

CSO being responsible for coordination of statistical activities in the country and with a view to evolve and maintain statistical standards, initiated task of bringing out Standard Industrial Classification as early as in 1960 and evolved a Standard Industrial Classification (SIC) in 1962. To take care of emerging changes in organizations and structure of Industries, the need for revision of this document was felt from time to time. With this objective, the CSO revised SIC 1962 in 1970 (NIC-70), NIC-1970 in 1987 (NIC-87) and NIC-87 in 1998 (NIC-98). It is during 1998 that 4-digit system of International Standard Industrial Classification (ISIC- 3) was followed and these 4 digits were extended up to 5 digits based on national needs. Consequent upon release of United Nations International Standard Industrial Classification (ISIC) – 2002 Rev. 3.1, NIC-1998 was updated to bring out NIC–2004. After adoption of ISIC Revision-4 by the United Nations Statistical Commission (UNSC) in the year 2008, an expert committee under the chairmanship of DG, CSO deliberated on the issues and approved the draft NIC-2008 incorporating revision in NIC-2004 consistent with ISIC revision 4.

Basic features of NIC-2008

All the activities are grouped into several “activity groups” or “tabulation categories” in a hierarchical manner. Activities are first grouped into ‘section’ alphabetically coded from A through U, every section is divided into ‘division’ with 2-digit numeric code, every division into ‘group’ with 3-digit numeric code, every group into ‘class’ with 4-digit numeric code and every 4-digit class into 5-digit ‘sub-class’. The structure is illustrated below.

Level		Description
Section		Manufacturing
Division 20		Manufacture of Chemicals and Chemical Products
Group	201	Manufacture of Basic Chemicals, Fertilizer and Nitrogen Compounds, Plastics and Synthetic Rubber in Primary Forms
	203	Manufacture of man-made Fibre
Class	2011	Manufacture of Basic Chemicals
	2030	Manufacture of man-made Fibre

Sub-Class	20111	Manufacture of liquefied or compressed inorganic industrial or medical gases (elemental gases, liquid or compressed air, refrigerant gases, mixed industrial gases etc.)
	20301	Manufacture of synthetic or artificial filament

The structure of NIC-2008 is identical to the structure of ISIC Revision up to 4-digit level 'class'. Classes were then divided into 5-digit 'sub classes' according to national requirements.

Salient features of NIC-2008

- The sections A to Q of NIC-2004 have been replaced by sections A to U in respect of NIC-2008. NIC-2008 has 21 sections, 88 divisions, 238 groups, 403 classes and 1304 sub-classes.
- NIC-2008 is comparable with ISIC Rev.4 till 4-digit classes in totality.
- The concept of shadow classes introduced in NIC-2004 has been done away with in NIC- 2008 as the emphasis has been given on activity rather than type of operation and scale of operation.
- In NIC-2008 some of the 5-digit sub-classes of NIC-2004 have been made separate 4- digit classes e.g. 'Growing of Sugarcane (01115)', 'Growing of tobacco (01114)', 'Growing of fibre crops (01113)' 'Growing of flowers (01122)'.
- Repair and installation of machinery and equipment has been classified as separate division (Division-33) in NIC-2008.
- Repair of Personal Household goods (5260 of NIC-2004) has been removed from Section-G (wholesale and retail trade; repair of motor vehicles and motor cycles) and now included in Section-S (other service activities).
- Publishing activity which was included in division-22 of manufacturing section in NIC-2004 is now included in division-58 (publishing activities) of NIC-2008 under Section-J (information and communication).
- Activity 'water supply' under division-41 (Electricity, Gas and Water Supply) of NIC-2004 is now included in Section-E (water supply; sewerage, waste management and remediation activities).
- Explanatory notes of ISIC Rev.4 at 1/2/3-digit level have been incorporated in NIC-2008 as Annexure for better understanding of the revised classification.

- Under 4-digit classes of NIC-2008, inclusion and exclusion statements have been included in the detailed structure itself to remove ambiguity in the scope of classification and to facilitate the classification of economic activity distinctly.

Division 20 and 21 of NIC-2008 relates to “Chemical and Chemical Products” and “Pharmaceutical, Medicinal and botanical products” respectively.

Source:

Website of Ministry of Statistics and Programme Implementation, Government of India

4.8 Important Definitions of Economic System

Gross Domestic Product (GDP):

The total market value of all final goods and services produced during a given time period within a nation’s domestic borders.

There are three primary approaches to calculating GDP:

1) Production Approach (GDP by Production):

This approach calculates GDP by summing up the value-added at each stage of production. It considers the value of all goods and services produced in various industries and sectors of the economy. The formula for GDP by production is:

$$\text{GDP} = \text{Value of Output} - \text{Value of Intermediate Consumption}$$

2) Expenditure Approach (GDP by Expenditure):

This approach calculates GDP by measuring the total spending on goods and services within the economy. It is represented by the equation:

$$\text{GDP} = C + I + G + (X - M)$$

C represents consumer spending.

I represent investment spending

(business investment in equipment, structures, etc.).

G represents government spending.

X represents exports of goods and services.

M represents imports of goods and services.

3) Income Approach (GDP by Income):

This approach calculates GDP by summing all the income generated within an economy. It includes wages, rents, interest, and profits. The formula for GDP by income is:

GDP = Compensation of Employees + Gross Operating Surplus + Gross Mixed Income + Taxes on Production and Imports - Subsidies on Production and Imports

There are 2 types of GDP,

Nominal GDP:

Nominal GDP measures the total market value of all finished good and service produced by a country at their current market price in single year. It includes all the changes in the prices of finished goods and services that took place in one year due to inflation or deflection.

Real GDP:

Real GDP is also known as inflation adjusted GDP, measure the value of finished goods and services at constant base year price. Real GDP considered as a true indicator of country economic growth. Real GDP includes change in quantity but not price.

GDP deflator:

The GDP price deflator measures the changes in prices for all goods and services produced in an economy. GDP deflator helps economists compare the level of real economic activity from one year to another. The formula for GDP deflator is:

$$GDP\ Deflator = \frac{Nominal\ GDP}{Real\ GDP} \times 100$$

GDP per capita:

Gross Domestic Product (GDP) per capita is a commonly used economic indicator that measures the average income or economic output per person in a given country or region. It is calculated by dividing a country's total GDP by its population. The formula for GDP per capita is:

$\text{GDP per capita} = \text{GDP} / \text{Population}$

Net domestic product (NDP):

The net domestic product (NDP) equals the gross domestic product (GDP) minus depreciation on a country's capital goods.

Net domestic product accounts for capital that has been consumed over the year in the form of housing, vehicle, or machinery deterioration

$\text{NDP} = \text{GDP} - \text{Depreciation}$

Depreciation is the decrease in the value of assets due to usage of machinery

Gross National product (GNP):

Gross national product is the total value of all final goods and services produced by country's citizens in given financial year, irrespective of their location. The formula for GNP is:

$\text{GNP} = \text{GDP} + \text{Net Factor Income from Abroad (NFIA)}$

Where, Net Factor income from Abroad(NFIA) = Income of Indian residence working in Abroad – Income of Foreigners working in country

Net National product (NNP):

Net National product (NNP) in economy is the GNP after deducting the loss due to the depreciation.

Gross value added (GVA):

Gross value added (GVA) is the measure of the value of goods and services produced in an area, industry or sector of an economy. "Gross value added is the value of output minus the value of intermediate consumption"

Relation between GDP & GVA:

The relationship between GVA and GDP is defined as:

$\text{GVA} = \text{GDP} + \text{subsidies on products} - \text{taxes on products}$

4.9 Statistics:

- Real GDP has been estimated to grow by 8.2% in FY 2023-24 as compared to the growth rate of 7.0% in FY 2022-23. Nominal GDP has witnessed a growth rate of 9.6% in FY 2023-24 over the growth rate of 14.2% in FY 2022-23
- Real GVA and Real GDP have been estimated to grow by 6.3% and 7.8% respectively in Q4 of FY 2023-24. Growth rates in Nominal GVA and Nominal GDP for Q4 of FY 2023-24 have been estimated at 8.0% and 9.9% respectively.
- Real GVA has grown by 7.2% in 2023-24 over 6.7% in 2022-23. This GVA growth has been mainly due to significant growth of 9.9% in manufacturing sector in 2023-24 over -2.2% in 2022-23.
- Real GVA is estimated at ₹158.74 lakh crore in the year 2023-24, against the FRE for the year 2022-23 of ₹148.05 lakh crore, registering a growth rate of 7.2% as compared to 6.7% in 2022- 23.
- Real GDP or GDP at Constant Prices is estimated to attain a level of ₹173.82 lakh crore in the year 2023-24, against the First Revised Estimates (FRE) of GDP for the year 2022-23 of ₹160.71 lakh crore.
- Nominal GDP or GDP at Current Prices is estimated to attain a level of ₹295.36 lakh crore in the year 2023-24, against ₹269.50 lakh crore in 2022-23, showing a growth rate of 9.6%.
- Nominal GVA is estimated to attain a level of ₹267.62 lakh crore during FY 2023-24, against ₹246.59 lakh crore in 2022-23, showing a growth rate of 8.5%.

Source: https://mospi.gov.in/sites/default/files/press_release/PressNoteGDP31052024.pdf

Chapter 5

Chapter 5

Indices released by Government of India

Indices are important economic indicators to demonstrate the relative change in the parameters over a specified period of time. Some of the important indices compiled and released by different Departments under the Government of India along with their inception and uses in different sectors of economy are summarized below:

- A. Index of Industrial Production (IIP)
- B. Consumer Price Index (CPI)- Industrial Worker, Agricultural Labourer / Rural Labourer, Rural / Urban / Combined
- C. Wholesale Price Index (WPI)

5.1. Index of Industrial Production-(IIP)

5.1.1 The Central Statistics Office (CSO), Ministry of Statistics and Programme Implementation Compiles and brings out an index of Industrial Production. CSO revises the base year of the macroeconomic indicators, as a regular exercise, to capture structural changes in the economy and improve the quality and representativeness of the indices. In this direction, the base year of the all-India Index of Industrial Production (IIP) has also been revised from 2004-05 to 2011-12 to not only reflect the changes in the industrial sector but also to align it with the base year of other macroeconomic indicators like the Gross Domestic Product (GDP), Wholesale Price Index (WPI) etc.

5.1.2 IIP in the revised series is continued to represent the Mining, Manufacturing and Electricity sectors. The revised series uses the National Industrial Classification (NIC) 2008 for the purpose of classification of industrial production. 15 source agencies are providing production data for Index of Industrial Production (IIP) base year 2011-12.

Summary of Source Agencies of IIP in the new series with base year 2011-12.

Table 5.1

S. No	Source	Weights (%)
1	Department of Industrial Policy and Promotion (DIPP)	47.54
2	Indian Bureau of Mines	14.37
3	Ministry of Petroleum & Natural Gas	11.29
4	Joint Plant Committee	10.52
5	Central Electricity Authority	7.99
6	Department of Chemicals and Petrochemicals	2.54
7	Office of Textile Commissioner	1.94

8	Department of Fertilizers	1.06
9	Directorate Of Sugar and Vegetable Oils (for Edible Oils only)	0.97
10	Directorate Of Sugar and Vegetable Oils (for Sugar only)	0.76
11	Office of Coal Controller	0.49
12	Tea Board	0.29
13	Railway Board	0.13
14	Office of Jute Commissioner	0.07
15	Coffee Board	0.04
	GENERAL	100.00

5.1.3 Highlights of the changes in New Series of Index of Industrial Production are summarized below:

- a. The selection of items in the new series has been done at the 3-digit level of NIC for better representation as compared to selection at 2-digit level done in 2004-05 series.
- b. At the broad level, the new series has a total of 809 items occurring in the manufacturing sector in the item basket (405 item groups), where 149 new items like Steroids and hormonal preparations, Cement clinkers, Medical/ surgical accessories, pre-fabricated concrete blocks, refined Palm Oil have been added and 124 items such as Biaxially Oriented Polypropylene (BOPP) Films, Calculators, Colour TV picture tubes, Gutka have been deleted from the 2004-05 series in the manufacturing sector. The sectoral composition of the IIP is as follows:

Table: 5.2

Sector	Base year 2011-12		Base year 2004-05	
	Weights (%)	Item groups	Weights (%)	Item groups
Mining	14.373	1	14.157	1
Manufacturing	77.633	405	75.527	397
Electricity	7.994	1	10.316	1
Total	100	407	100	399

- c. To reflect the increasing significance of electricity generation from renewable sources, it was decided to include data on electricity generation figures from these sources in the new series. This inclusion was done from April, 2014 onwards as monthly data for electricity generation from renewable sources for earlier months were not available.
- d. For capital goods, data in the new series is captured in terms of 'work in progress' to better represent the growth of capital goods and to avoid reporting of production figures in bulk after the completion of production. Details on this methodology are available in the Report of the Working Group set up for the revision of base year, which may be accessed in the official website of Ministry of Statistics and Programme Implementation (www.mospi.gov.in).
- e. The number of source agencies reporting data for compilation of IIP in the new series is 14 as compared to 15 in its previous. This is on account of the fact that data on 'Iodised Salt' in the new series is being provided by the Department of Industrial Policy and Promotion (DIPP) as O/o Salt Commissioner was not in a position to supply Salt production data after abolition of Salt Cess Act, 1953 in Finance Bill 2016.
- f. In the Mining Sector the coverage was undergone a change on account of the MCDR Amendment Rules, 2016 resulting in 27 non-metallic minerals being designated as minor minerals and which were no longer monitored by Indian Bureau of Mines.

5.2. Consumer Price Index (CPI)

5.2.1 A Consumer Price Index (CPI) is designed to measure the changes over time in general level of retail prices of selected goods and services that households purchase for the purpose of consumption. Such changes affect the real purchasing power of consumer's income and their welfare. CPI numbers are widely used as macroeconomic indicator of inflation, and also as a tool by government and central banks for targeting inflation and monitoring price stability. CPI is also used as deflators in the National Accounts. Therefore, CPI is considered as one of the most important economic indicators.

5.2.2 Different types of CPIs, namely, CPI (IW), CPI (AL/RL), CPI (UNME) and CPI (R/U/C) compiled by different agencies of Government of India, are available for users

in our country. First three indices, including CPI (UNME), are specific to population segments. The price collection for CPI (UNME) was discontinued with effect from April 2008 and linked all India CPI (UNME) numbers were brought out from April 2008 to December 2010. The fourth one i.e. CPI (R/U/C) is for general population, sector-wise, to be explained in subsequent paragraphs.

5.2.3 Salient features of different types of CPIs:

Consumer Price Index for Industrial Workers - CPI (IW)

This index is compiled by the Labour Bureau, Ministry of Labour and Employment. The target population is working class family, defined as a family: (i) located within the centre for industrial worker, (ii) has at least one member working as manual worker in an establishment in any of the seven sectors of employment covered viz., factories, plantations, mining, ports and docks, public motor transport undertakings, electricity generating and distributing establishments, and railways; and (iii) derived 50 per cent or more of its income during the calendar month preceding the day of enquiry through any manual work.

The present series of CPI (IW) is on base 2016=100. The weighting diagrams for the purpose of compilation of index numbers had been derived on the basis of average monthly family expenditure of the working class obtained from the Working Class Family Income Expenditure Survey conducted during 1999-2000.

The CPI (IW) is released every month (on the last working day of succeeding month) for each of the selected 88 centres as well at all India level. It is mainly used for the determination of Dearness Allowance (DA) being paid to Central/State Government employees and also to the workers in the industrial sectors, besides fixation and revision of minimum wages in scheduled employments. It is also used in moving the base year poverty lines for urban areas to the subsequent years.

Consumer Price Index for Agricultural/ Rural Labourers - CPI (AL/RL)

These indices are compiled by the Labour Bureau, Ministry of Labour and Employment. The target populations are agricultural and rural labourers. A rural labour household is defined as one, which derives major income from manual employment (rural labour) during the last 365 days. From amongst the rural labour households, those households, which earn 50% or more of their total income from gainful employment as manual labour in agriculture during the last 365 days, are categorized as agricultural

labour households. Agricultural labour households form a major subset of rural labour households. A person is considered engaged in agricultural labour if he/she follows one or more of the agricultural occupations in the capacity of wage paid manual labourer, whether paid in cash or kind (excluding exchange labour) or both. A person who does manual work in return for wages in cash or kind or partly in cash and partly in kind (excluding exchange labour) is a wage paid manual labourer. Persons who are self-employed doing manual work are not treated as wage paid manual labourers. People living in rural areas and engaged in manual labour by working in agricultural and/or non-agricultural occupations in return for wages paid either in cash or kind (excluding exchange labour) or both, are considered as rural labourers. Thus, rural labourers include both agricultural and other labourers.

The present series of CPI (AL/RL) is on base 1986-87=100. Estimates of average consumer expenditure per household generated from the results of the NSS 38th round (1983), CES formed the source of weights for different items of goods and services, used in compilation of CPI (AL) and CPI (RL).

For both the current series of CPI (AL) and CPI (RL), the retail prices in respect of goods and services are collected on monthly basis, from fixed markets in 600 sample villages in 20 states by the field workers of the Field Operations Division (FOD) of the National Sample Survey Office (NSSO). The various items (12) of goods and services are categorized into four main groups namely, (i) Food, (ii) Fuel and Light, (iii) Clothing, Bedding and Footwear; and (iv) Miscellaneous. The items of goods and services are common for the state as a whole but the varieties of most of the items differ from village to village. The collection of retail prices is staggered over four weeks of a month with one-fourth of the sample covered every week.

The CPI (AL/RL) is released every month (20th or preceding working day of the following month) for each of the selected states as well at all India level. It is mainly used for the determination/ fixation and revision of minimum wages in agricultural sector. CPI (AL) is also used in moving the base year poverty lines for rural areas to the subsequent years.

Consumer Price Index for Rural, Urban and Combined - CPI (R/U/C)

The indices are compiled by the CSO on base 2010 = 100. The consumption patterns (weighting diagrams) for this series of CPI have been derived on the basis of

average monthly consumer expenditure of an urban/rural household obtained from the results of the 61st Round of CES conducted by the National Sample Survey Office during 2004-05.

5.3 Wholesale Price Index (WPI)

WPI is an important measure to monitor the dynamic movement of prices at the wholesale level. In a dynamic world, prices keep on changing. WPI is used as a deflator of various nominal macroeconomic variables including Gross Domestic Product (GDP). The WPI based inflation estimates also serve as an important determinant, in formulation of trade, fiscal and other economic policies by the Government. WPI is also used for the purpose of escalation clauses in the supply of raw materials, machinery and construction work. Business firms in search of effective methods for coping with changes in prices often employ price adjustment (escalation) clauses in long-term sales and purchase contracts. WPI is widely recognized among business people, economists, statisticians and accountants as a useful objective indexing tool in price adjustment clauses.

The base year of All-India WPI has been revised from 2004-05 to 2011-12 by the Office of Economic Advisor (OEA), Department of Industrial Policy and Promotion, Ministry of Commerce and Industry to align it with the base year of other macroeconomic indicators like the Gross Domestic Product (GDP) and Index of Industrial Production (IIP). The Wholesale Price Index (WPI) series in India has undergone six revisions in 1952-53, 1961-62, 1970-71, 1981-82, 1993- 94 and 2004-05 so far. The current series (base year 2011-12) is the seventh revision.

Features of WPI

- In the current series of WPI, prices used for compilation do not include indirect taxes in order to remove impact of fiscal policy. This is in consonance with international practices and will make the current WPI conceptually closer to 'Producer Price Index'.
- A current "WPI Food Index" is compiled to capture the rate of inflation in food items.
- Seasonality of fruits and vegetables has been updated to account for more months as these are now available for longer duration.
- Item level aggregates for current WPI are compiled using Geometric Mean (GM) following international best practice and as is currently used for compilation of All India CPI.

- A high-level Technical Review Committee was set up for the first time to carry out dynamic review process in order to keep pace with the changing structure of the economy.

Chapter 6

6.1 Objective:

ChemIndia, short for Chemicals Inventory of India, is a secure and adaptable web-based data collection and management system. This platform efficiently compiles and analyses real-time reports from Chemical and Petrochemical manufacturing units. It enhances data management, enabling users to generate swift visualizations and comprehensive reports tailored to the chemical sector's specific needs. The application's primary objective is to elevate the value of chemical industries by streamlining data supply, fostering efficiency, and providing access to the latest sector innovations and technological advancements.

6.2 Key Aspects

- Assessment of the current Data Management System in DCPC.
- Identification of requirements for a comprehensive web-based data management system (ChemIndia) for the chemical industry.
- Categorization of parameters, including Chemical & Petrochemical segments.
- Development of an integrated bilingual web platform (ChemIndia) following Guidelines for Government Websites (GIGW) guidelines.
- Expansion of data coverage by on-boarding chemical units/industries.
- Provision of automated reconciliation and diverse report generation for stakeholders.
- Integration of APIs to amalgamate sector data from various Departments/Ministries.
- Implementation of robust security measures.
- Establishment of Facilitator & Coordinator roles for user management.
- Inclusion of Security Login and user activity logs.
- Integration of Geographic Information System (GIS) mapping.
- Creation of user manuals and provision of user training.
- Migration of existing Production Monitoring System (PMS) data into ChemIndia.
- Pre-production security audit by Computer Emergency Response Team (CERT-In) empanelled bidders.
- Design of a graphical reporting dashboard for easy data visualization.

6.3 Features

- Paperless Data Collection: Reduces paper usage for documentation.
- Time Efficiency: Accelerates data collection and processing for prompt decision-making.
- Interactive User Interface: Ensures consistent visual experience with standardized design.
- Data Validation: Incorporates validations during data entry.
- Role Management: Implements roles for Company, Units, and DCPC.
- User Creation: Allows unlimited user creation for various tasks.
- Reminder Alerts: Sends auto reminders for non-compliance or irregular data submission.
- API Integration: Creates APIs for future external system integration.
- Insights and Charts: Provides data insights and graphical representations on the dashboard.
- User Activity Monitoring: Maintains secure user activity logs.
- Data Confidentiality: Ensures confidential and controlled data access.
- Administrative Controls: Enables industry administrators to validate data entry.
- GIS Dashboard: Displays location-based analytics using interactive visualizations.
- Dynamic Application: Adapts database and entry fields as needed.

6.4 Benefits

- Provides comprehensive sector performance and trend insights.
- Offers geographically based information.
- Facilitates quick decision-making based on real-time market data.
- Enhances data accuracy and efficiency.
- Promotes knowledge generation and innovation in the chemical industry.
- Supports informed policymaking at national and regional levels.
- Encourages collaboration and partnerships within the chemical sector ecosystem.
- Implements cutting-edge technologies for data management.
- Enables remote data entry, monitoring, and analysis.
- Supports researchers and stakeholders in conducting analysis and research activities.

Chapter 7

7.1 Regulations in Europe

European Union has European Chemicals Agency (ECHA), which aims at effective implementation of chemical regulations under framework of the Registration, Evaluation, Authorization, and Restriction of Chemicals regulation abbreviated as REACH and the Classification, Labelling, and Packaging regulation abbreviated as CLP. These regulations are instrumental in ensuring the safe handling of chemicals, safeguarding of human health and protecting the environment and promoting regulatory consistency across the European Union member states.

Key Features of REACH:

- (i) Manufacturers and importers producing or importing chemicals with quantities exceeding one ton per annum must register their chemical substances with ECHA, including properties and safe utilization of the substance
- (ii) ECHA evaluates the submitted data meticulously, and may request for additional information, if required. If registered substance is found to pose risks to human health or environment, regulatory actions may be taken
- (iii) Entities registering for substances with Very High Concern (SVHCs) require authorization for their continued use and are supposed to submit applications along with safer alternatives, if available
- (iv) Substances deemed to pose an unacceptable risk to human health or the environment, may be restricted or prohibited across the EU

Key Features of CLP:

- (i) CLP Aligns the European system with UN's Globally Harmonized System (GHS), ensuring chemical substances and mixtures are classified and labelled to communicate the hazards effectively to the user. Chemicals are classified based on their properties such as toxicity, flammability, reactivity and environmental impact
- (ii) CLP empowers individuals to take appropriate safety measures when working with or in proximity to hazardous chemicals and promotes safer practices in the handling and storage of chemicals

- (iii) Globally recognized hazard communication under CLP facilitates the seamless import and export of chemicals there by streamlining international trade of chemicals

7.2 Regulations in United States of America:

Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA) are the federal agencies for regulation of chemicals in United States of America.

Acts Administered by EPA:

- (i) Toxic Substances Control Act (TSCA) main federal law that regulates the production, importation, use, and disposal of chemicals in the U.S., it enhances the EPA's authority to assess and regulate chemicals for their potential health and environmental risks
- (ii) Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) regulates the registration, distribution, sale, and use of pesticides in the U.S., evaluation and registration of pesticides is responsibility of EPA

EPA also administers Clean Air Act (CAA) controls emissions of volatile organic compounds (VOCs), hazardous air pollutants (HAPs), and other chemicals that can contribute to air pollution and health issues and Clean Water Act (CWA) for controlling the release of hazardous substances and chemicals into water bodies

Acts Administered by OSHA:

- (i) Hazard Communication Standard (HCS) requires employers to communicate chemical hazards to workers through labels, safety data sheets (SDSs), and conduct trainings, it's also aligned with the GHS
- (ii) Occupational Safety and Health Act (OSH Act) sets standards for workplace safety and health, similar as HCS mentioned previously

7.3 Regulations in Japan:

Japan has a framework for regulating chemicals to ensure the safety of human health and the environment administered by Ministry of the Environment (MOE) and the Ministry of Health, Labour and Welfare (MHLW). Major laws and acts are as follows:

- (i) Chemical Substance Control Law (CSCL) governs manufacture and import of chemical substances in Japan and is similar to the EU's REACH regulation, as

per law companies make submission related to new and existing chemical substances.

- (ii) Industrial Safety and Health Act (ISHA) is administered by the Ministry of Health, Labour and Welfare (MHLW), regulates workplace safety and health, also includes the handling of hazardous chemicals, enforces employers to mandatorily provide training to workers, and maintain safety data sheets.
- (iii) Chemical Assessment and Regulation Law regulates the manufacture, import, and handling of chemical substances that may pose risks to human health and the environment.
- (iv) Poisonous and Deleterious Substances Control Act: This law regulates the manufacture, import, storage, and use of poisonous and deleterious substances in Japan. It categorizes chemicals into three classes and imposes various requirements on their handling, including labelling, safety data sheets, and reporting.

MHLW also administers Pollution Control Act, which governs the prevention of pollution and environmental conservation including regulations on release of hazardous substances into the environment, including air and water.

7.4 Regulations in Australia:

Australia has two regulations to manage the safety of chemicals and their impact on human health and the environment. Some key regulations and acts in Australia include:

- (i) Industrial Chemicals Act 2019: This act establishes the Australian Industrial Chemicals Introduction Scheme (AICIS) and regulates the importation and manufacture of industrial chemicals. AICIS assesses and categorizes chemicals based on risk and imposes regulatory requirements accordingly.
- (ii) Globally Harmonized System (GHS): Australia has adopted the GHS for classification and labelling of chemicals. The GHS provides a standardized approach to hazard communication, ensuring that labels and safety data sheets convey consistent information about chemical hazards.

7.5 Regulations in China:

China has enacted several laws and regulations related to hazardous chemicals to ensure the safe handling, storage, transportation, and disposal of such substances. Some of the key laws and regulations include:

- (i) China REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals): China implemented its own version of REACH, which is similar to the European Union's REACH regulation. China REACH requires the registration of new and existing chemicals, including hazardous chemicals, and imposes obligations on manufacturers and importers to ensure the safe use of these substances.
- (ii) Hazardous Chemicals Control Ordinance (China GHS): This regulation implements the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) in China. It standardizes the classification and labelling of hazardous chemicals.
- (iii) Hazardous Chemicals Regulations (Decree No. 591): These regulations lay out the classification and labelling requirements for hazardous chemicals. They also provide guidelines for the safe production, storage, transportation, and use of hazardous chemicals.

7.6 International regulations for control of Chemicals

Sr No	Acts and Rules	Purpose of Legislation	Ministry/ Authority
1	National Chemical Policy, 2014 (DRAFT)	To create an enabling framework to foster innovation, catalyse manufacturing, addressing environmental concerns, encourage research and expansion of the industry	Ministry of Chemicals and Fertilizers (Dept. of Chemicals and Petro-Chemicals)
2	The Petroleum Act, 1934	Regulate the import, transport, storage, production, refining and blending of petroleum	Ministry of Petroleum and Natural Gas
3	The Petroleum Rules, 2002	Regulate the import, transport, storage, production, refining and blending of petroleum	Ministry of Petroleum and Natural Gas, and Ministry of Environment & Forests (MoEF),
4	The Calcium Carbide Rules, 1987	To regulate the import, production, storage, transportation, sale, use and handling and disposal of Calcium Carbide with a view to prevent accidents	Ministry of Petroleum and Natural Gas,

5	The Explosives Act,	To regulate the manufacture, possession, use, sale, transport, export and import of explosives with a view to prevent misuse	Ministry of Commerce and Industry (Department of Explosives)
6	The Explosives Rules, 1983	To regulate the manufacture, possession, use, sale, transport, export and import of explosives with a view to prevent accidents	Ministry of Commerce and Industry and Ministry of Environment & Forests (MoEF),
7	The Insecticides Act, 1968	Regulate the import, manufacture, sale, transport, distribution and use of insecticides with a view to prevent risk to human beings or animals	Ministry of Agriculture, Central Insecticides Board, and Registration Committee
8	The Insecticides Rules, 1971	Regulate the import, manufacture, sale, transport, distribution and use of insecticides with a view to prevent risk to human beings or animals	Ministry of Agriculture,
9	The Fertiliser (Control) Order, 1985 under the Essential Commodities Act, 1955	Regulate the import, manufacture, sale, transport, distribution and	Ministry of Agriculture (Department of Agriculture and Cooperation)
10	The Drugs and Cosmetics Act, 1940	To regulate import, manufacture, distribution and sale of drugs	Ministry of Health and Family Welfare
11	EIA Notification, 1994	Requirement of environmental clearance before establishment/ expansion of certain type of industries having bearing on Environment.	Ministry of Environment & Forests (MoEF), and Central/ State Pollution Control Board and Pollution Control Committees Union Territories
12	Batteries (Management and Handling) Rules, 2001.	To control the hazardous waste generation (lead waste) from used lead acid batteries	Ministry of Environment & Forests (MoEF), and Central/ State Pollution Control Board and Pollution Control Committees Union Territories

13	Hazardous Waste (Management and Handling) Rules, 1989	Management & handling of hazardous wastes in line with the Basel Convention (Trans-boundary movement of hazardous waste)	Ministry of Environment & Forests (MoEF), and Central/ State Pollution Control Board and Pollution Control Committees Union Territories.
14	Ozone Depleting Substances (Regulation and Control) Rules, 2000	Regulate the production, import, use, sale, purchase and phase-out of the Ozone Depleting Substances	Ministry of Environment & Forests
15	Manufacture, Storage and Import of Hazardous Chemical Rules, 1989	Regulate the manufacture, storage and import of hazardous chemicals	Ministry of Environment & Forests (MoEF), and Central/ State Pollution Control Board and Pollution Control Committees Union Territories
16	Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996	Emergency planning preparedness and response to chemical accidents	Ministry of Environment & Forests (MoEF), and Central/ State Pollution Control Board and Pollution Control Committees Union Territories
17	The Air (Prevention and Control of Pollution) Act, 1981 amended 1987	Prevention, control and abatement of air pollution	Central/ State Pollution Control Board and Pollution Control Committees Union Territories
18	The Air (Prevention and Control of Pollution) (Union Territories) Rules,	Prevention, control and abatement of air pollution	Central/ State Pollution Control Board and Pollution Control Committees Union Territories
19	The Water (Prevention and Control of Pollution) Act, 1974 amended 1988	Prevention and control of water pollution and also maintaining or restoring the wholesomeness of water bodies	Central/ State Pollution Control Board and Pollution Control Committees Union Territories
20	The Water (Prevention and Control of Pollution) Rules, 1975	The prevention and control of water pollution and also maintaining or restoring the wholesomeness of water	Central/ State Pollution Control Board and Pollution Control Committees Union Territories

21	The Environment (Protection) Act, 1986,	Protection and Improvement of the Environment	Ministry of Environment & Forests (MoEF), and Central/ State Pollution Control Board and Pollution Control Committees Union Territories
22	Environmental (Protection) Rules, 1986	Protection and Improvement of the Environment	Ministry of Environment & Forests (MoEF), and Central/ State Pollution Control Board and Pollution Control Committees Union Territories
23	National Disaster Management Act, 2005	Disaster prevention, mitigation, capacity building, improving preparedness to deal with disaster, response capability and provision of evacuation, rescue, relief and rehabilitation	Ministry of Home Affairs and Disaster Management Authority

Chapter 8

8.1 This Chapter has been included in this publication to highlight important trends of chemicals and petrochemicals sector during the last five years i.e. FY 2019-20 to FY 2023-24, through graphical presentation with concise analysis. The graphical presentation contains tables alongside trends during the considered period in respect of Production, Installed Capacity, Export, Import and Net Export / Net Import relating to various groups of Major Chemicals and Major Petrochemicals with Compound Annual Growth Rate (CAGR) from the FY 2019-20 to FY 2023-24. The Chapter also contains pie charts depicting share of Major Groups under Major Chemicals and Major Petrochemicals in respect of Production, Installed Capacity, Export and Import along with Net Import / Net Export in the FY 2023-24.

8.2 This Publication has also contained detailed tables in Appendices Section showing group-wise, product-wise, year-wise information of selected Major Chemicals and Major Petrochemicals along with top five import and export destinations. The information relating to exchange rates of Indian Rupees' vis-a-vis US\$, World export of Chemicals by top ten countries-2023, sector-wise FDI inflows etc. are also included in the Appendices Section.

8.3 Many of statistical tables appended in the Publication present temporal data from the FY 2016-17 to FY 2023-24. CAGR in these tables has also been reflected over the period of 8 years.

8.4 Hope trends indicated in this chapter and data contained in the publication would help users in understanding the emerging scenario in the sector with clarity and ease.

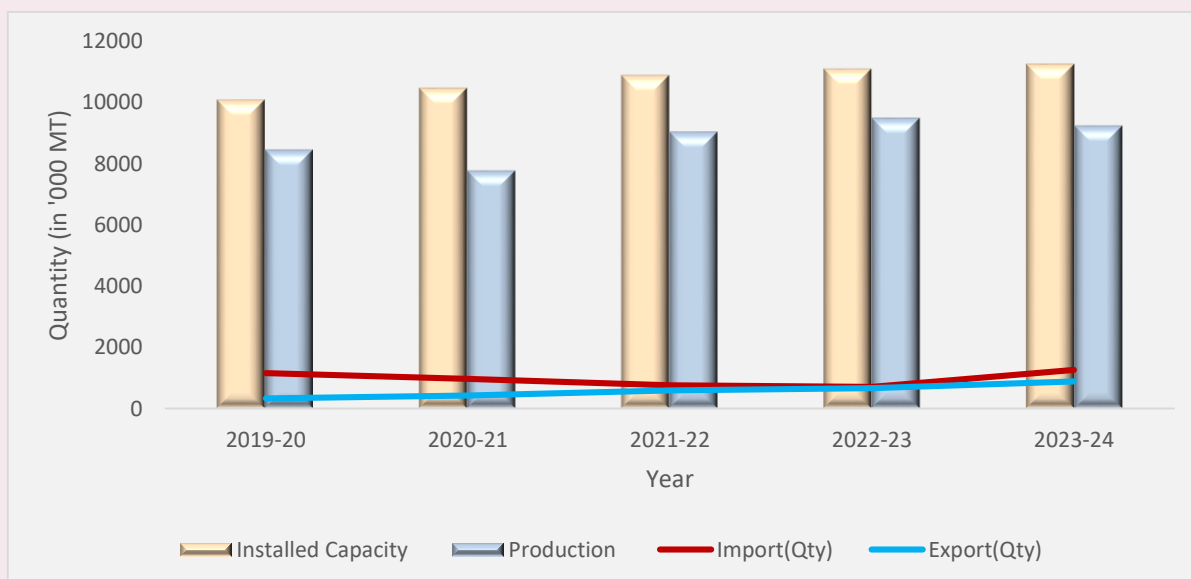
Alkali Chemicals

Table 8.1: - Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	10089	8457	1157	329
2020-21	10473	7776	968	429
2021-22	10889	9041	767	598
2022-23	11100	9493	713	668
2023-24	11260	9234	1263	893
CAGR (%)	2.8	2.2	2.2	28.3

Source: DCPC

Graph 8.1: - Installed Capacity, Production, Import & Export



The Alkali Chemicals chart shows a consistent upward trend in the installed capacity of these chemicals from FY 2019-20 to FY 2023-24, pointing to a promising outlook for the industry. However, the production of alkali chemicals slightly decreased in FY 2023-24 compared to the previous year. Exports grew sharply with a 28.3% CAGR, reflecting rising global demand and improved competitiveness. Imports, however, fluctuated—declining until 2022–23 and then increasing in 2023–24—suggesting periodic supply gaps or changing market dynamics.

Alkali Chemicals

Table 8.2: Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Import	Export	Net Import
2019-20	2408	828	1580
2020-21	1705	853	852
2021-22	1747	1872	-124
2022-23	2700	3143	-443
2023-24	3296	2747	549
CAGR (%)	8.2	35.0	23.2

Source: DCPC

Graph 8.2: - Value of Import, Value of Export and Net Import



The analysis of import–export performance indicates notable fluctuations over the five-year period. Imports declined in 2020–21 but subsequently registered a steady increase, reaching their peak in 2023–24. Exports showed consistent growth from 2020–21 to 2022–23, before moderating in 2023–24. Net imports remained positive for most years except 2021–22 and 2022–23, during which exports outpaced imports.

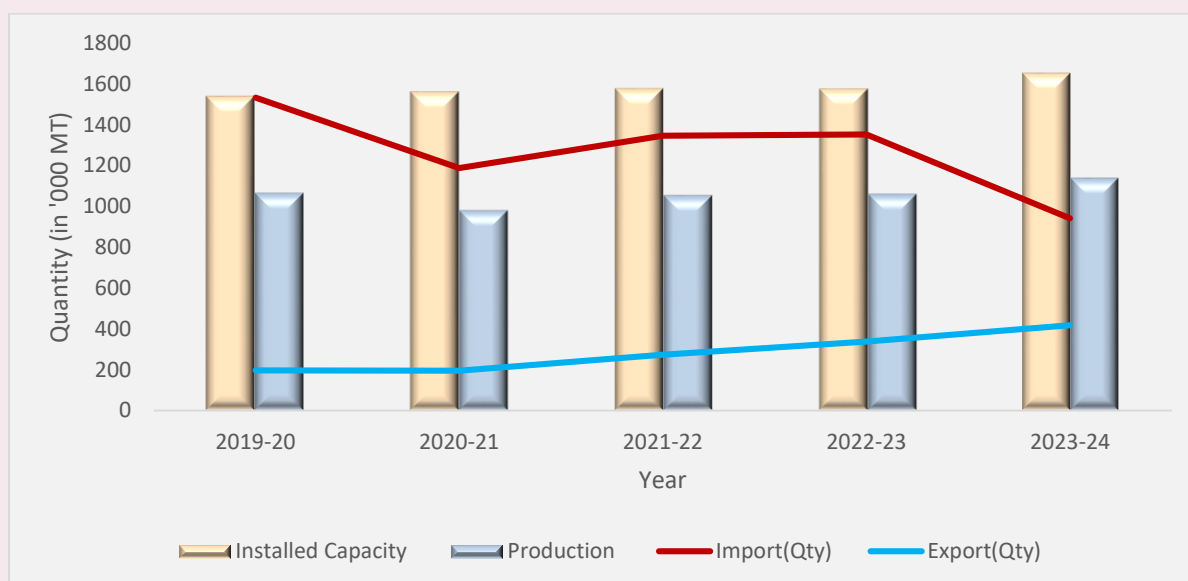
Inorganic Chemicals

Table 8.3:-Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	1538	1063	1532	196
2020-21	1560	978	1188	195
2021-22	1575	1052	1345	273
2022-23	1575	1058	1351	337
2023-24	1650	1137	942	417
CAGR (%)	1.8	1.7	-11.5	20.8

Source: DCPC

Graph 8.3: - Installed Capacity, Production, Import & Export



The graph shows a gradual increase in the installed capacity of inorganic chemicals. The chart reflects a stable production trend for inorganic chemicals from FY 2019-20 to FY 2023-24, indicating consistent market output. However, there was a significant decline in imports of inorganic chemicals in FY 2023-24 compared to the previous year. Despite this, the chart also reveals a relatively high import rate, suggesting a continued reliance on foreign markets for supply.

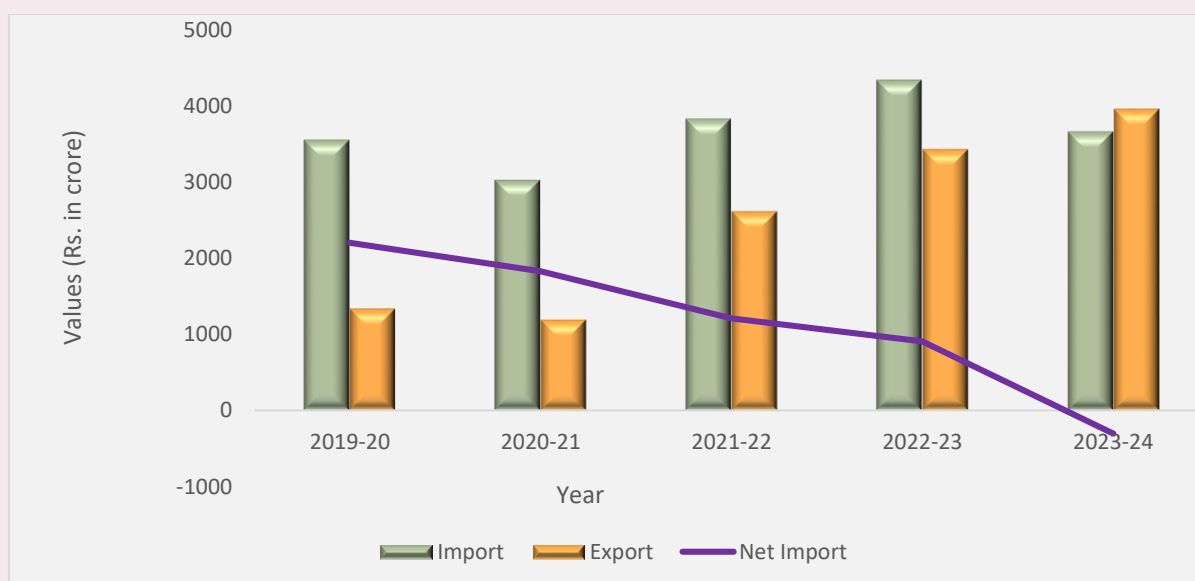
Inorganic Chemicals

Table 8.4: -Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Import	Export	Net Import
2019-20	3546	1341	2205
2020-21	3021	1192	1829
2021-22	3824	2612	1212
2022-23	4336	3428	908
2023-24	3657	3962	-304
CAGR (%)	0.8	31.1	NA

Source: DCPC

Graph 8.4: - Value of Import, Value of Export and Net Import



The import–export analysis for the period 2019–20 to 2023–24 indicates a fluctuating trend in imports, with a decline in 2020–21 followed by a gradual rise up to 2022–23 and a subsequent moderation in 2023–24. Exports exhibited steady and substantial growth throughout the period, culminating in surpassing the import level in 2023–24. As a result, net imports consistently decreased over the years and turned negative in 2023–24, reflecting a transition to a net export position.

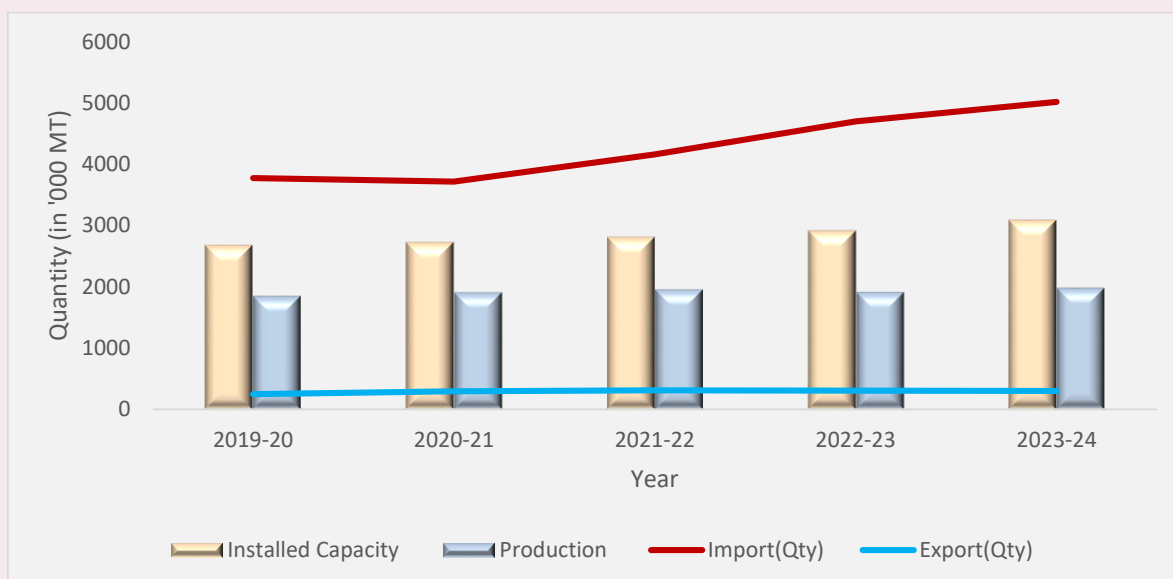
Organic Chemicals

Table 8.5:-Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	2671	1847	3775	245
2020-21	2716	1906	3716	296
2021-22	2800	1953	4160	310
2022-23	2905	1912	4701	304
2023-24	3076	1980	5018	301
CAGR (%)	3.6	1.8	7.4	5.3

Source: DCPC

Graph 8.5:- Installed Capacity, Production, Import & Export



The chart for Organic Chemicals shows a steady and gradual increase in installed capacity from FY 2019-20 to FY 2023-24, reflecting a sustained rise in demand for these chemicals. At the same time, the chart reveals a stable production trend, indicating a balanced and stable market for the industry. However, it also underscores a growing gap between imports and exports, pointing to an increasing reliance on foreign markets for the supply of Organic Chemicals.

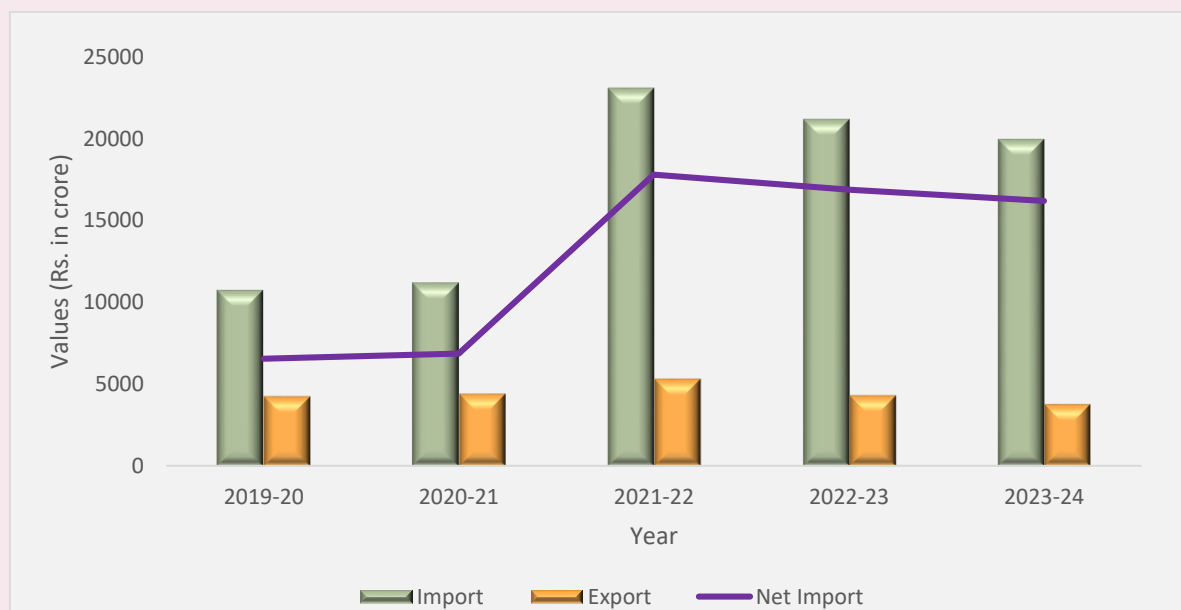
Organic Chemicals

Table 8.6: -Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Import	Export	Net Import
2019-20	10781	4227	6553
2020-21	11247	4380	6867
2021-22	23082	5283	17799
2022-23	21176	4297	16879
2023-24	19970	3769	16202
CAGR (%)	16.7	-2.8	25.4

Source: DCPC

Graph 8.6:- Value of Import, Value of Export and Net Import



The graph shows a declining trend in the import value of Organic Chemicals starting from FY 2021-22. Additionally, the export value of Organic Chemicals decreased by 12.3% in FY 2023-24 compared to the previous year. An increase in net imports of Organic Chemicals indicates a rising dependence on foreign markets to fulfil domestic demand.

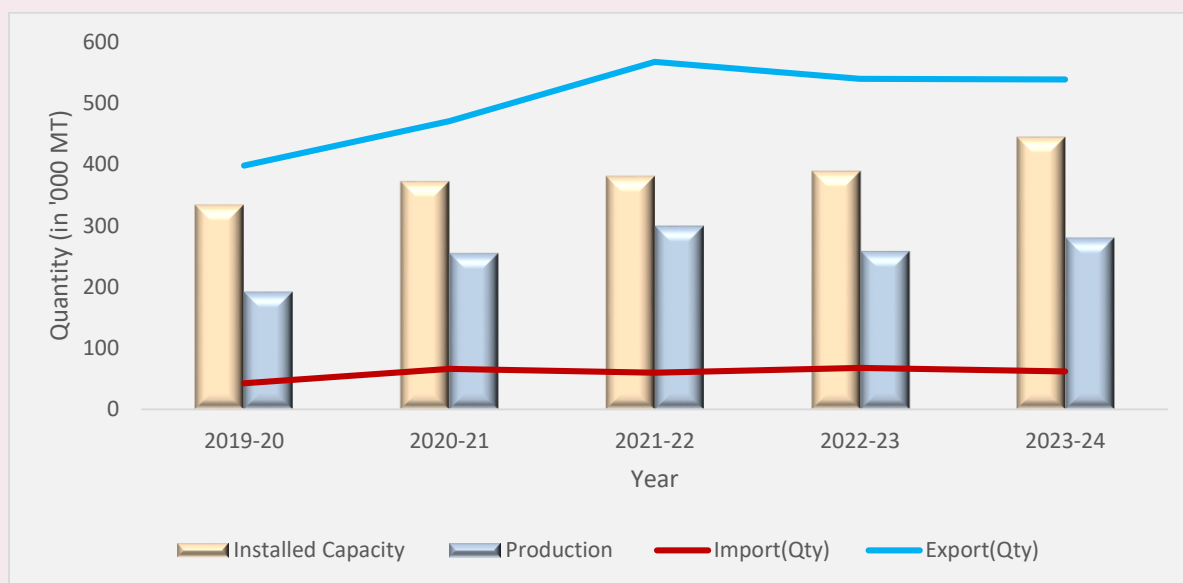
Pesticides

Table 8.7: -Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	334	192	43	398
2020-21	371	255	66	471
2021-22	380	299	60	568
2022-23	389	258	67	540
2023-24	444	280	62	539
CAGR (%)	7.4	9.9	9.8	7.9

Source: DCPC

Graph 8.7: - Installed Capacity, Production, Import & Export



The Pesticides chart demonstrates steady growth in installed capacity from FY 2019-20 to FY 2023-24, indicating a rising demand for these chemicals across different industries. Simultaneously, the chart shows a significant increase in pesticide production, with a Compound Annual Growth Rate (CAGR) of 9.9%, suggesting a positive market outlook.

Pesticides

Table 8.8: -Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Import	Export	Net Export
2019-20	6111	21633	15522
2020-21	8991	23806	14815
2021-22	9726	32664	22938
2022-23	10252	38617	28365
2023-24	8020	30484	22463
CAGR (%)	7.0	9.0	9.7

Source: DCPC

Graph 8.8: - Value of Import, Value of Export and Net Import



The Pesticides chart shows a significant rise in export value from FY 2019-20 to FY 2022-23. However, in FY 2023-24, the export value decreased by 21% compared to the previous year. At the same time, the import value of Pesticides remains consistent. Additionally, the chart highlights a sharp decline in the net export value of Pesticides in FY 2023-24.

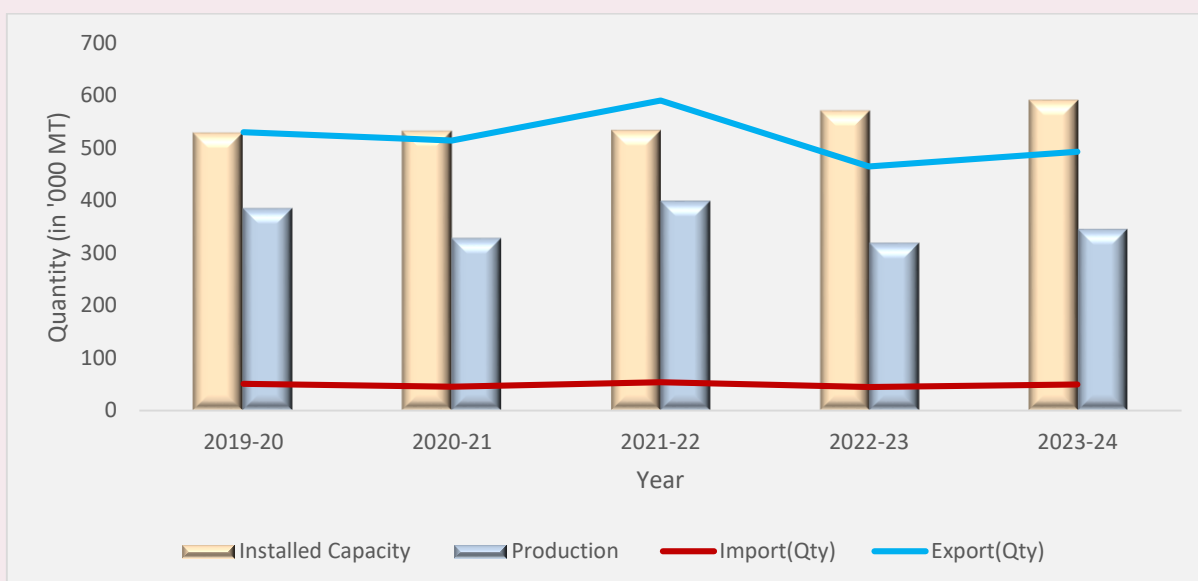
Dyes and Pigments

Table 8.9:-Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	528	384	51	530
2020-21	532	327	45	514
2021-22	533	398	54	591
2022-23	570	318	45	465
2023-24	590	345	50	493
CAGR (%)	2.8	-2.7	-0.5	-1.8

Source: DCPC

Graph 8.9:- Installed Capacity, Production, Import & Export



The Dyes and Pigment chart shows consistent growth in installed capacity from FY 2019-20 to FY 2023-24, reflecting an increasing demand for these chemicals across various industries. The graph also indicates fluctuations in the production of Dyes and Pigments during the same period. However, it highlights 6% growth in exports of Dyes and Pigments in FY 2023-24 compared to the previous year.

Dyes and Pigments

Table 8.10: -Value of Import, Value of Export and Net Export (Rs. in Crore)

Year	Import	Export	Net Export
2019-20	2814	19284	16470
2020-21	2527	17704	15177
2021-22	3267	23365	20098
2022-23	2904	19844	16940
2023-24	2847	18420	15573
CAGR (%)	0.3	-1.1	-1.4

Source: DCPC

Graph 8.10:- Value of Import, Value of Export and Net Export



The import–export performance from 2019–20 to 2023–24 demonstrates relative stability in trade dynamics. Imports remained steady, supporting domestic demand, while exports, though showing minor fluctuations, continued to contribute significantly to the overall trade surplus. Net exports maintained a healthy positive position throughout the period, reflecting consistent value addition through exports over imports. The CAGR analysis indicates stable import growth (0.3%) and only slight variations in exports and net exports, underscoring a resilient trade performance during the review period.

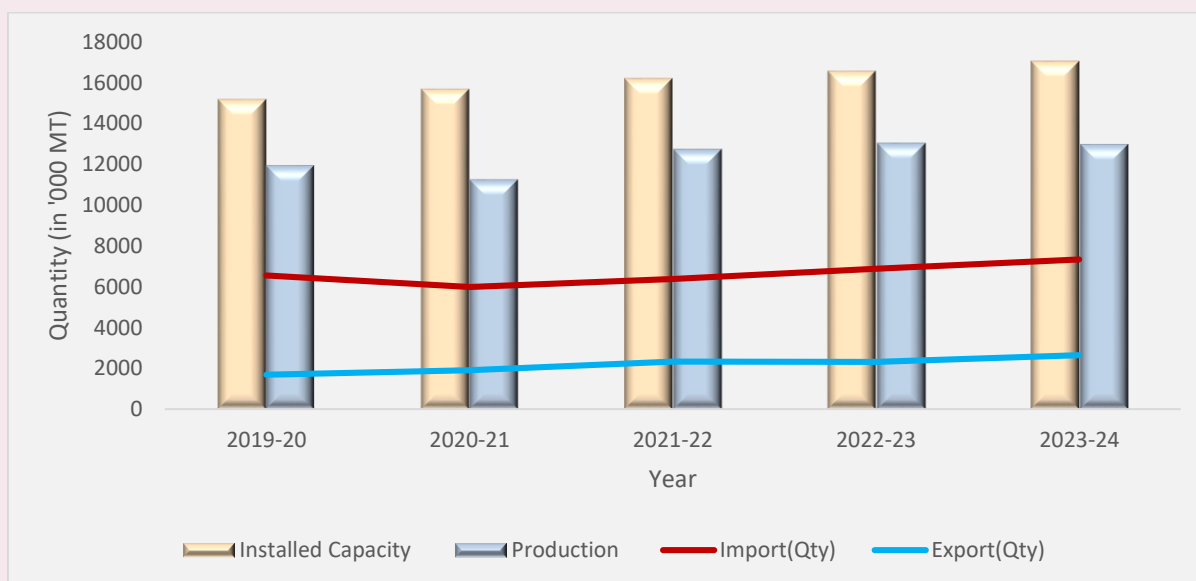
Total Major Chemicals

Table 8.11: -Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	15160	11943	6557	1698
2020-21	15652	11243	5983	1905
2021-22	16178	12743	6385	2339
2022-23	16538	13039	6878	2313
2023-24	17021	12976	7334	2642
CAGR (%)	2.9	2.1	2.8	11.7

Source: DCPC

Graph 8.11: - Installed Capacity, Production, Import & Export



The Total Major Chemicals chart shows a steady increase in installed capacity from FY 2019-20 to FY 2023-24. During this period, production of Major Chemicals consistently rose, with a Compound Annual Growth Rate (CAGR) of 2.1%, except for a slight dip in FY 2020-21. This indicates a stable market for the industry, despite the pandemic-related disruptions. However, the chart also reveals that imports exceed exports, pointing to a trade deficit in Total Major Chemicals. This suggests that the domestic market is becoming more dependent on imports to meet demand, possibly due to limited local production or higher consumption of these chemicals.

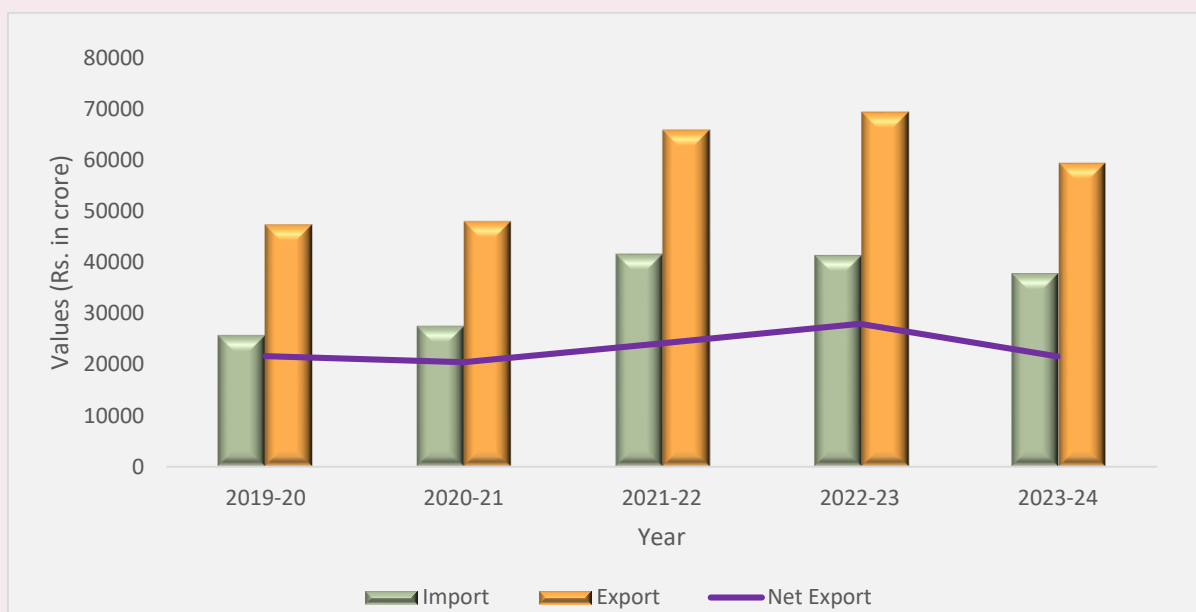
Total Major Chemicals

Table 8.12: -Value of Import, Value of Export and Net Export (Rs. in Crore)

Year	Import	Export	Net Export
2019-20	25659	47313	21653
2020-21	27490	47935	20445
2021-22	41646	65796	24150
2022-23	41368	69330	27962
2023-24	37791	59381	21590
CAGR (%)	10.2	5.8	-0.1

Source: DCPC

Graph 8.12: - Value of Import, Value of Export and Net Export



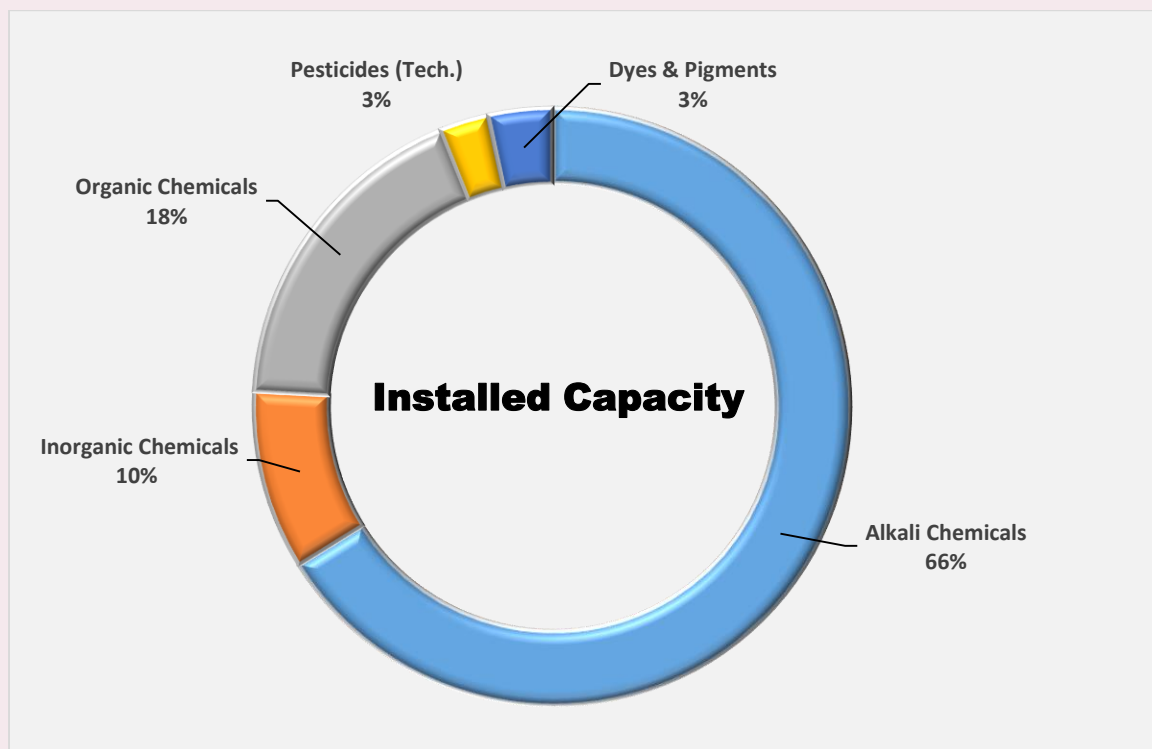
The import–export data for 2019–20 to 2023–24 reflects a robust trade performance with significant contributions from both imports and exports. Imports grew steadily at a CAGR of 10.2%, supporting domestic economic activity, while exports recorded a consistent increase at a CAGR of 5.8%, demonstrating the country’s sustained presence in international markets. Net exports remained positive throughout the period, highlighting a continued trade surplus, with minor fluctuations reflecting strategic adjustments in trade patterns. Overall, the data indicates a stable and resilient trade performance over the review period.

Table 8.13: - Installed capacity of Major Chemical (Group wise) in the FY 2023-24

Group	Installed Capacity (in '000 MT)
Alkali Chemicals	11260
Inorganic Chemicals	1650
Organic Chemicals	3076
Pesticides (Tech.)	444
Dyes & Pigments	590

Source: DCPC

Pie Chart 8.1: -Share of different groups of Major Chemicals in Installed Capacity in the FY 2023-24



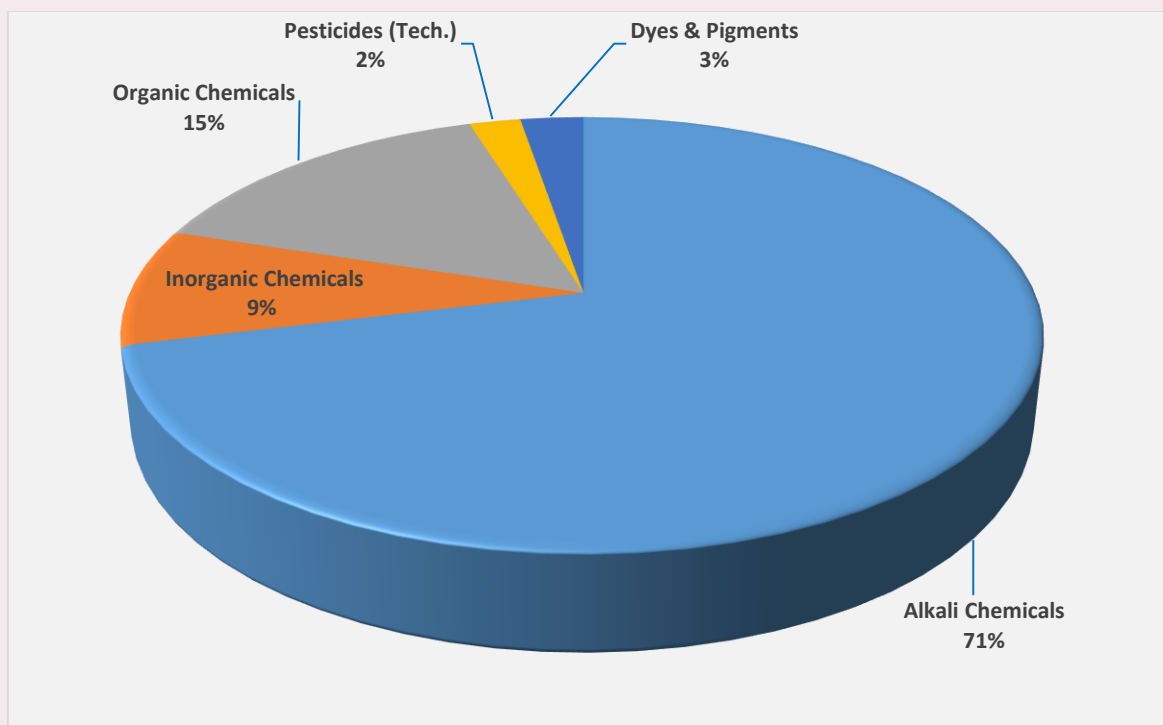
The charts above show the distribution of installed capacity across major chemical groups for FY 2023-24. Alkali Chemicals hold the largest share, accounting for 66% of the total installed capacity, followed by Organic Chemicals at 18%, Inorganic Chemicals at 10%, Dyes & Pigments and Pesticides both at 3%.

Table 8.14: - Production of Major Chemical (Group wise) in the FY 2023-24

Group	Production (in '000 MT)
Alkali Chemicals	9234
Inorganic Chemicals	1137
Organic Chemicals	1980
Pesticides (Tech.)	280
Dyes & Pigments	345

Source: DCPC

Pie Chart 8.2: -Share of different groups of Major Chemicals in production in the FY 2023-24



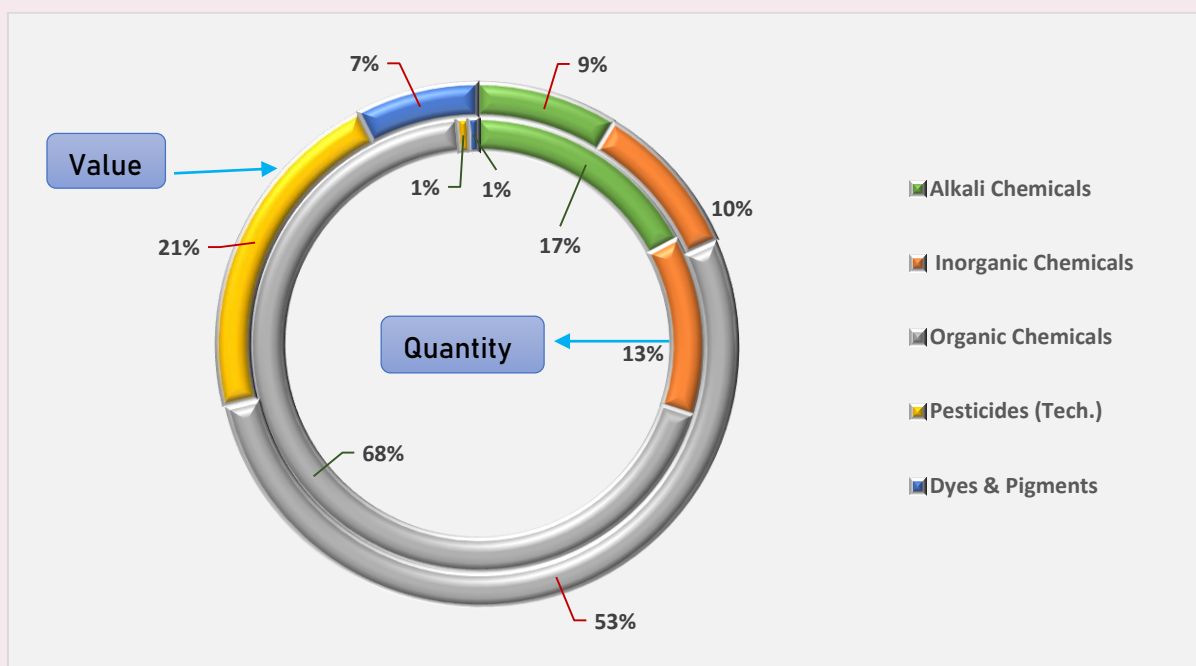
The charts show the production figures for major chemical groups in FY 2023-24. Alkali Chemicals lead with the largest share, accounting for 71% of total production. Organic Chemicals follow with 15%, while Inorganic Chemicals contribute 9%. Pesticides make up 2%, and Dyes & Pigments account for 3% of the production.

Table 8.15: - Import quantity and value of Major Chemical (Group wise) in the FY 2023-24

Group	Qty (in MT)	Values (Rs. Lakh)
Alkali Chemicals	1262504	329564
Inorganic Chemicals	941784	365743
Organic Chemicals	5017641	1997048
Pesticides (Tech.)	61986	802037
Dyes & Pigments	49633	284741

Source: DCPC

Pie Chart 8.3: - Share of different Groups of Major Chemicals in Import quantity and value in the FY 2023-24



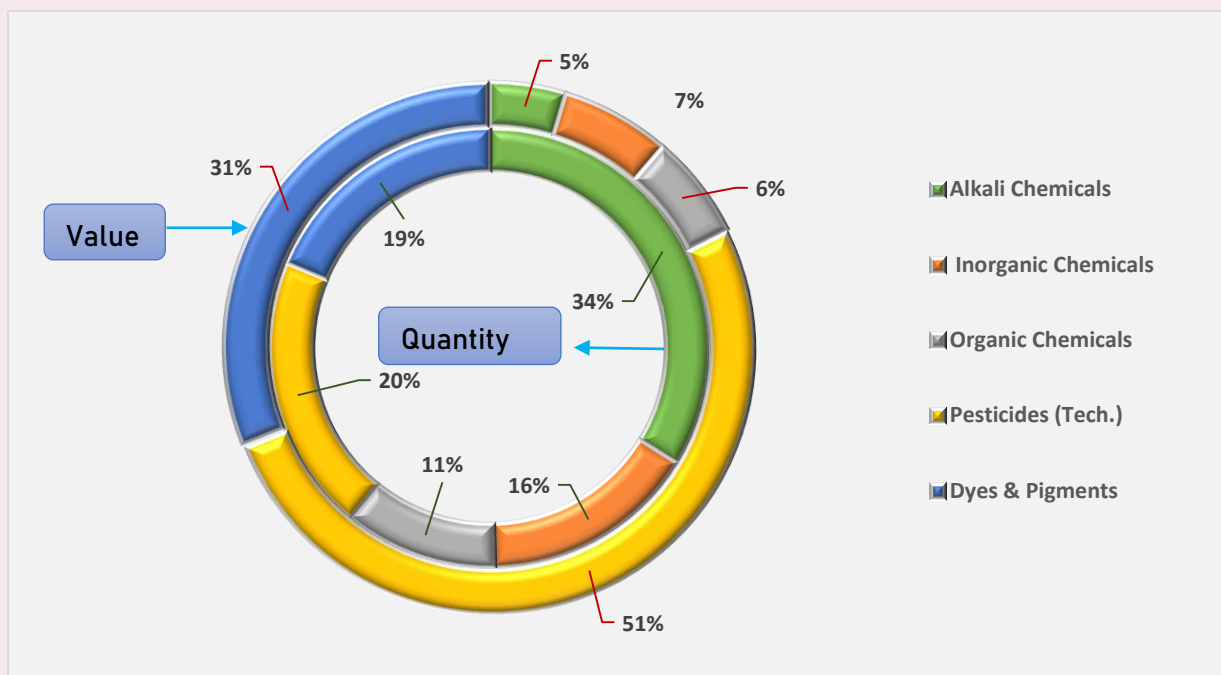
The above graph illustrates bivariate analysis of two key attributes, Import Quantity & Value, for the major chemical groups for the FY 2023–24. Alkali Chemicals quantity import accounts for 68% of total imports and value represents 53% of total value. Following, Alkali Chemicals quantity import amounts to 17% and value represents 9% of total value. As we can see from the graph, Pesticides quantity import accounts for only 1% of total imports but its value percentage from total is 21%.

Table 8.16: - Export quantity and value of Major Chemical (Group wise) in the FY 2023-24

Group	Qty (in MT)	Values (Rs. Lakh)
Alkali Chemicals	893112	274679
Inorganic Chemicals	416978	396158
Organic Chemicals	300783	376865
Pesticides (Tech.)	538624	3048362
Dyes & Pigments	492682	1842026

Source: DCPC

Pie Chart 8.4: - Share of different Groups of Major Chemicals in Export quantity and value in the FY 2023-24



The graph presented above depicts a bivariate analysis of two critical metrics, Export Quantity and Value, for major chemical groups in the FY 2023–24. Alkali Chemicals export quantity comprises 34% of the total exports, while its value represents a only 5% of the total export value. In the case of Inorganic Chemicals, the exported quantity accounts for 16%, contributing to 7% of the total value. Remarkably, Pesticides' import quantity constitutes 20% of the total exports, but its value as a percentage of the total stands significantly higher at 51%, as visually depicted in the graph.

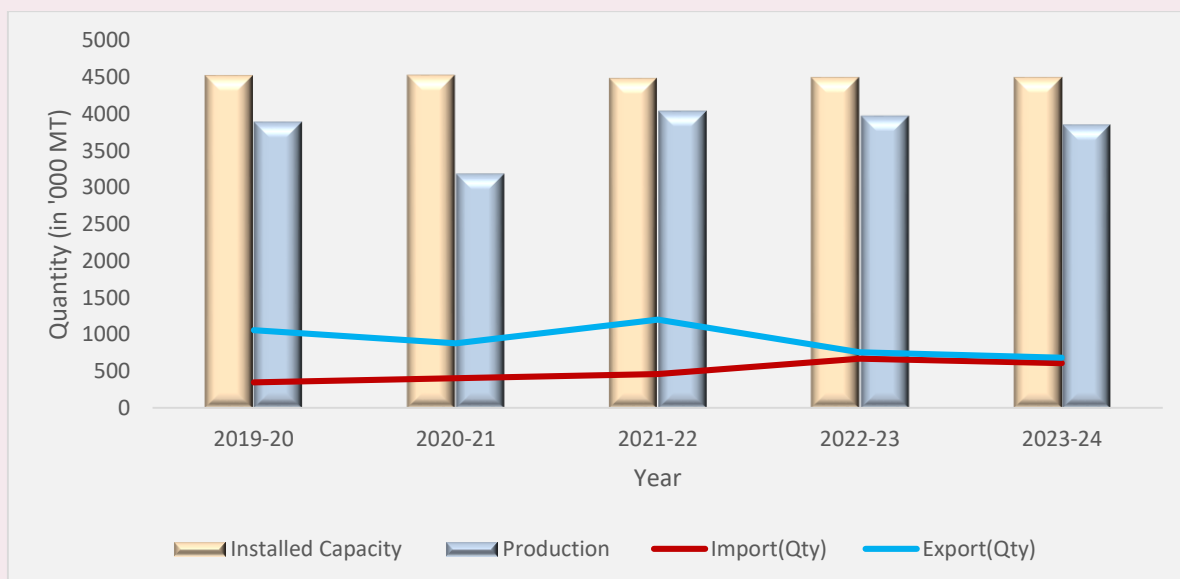
Synthetic Fibre

Table 8.17:-Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	4521	3893	347	1059
2020-21	4529	3185	403	879
2021-22	4483	4040	460	1202
2022-23	4496	3973	670	759
2023-24	4498	3853	611	683
CAGR (%)	-0.1	-0.3	15.2	-10.4

Source: DCPC

Graph 8.13: - Installed Capacity, Production, Import & Export



The chart for Synthetic Fibres exhibits a slight increase in installed capacity from the FY 2019-20 to FY 2023-24, reflecting a slow but steady growth in demand. Over the same period, the trend of production of Synthetic Fibres was stable from FY 2019-20 and FY 2023-24 with only minor fluctuations, except for a minor dip in the FY 2020-21. This suggests a stable market for the industry, despite the disruptions caused by the pandemic. However, exports of Synthetic Fibres have decreased compared to the previous year.

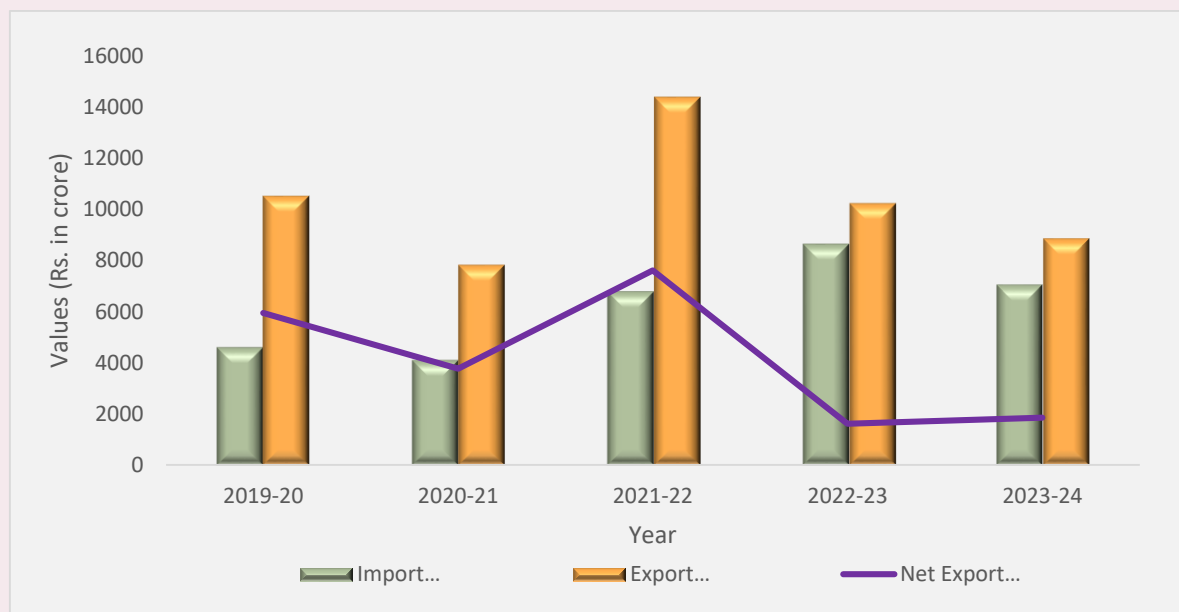
Synthetic Fibre

Table 8.18: -Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Import	Export	Net Export
2019-20	4609	10550	5941
2020-21	4107	7870	3763
2021-22	6785	14389	7604
2022-23	8647	10261	1614
2023-24	7049	8896	1847
CAGR (%)	11.2	-4.2	-25.3

Source: DCPC

Graph 8.14: - Value of Import, Value of Export and Net Import



In FY 2023-24, imports and exports declined sharply, reducing net exports to 1847 units, the lowest in the period. While imports grew steadily, exports fell, highlighting rising domestic demand and challenges in maintaining export competitiveness.

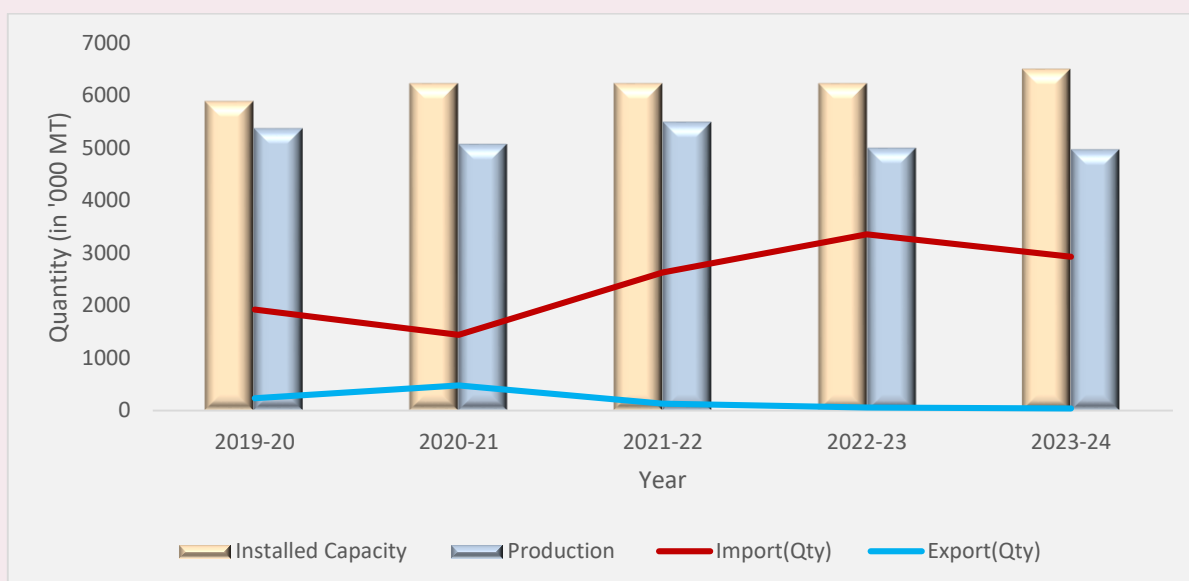
Fibre Intermediate

Table 8.19:-Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	5885	5359	1920	234
2020-21	6228	5059	1441	475
2021-22	6228	5482	2627	128
2022-23	6228	4988	3356	56
2023-24	6500	4956	2929	36
CAGR (%)	2.5	-1.9	11.1	-37.5

Source: DCPC

Graph 8.15: - Installed Capacity, Production, Import & Export



The Fibre Intermediate chart demonstrates a consistent rise in installed capacity from FY 2019-20 to FY 2023-24. However, production has been declining since FY 2021-22. Moreover, the expanding gap between imports and exports reflects a growing demand in the domestic market and an increasing reliance on foreign markets.

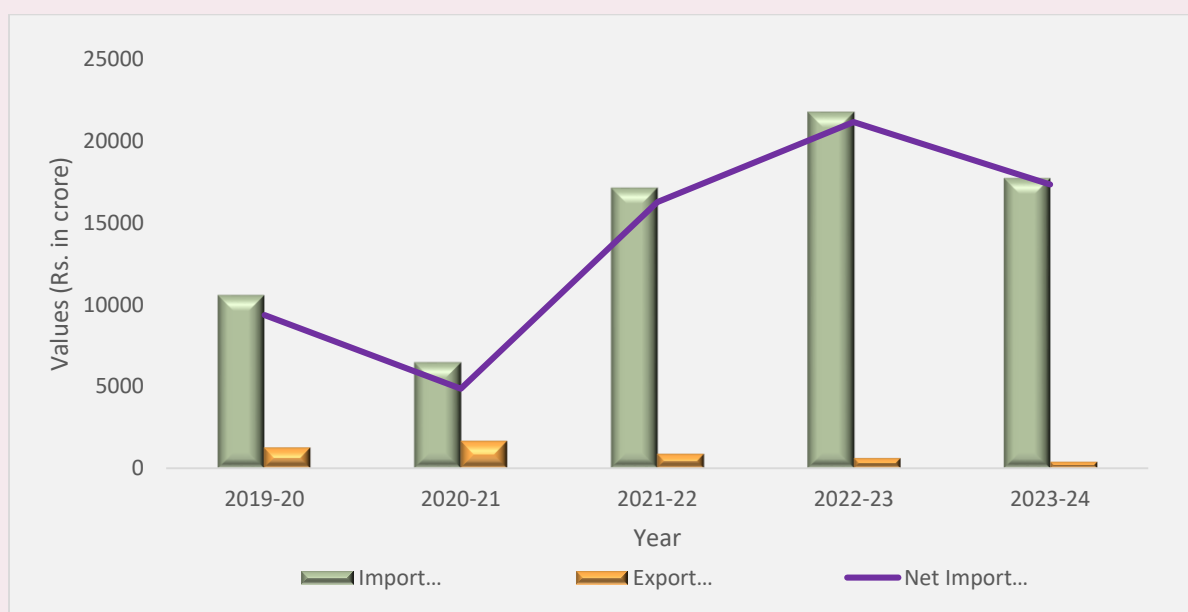
Fibre Intermediate

Table 8.20: -Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Import	Export	Net Import
2019-20	10595	1236	9359
2020-21	6495	1629	4866
2021-22	17133	865	16267
2022-23	21762	608	21154
2023-24	17716	382	17334
CAGR (%)	13.7	-25.4	16.7

Source: DCPC

Graph 8.16: - Value of Import, Value of Export and Net Import



The import–export data for 2019–20 to 2023–24 shows dynamic trade patterns over the period. Imports experienced significant growth, rising at a CAGR of 13.7%, reflecting increasing domestic demand. Exports, however, recorded a decline at a CAGR of -25.4%, indicating challenges in external market performance. Net imports remained consistently positive and grew at a CAGR of 16.7%, highlighting the country's continued reliance on imports to meet domestic requirements. Overall, the data underscores a strong import momentum while emphasizing the need for strategies to enhance export performance.

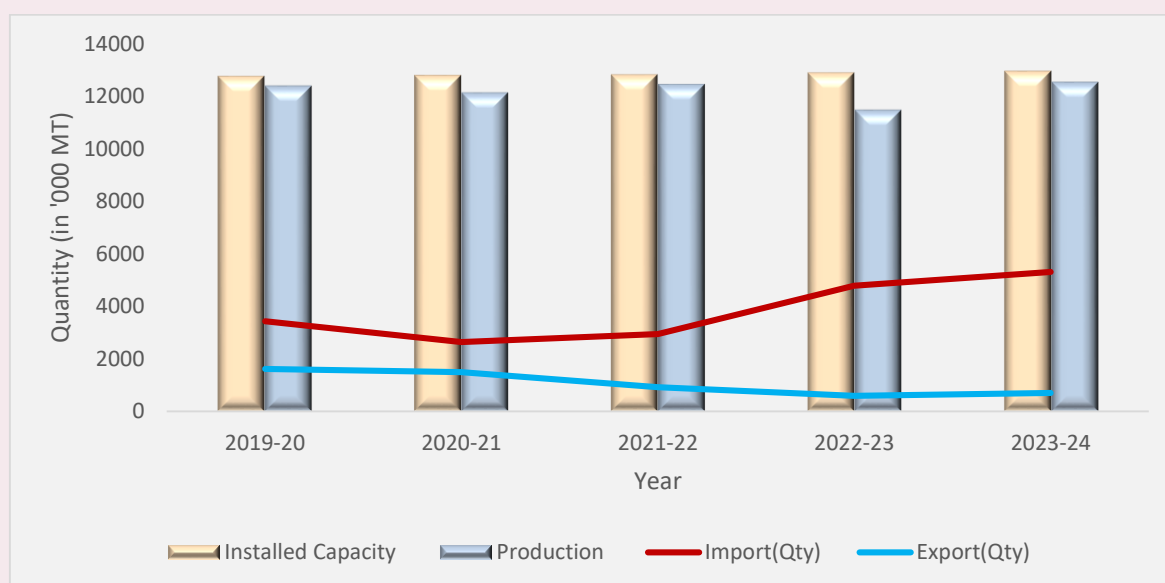
Polymers

Table 8.21: -Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	12754	12404	3430	1615
2020-21	12799	12144	2641	1489
2021-22	12820	12471	2941	921
2022-23	12894	11487	4789	586
2023-24	12950	12548	5313	705
CAGR (%)	0.4	0.3	11.6	-18.7

Source: DCPC

Graph 8.17: - Installed Capacity, Production, Import & Export



The chart for Polymers exhibits a steady increase in the installed capacity from the FY 2019-20 to FY 2023-24. Over the same period, the trend of production of Polymers was stable with only minor fluctuations. Furthermore, the gap between quantity of Import and Export widening showing strong demand in domestic market as well as increasing dependence on foreign market.

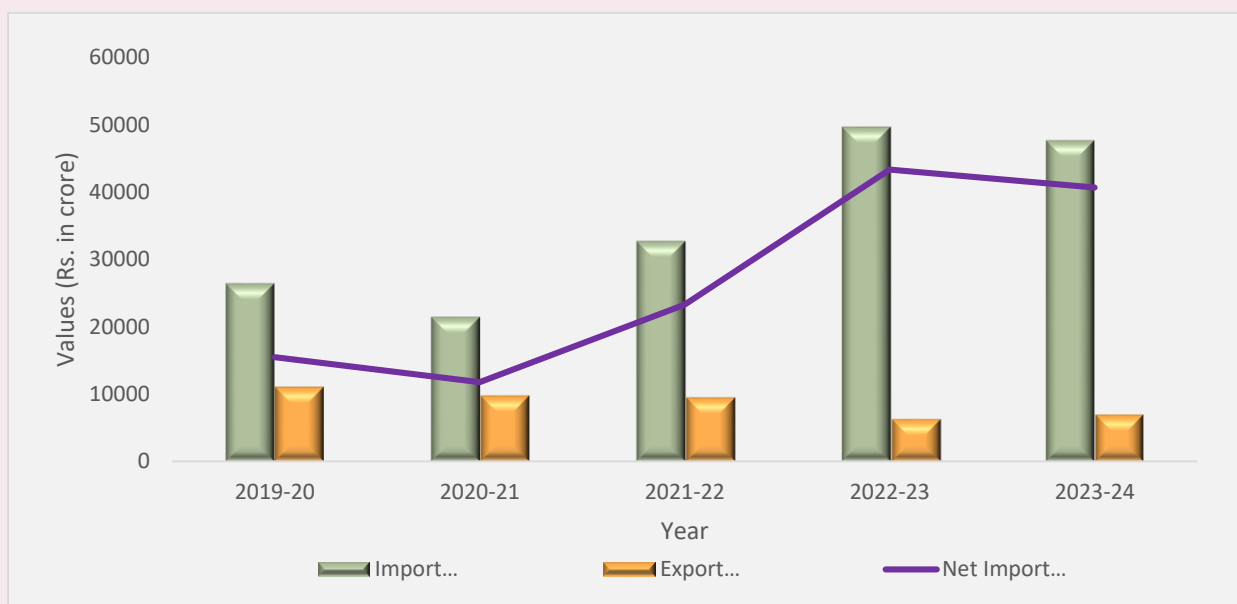
Polymers

Table 8.22: -Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Import	Export	Net Import
2019-20	26394	10953	15440
2020-21	21423	9681	11742
2021-22	32672	9425	23247
2022-23	49567	6225	43341
2023-24	47572	6898	40673
CAGR (%)	15.9	-10.9	27.4

Source: DCPC

Graph 8.18: - Value of Import, Value of Export and Net Import



The chart shows a notable increase in import values for Polymers from FY 2020-21 to FY 2022-23, followed by a slight decrease in FY 2023-24. Export values remained relatively stable, with some fluctuations. Initially, net import values declined, but later increased, indicating continued dependence on imports for Polymers in India.

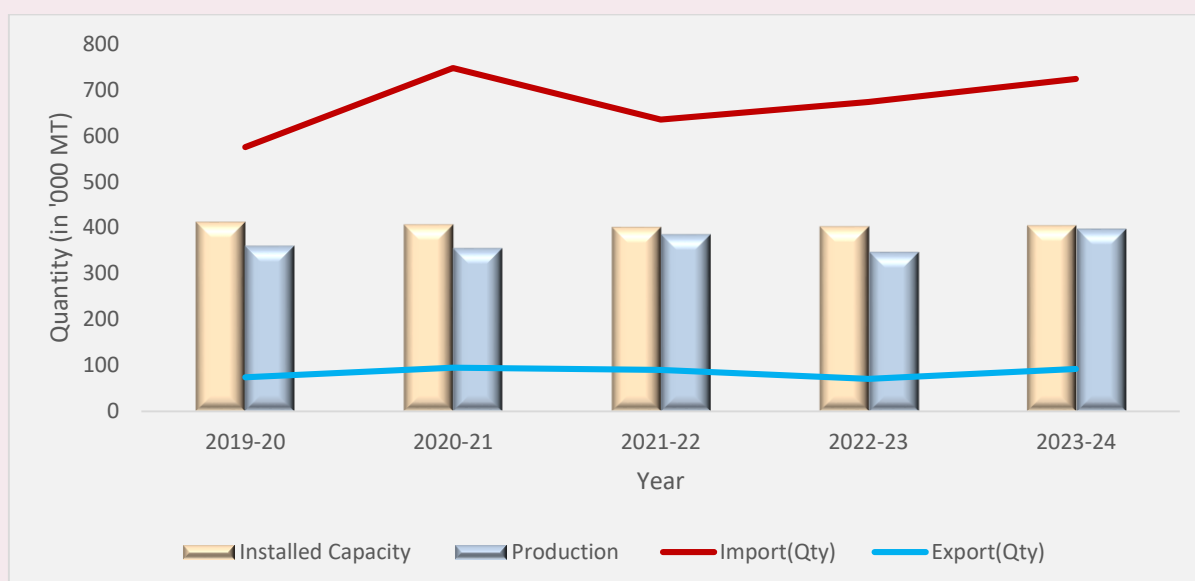
Synthetic Rubber

Table 8.23: -Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	411	358	575	74
2020-21	406	353	747	95
2021-22	400	383	635	90
2022-23	402	345	673	70
2023-24	403	395	724	92
CAGR (%)	-0.5	2.5	5.9	5.7

Source: DCPC

Graph 8.19: - Installed Capacity, Production, Import & Export



The chart reveals a steady installed capacity for Synthetic Rubber from FY 2019-20 to FY 2023-24. During this period, production increased at a Compound Annual Growth Rate (CAGR) of 2.5%. Additionally, the import value of Synthetic Rubber was significantly higher than its export value, indicating stronger domestic demand for the product.

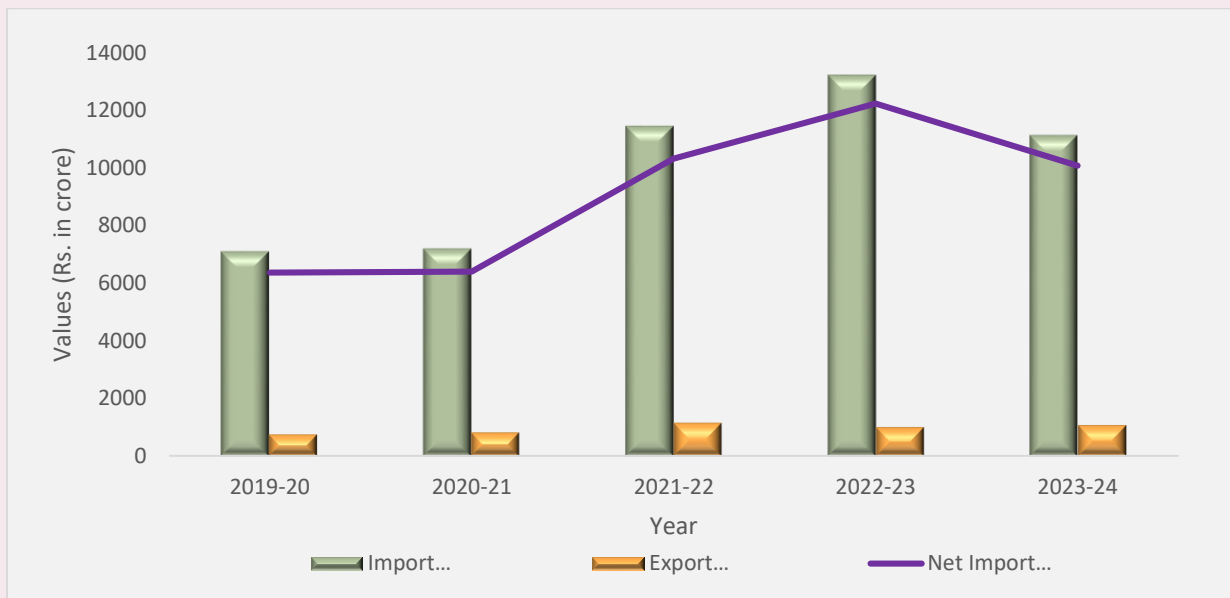
Synthetic Rubber

Table 8.24: -Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Import	Export	Net Import
2019-20	7095	731	6365
2020-21	7189	794	6394
2021-22	11441	1118	10323
2022-23	13206	975	12231
2023-24	11121	1039	10081
CAGR (%)	11.9	9.2	12.2

Source: DCPC

Graph 8.20: - Value of Import, Value of Export and Net Import



The Synthetic Rubber chart shows a slight decrease in import and increase in export values in FY 2023-24 compared to the previous financial year. The net import data reveals a trade deficit for Synthetic Rubber.

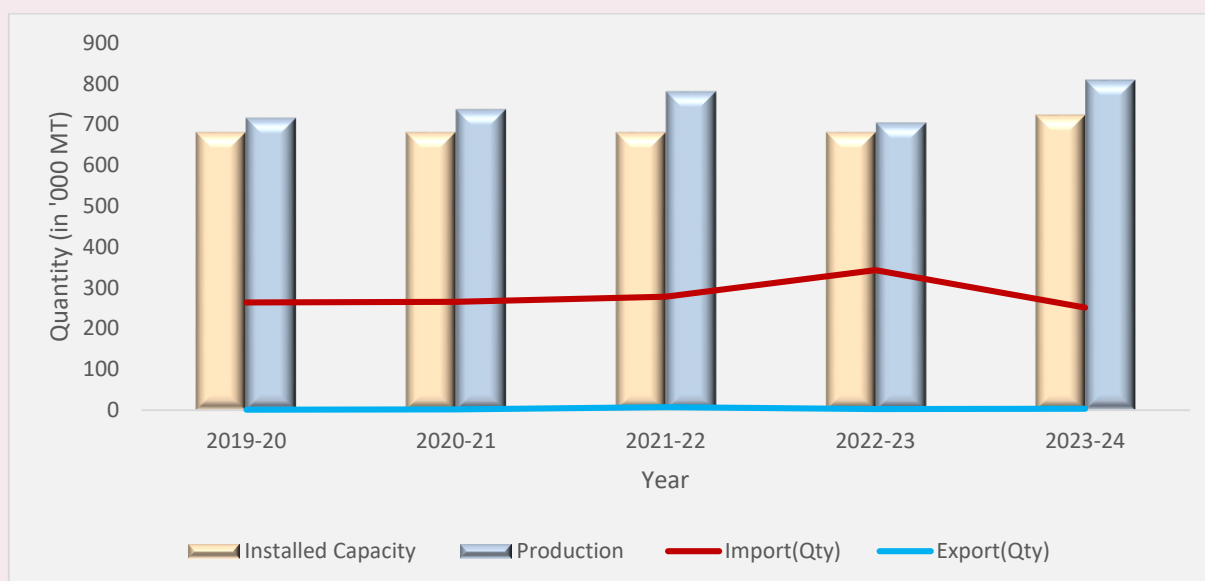
Synthetic Detergent Intermediates

Table 8.25: -Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	680	715	264	1
2020-21	680	736	265	2
2021-22	680	780	278	7
2022-23	680	703	343	3
2023-24	722	808	252	4
CAGR (%)	1.5	3.1	-1.2	37.1

Source: DCPC

Graph 8.21: - Installed Capacity, Production, Import & Export



The chart shows that the installed capacity for Synthetic Detergent Intermediates stayed the same from FY 2019-20 to FY 2022-23, but decreased in the current year. Production increased from FY 2019-20 to FY 2023-24, with a small drop in FY 2022-23, indicating better production efficiency. In addition, the import value of Synthetic Detergent Intermediates was higher than its export value, showing more demand in the domestic market than abroad.

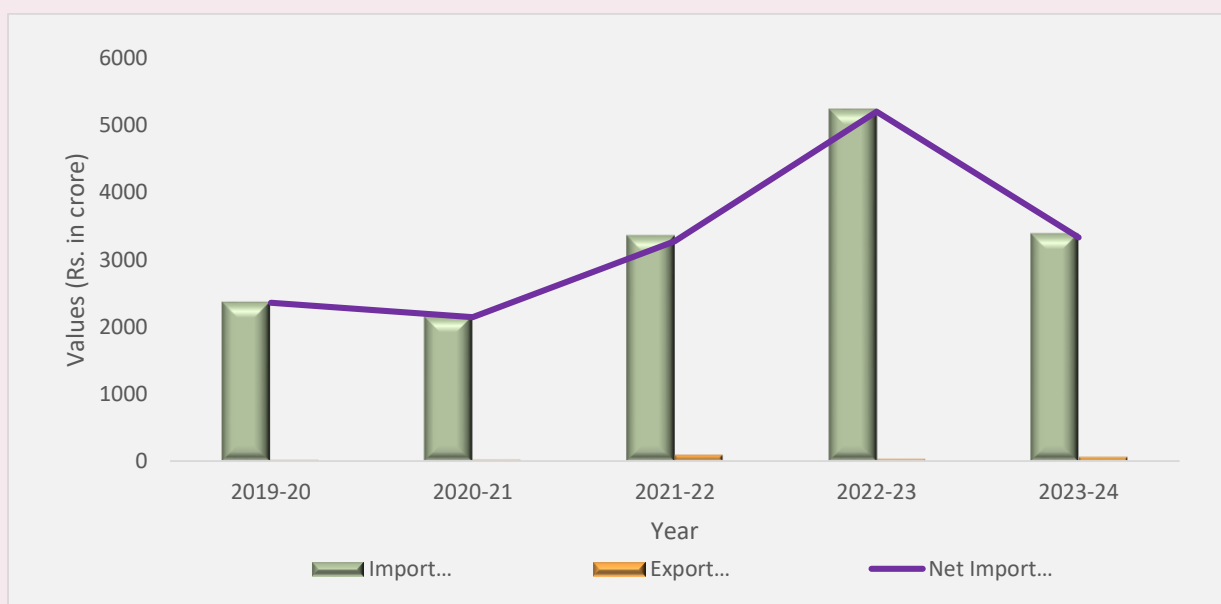
Synthetic Detergent Intermediates

Table 8.26: -Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Import	Export	Net Import
2019-20	2374	15	2359
2020-21	2163	19	2143
2021-22	3362	87	3275
2022-23	5236	31	5204
2023-24	3389	57	3332
CAGR (%)	9.3	40.1	9.0

Source: DCPC

Graph 8.22: - Value of Import, Value of Export and Net Import



The chart for Synthetic Detergent Intermediates displays decline in import value in FY 2023-24 as compare to the previous year. The Export values remained consistently low throughout the period. The Net import values showed a similar trend to import values.

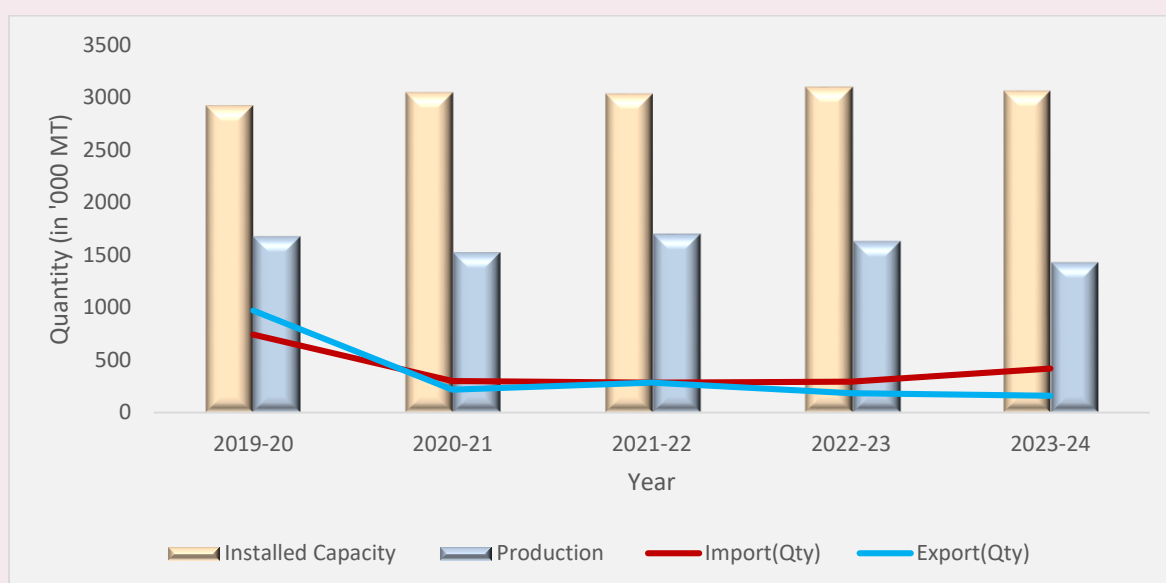
Performance Plastics

Table 8.27: -Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	2919	1672	741	969
2020-21	3046	1520	299	217
2021-22	3032	1698	283	284
2022-23	3096	1628	292	182
2023-24	3060	1425	418	157
CAGR (%)	1.2	-3.9	-13.3	-36.5

Source: DCPC

Graph 8.23: - Installed Capacity, Production, Import & Export



The chart shows that the installed capacity for Performance Plastics is much higher than its production from FY 2019-20 to FY 2023-24. This suggests that the installed capacity is underutilized, possibly due to factors like low demand or operational challenges. While export and import values were similar in FY 2020-21 and FY 2022-23.

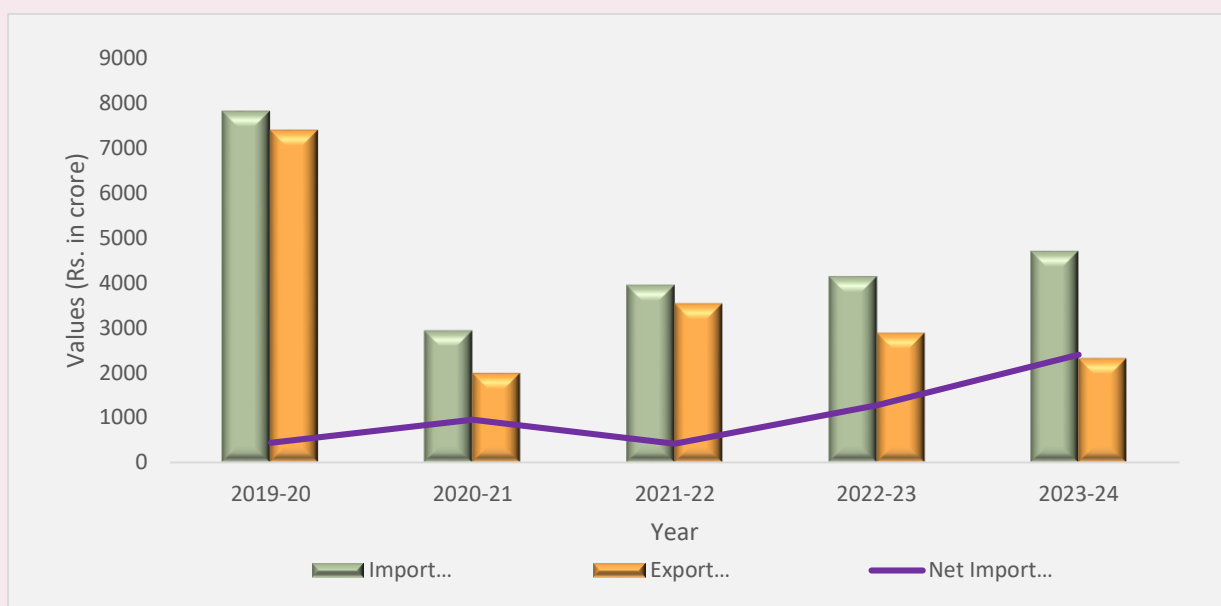
Performance Plastics

Table 8.28: -Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Import	Export	Net Import
2019-20	7825	7390	435
2020-21	2938	1987	951
2021-22	3949	3537	412
2022-23	4143	2876	1268
2023-24	4708	2314	2395
CAGR (%)	-11.9	-25.2	53.2

Source: DCPC

Graph 8.24: - Value of Import, Value of Export and Net Import



The Performance Plastics chart shows a steady decrease in import values from FY 2019-20 to FY 2020-21, followed by a gradual increase in subsequent years, reaching 4708 units in FY 2023-24. Exports continuously decreasing from FY 2019-20 to 2023-24. The net imports increasing during the same period indicating a strong domestic demand of Performance Plastics.

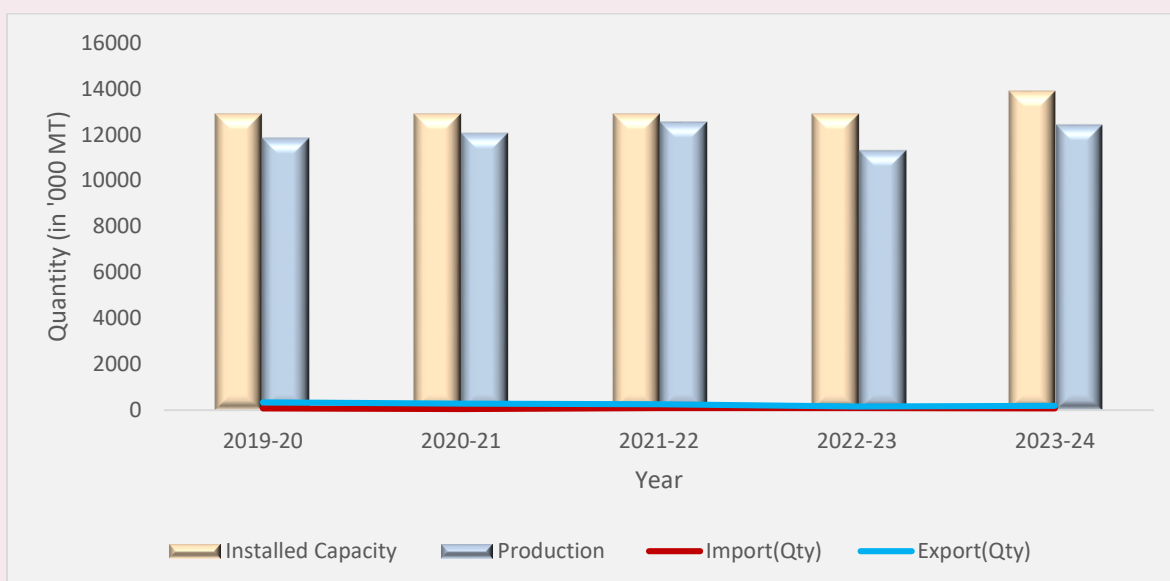
Olefins

Table 8.29: -Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	12890	11835	76	336
2020-21	12890	12039	44	285
2021-22	12890	12527	92	256
2022-23	12890	11296	94	162
2023-24	13880	12401	68	189
CAGR (%)	1.9	1.2	-2.6	-13.4

Source: DCPC

Graph 8.25: - Installed Capacity, Production, Import & Export



The Olefins chart shows a steady rise in installed capacity, increasing in FY 2019-20 to FY 2023-24. However, production grew at a slower rate, with a decline observed in FY 2022-23 before recovering in FY 2023-24. In terms of trade, exports consistently outpaced imports throughout the period, although both quantities remained low. This narrowing trade gap highlights a downward trend in export performance, despite stable production and increased capacity.

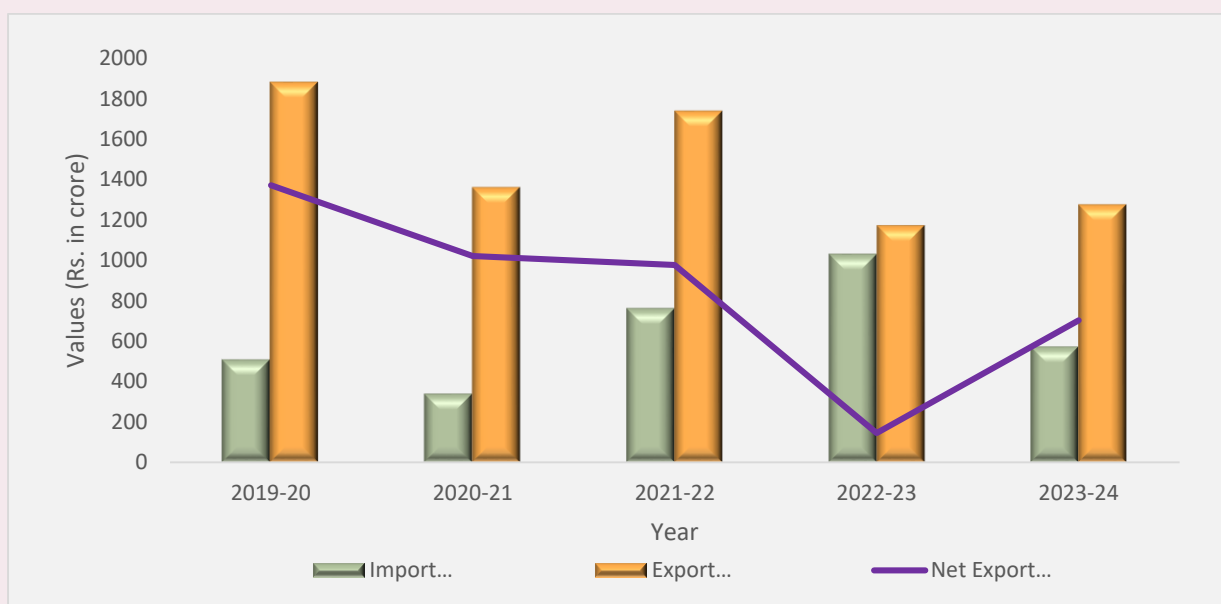
Olefins

Table 8.30: -Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Import	Export	Net Export
2019-20	510	1881	1371
2020-21	340	1361	1021
2021-22	762	1739	977
2022-23	1028	1173	144
2023-24	573	1276	702
CAGR (%)	3.0	-9.3	-15.4

Source: DCPC

Graph 8.26: - Value of Import, Value of Export and Net Import



The Olefins chart shows fluctuations in import values, with imports peaking in FY 2022-23 before declining in FY 2023-24. Despite this volatility, imports grew at a modest CAGR, indicating a slight increase in demand over the years. In contrast, exports consistently declined, falling in FY 2019-20 to FY 2023-24. As a result, net exports narrowed in FY 2022-23, reflecting a weakening trade surplus driven by falling export performance and fluctuating imports.

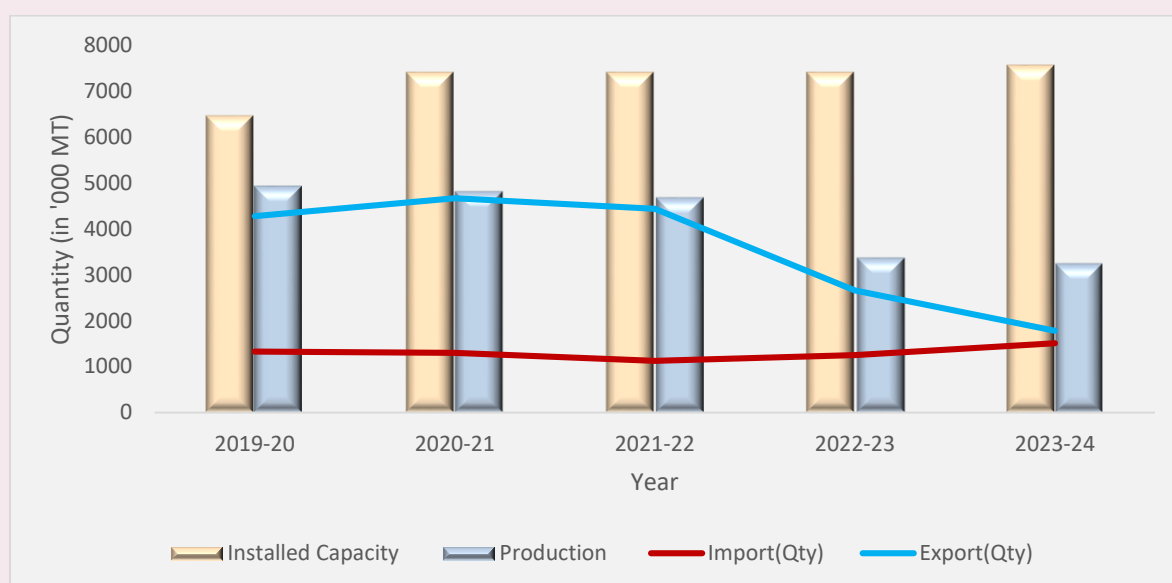
Aromatics

Table 8.31: -Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	6460	4925	1328	4271
2020-21	7404	4805	1300	4661
2021-22	7404	4677	1124	4435
2022-23	7404	3362	1246	2660
2023-24	7560	3237	1509	1775
CAGR (%)	4.0	-10.0	3.3	-19.7

Source: DCPC

Graph 8.27: - Installed Capacity, Production, Import & Export



The Aromatics chart shows a steady increase in installed capacity in FY 2019-20 to FY 2023-24, while production declined significantly over the same period. Import values showed slight growth in FY 2019-20 to FY 2023-24, while exports fluctuated but overall dropped sharply in FY 2019-20 to FY 2023-24. This indicates a weakening export performance despite growing production capacity and rising imports.

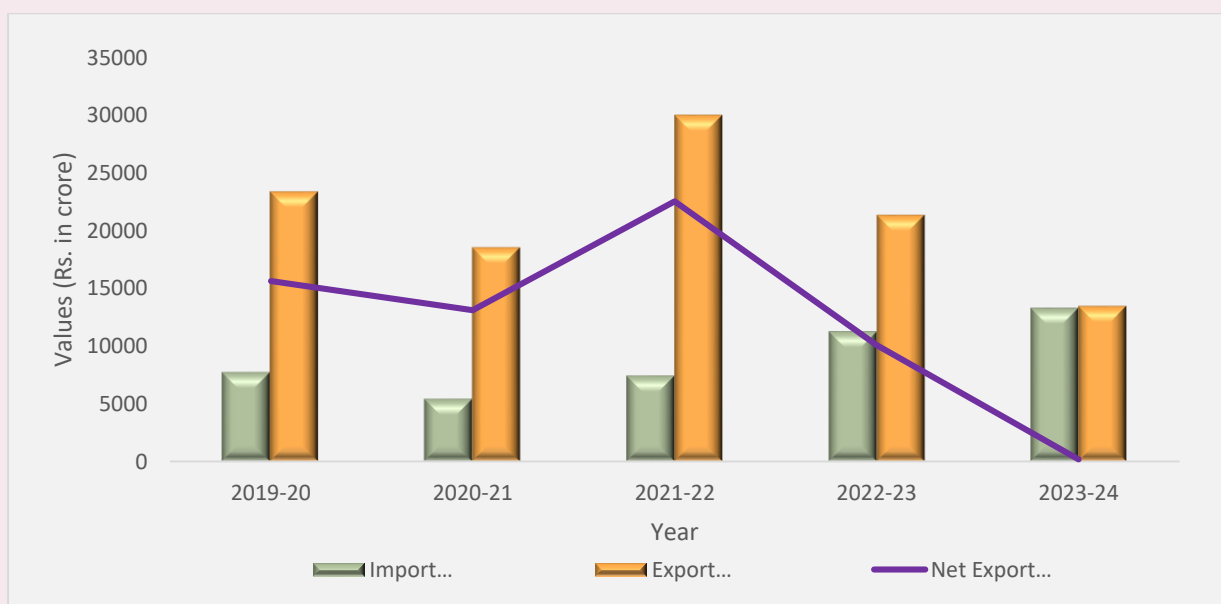
Aromatics

Table 8.32: -Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Import	Export	Net Export
2019-20	7728	23374	15646
2020-21	5421	18547	13126
2021-22	7425	29980	22555
2022-23	11237	21327	10090
2023-24	13274	13466	192
CAGR (%)	14.5	-12.9	-66.7

Source: DCPC

Graph 8.28: - Value of Import, Value of Export and Net Import



The import–export data from 2019–20 to 2023–24 reflects dynamic trade movements over the period. Imports increased at a CAGR of 14.5%, indicating growing domestic demand, while exports showed variability, reflecting shifts in global market conditions. Net exports remained positive in most years, demonstrating the country's capacity to maintain a favorable trade balance. Despite fluctuations in trade surplus, the data highlights opportunities for strengthening export performance and optimizing import patterns to sustain overall trade resilience.

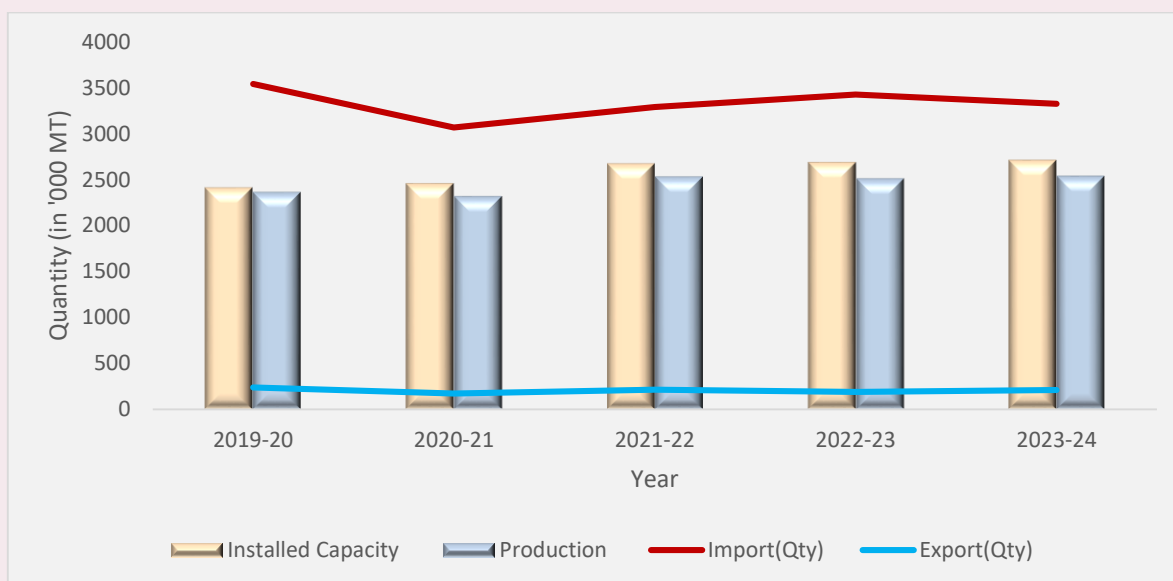
Other Petrochemicals

Table 8.33: -Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import (Qty)	Export (Qty)
2019-20	2413	2364	3543	238
2020-21	2458	2318	3069	171
2021-22	2677	2531	3291	212
2022-23	2691	2511	3426	189
2023-24	2714	2538	3327	209
CAGR (%)	3.0	1.8	-1.6	-3.2

Source: DCPC

Graph 8.29: - Installed Capacity, Production, Import & Export



The Other Petrochemicals industry chart shows a slight increase in installed capacity from FY 2019-20 to FY 2023-24, reflecting steady growth in production capacity. Production also rose moderately during the same period, although at a slower pace than installed capacity. Import values were consistently higher than exports, indicating a strong reliance on foreign sources, with imports showing a moderate increase in demand.

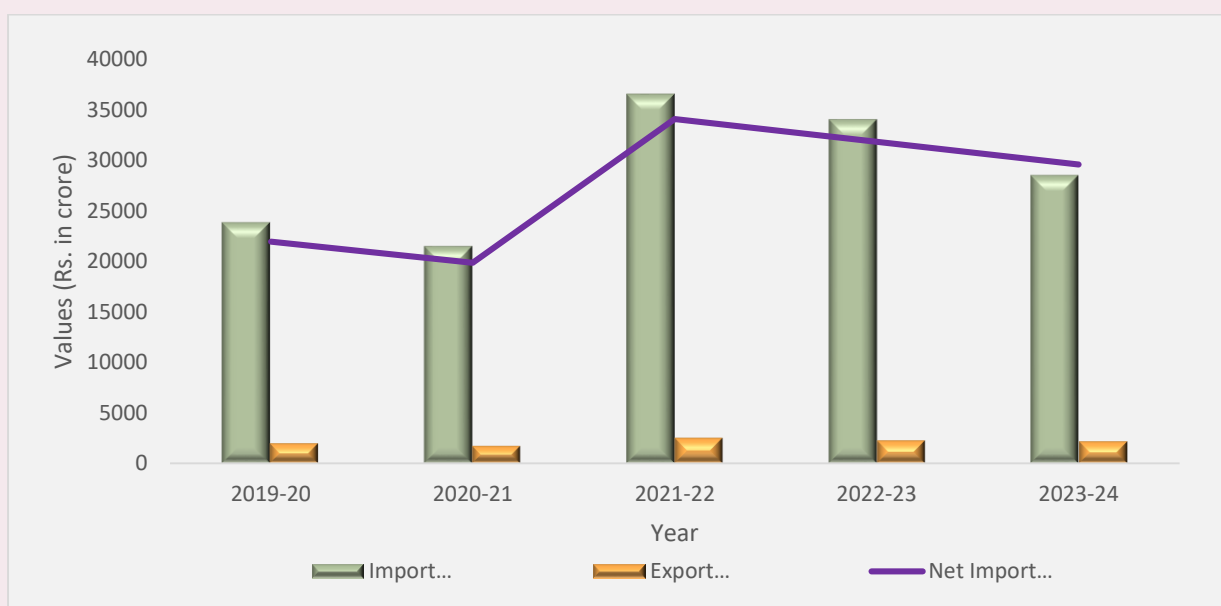
Other Petrochemicals

Table 8.34: -Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Import	Export	Net Import
2019-20	23883	1949	21934
2020-21	21521	1691	19829
2021-22	36564	2498	34066
2022-23	34043	2242	31802
2023-24	28522	2129	26393
CAGR (%)	4.5	2.2	7.7

Source: DCPC

Graph 8.30: - Value of Import, Value of Export and Net Import



The Other Petrochemicals chart shows a declining trend in import values from FY 2019-20 to FY 2020-21, followed by a peak in FY 2021-22, and then a decrease in FY 2023-24. Exports remained consistently low. Despite fluctuations in imports and exports, the net import values remained consistently high, peaking in FY 2021-22 and decreasing slightly in FY 2023-24. This sustained high net import indicates a continued dependency on imports for Other Petrochemicals.

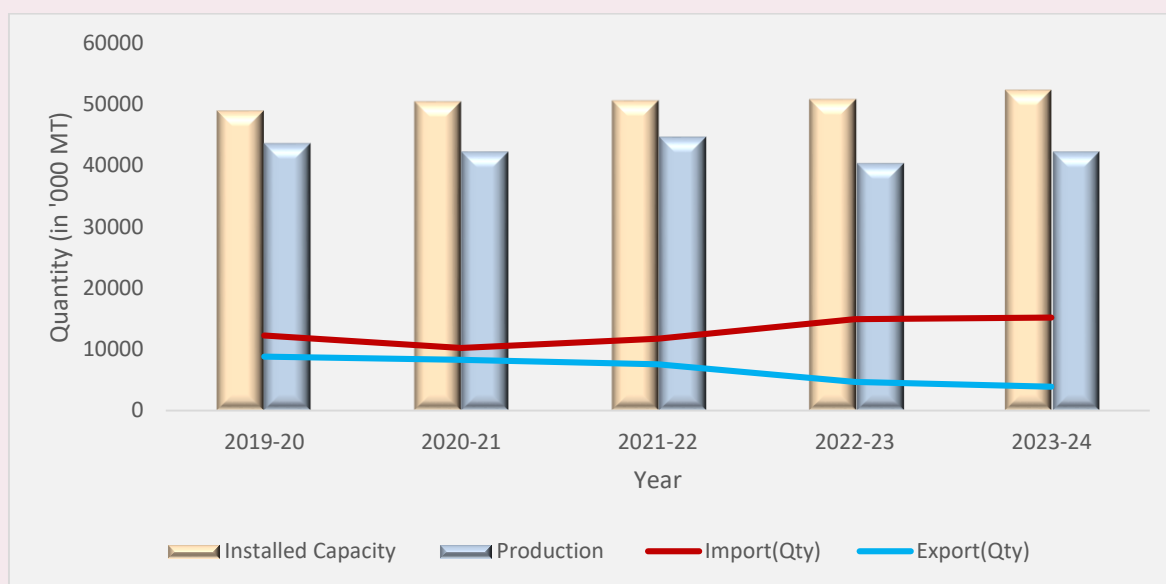
Total Major Petrochemicals

Table 8.35: -Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	48933	43524	12222	8798
2020-21	50439	42159	10211	8274
2021-22	50612	44589	11732	7535
2022-23	50779	40292	14890	4667
2023-24	52287	42161	15150	3851
CAGR (%)	1.7	-0.8	5.5	-18.7

Source: DCPC

Graph 8.31: - Installed Capacity, Production, Import & Export



The Total Major Petrochemicals sector experienced steady growth in installed capacity from FY 2019-20 to FY 2023-24. However, production showed a slight decline, dropping in FY 2019-20 to FY 2023-24, suggesting that capacity is not being fully utilized, possibly due to reduced demand or operational challenges. Import values increased, rising in FY 2019-20 to FY 2023-24, indicating a growing reliance on imports. Meanwhile, export values decreased sharply, from FY 2019-20 to FY 2023-24, highlighting a significant drop in export performance during the period. This suggests that while production capacity has expanded, trade dynamics have shifted, with reduced export activity and rising imports.

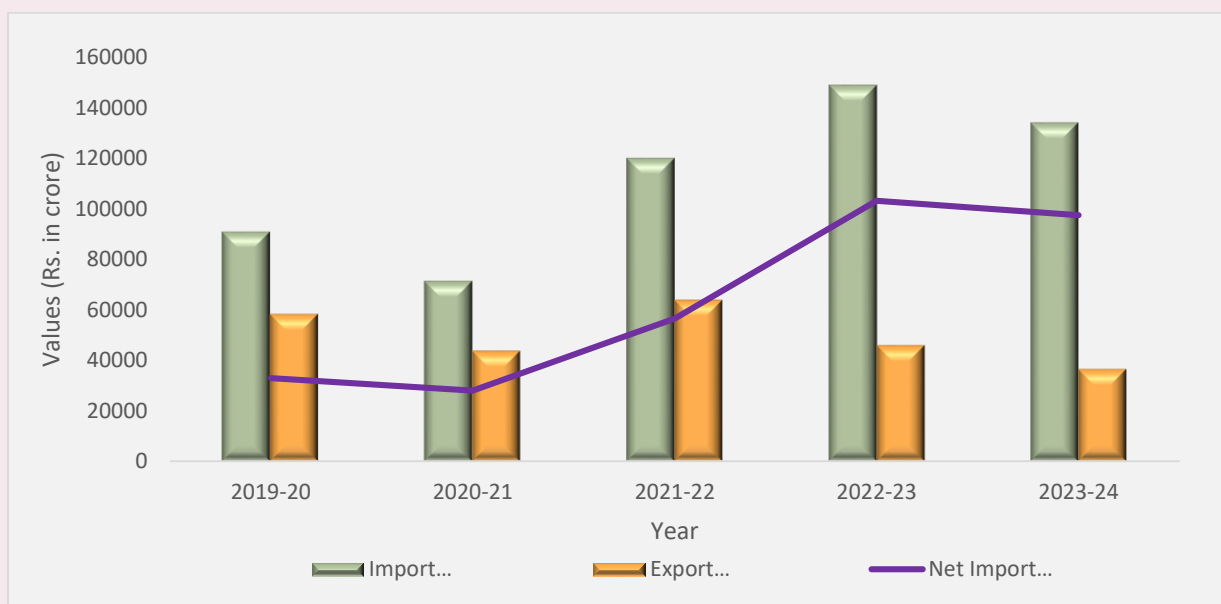
Total Major Petrochemicals

Table 8.36: -Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Import	Export	Net Import
2019-20	91013	58079	32934
2020-21	71596	43581	28015
2021-22	120093	63639	56455
2022-23	148869	45717	103152
2023-24	133924	36456	97468
CAGR (%)	10.1	-11.0	31.2

Source: DCPC

Graph 8.32: - Value of Import, Value of Export and Net Import



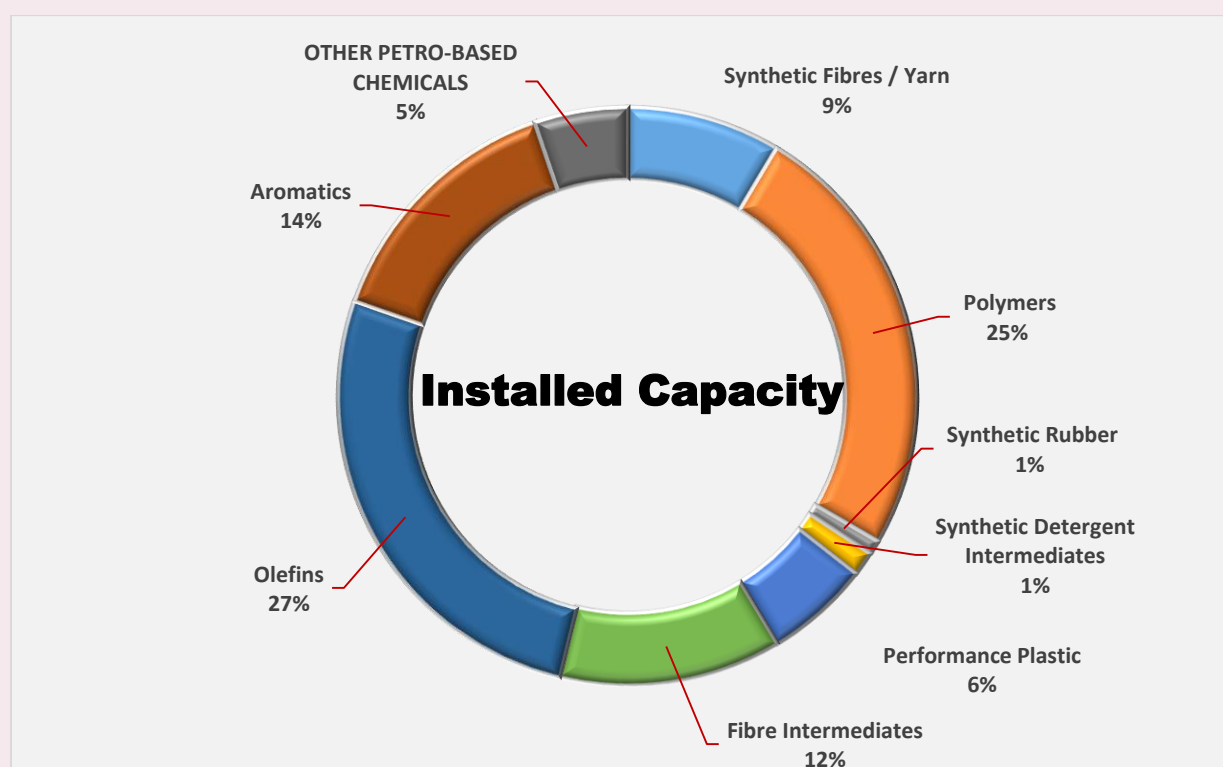
The Total Major Petrochemicals chart shows a steady increase in import values from FY 2019-20 to FY 2023-24. Conversely, export values have been on a decline, dropping in FY 2019-20 to FY 2023-24, indicating a sharp reduction in exports over the period. The net import values showed decrease in FY 2023-24 from previous FY. This suggests a growing dependence on imports for Major Petrochemicals, as net imports have consistently risen, highlighting an expanding trade deficit despite fluctuations in import and export quantities.

Table 8.37: -Installed capacity of different groups of Major Petrochemicals in the FY 2023-24

Groups	Installed Capacity (In 000'MT)
Synthetic Fibres / Yarn	4498
Polymers	12950
Synthetic Rubber	403
Synthetic Detergent Intermediates	722
Performance Plastic	3060
Fibre Intermediates	6500
Olefins	13880
Aromatics	7560
Other petro-based chemicals	2714

Source: DCPC

Pie Chart 8.5: - Share of different groups of Major Petrochemicals in installed capacity during 2023-24



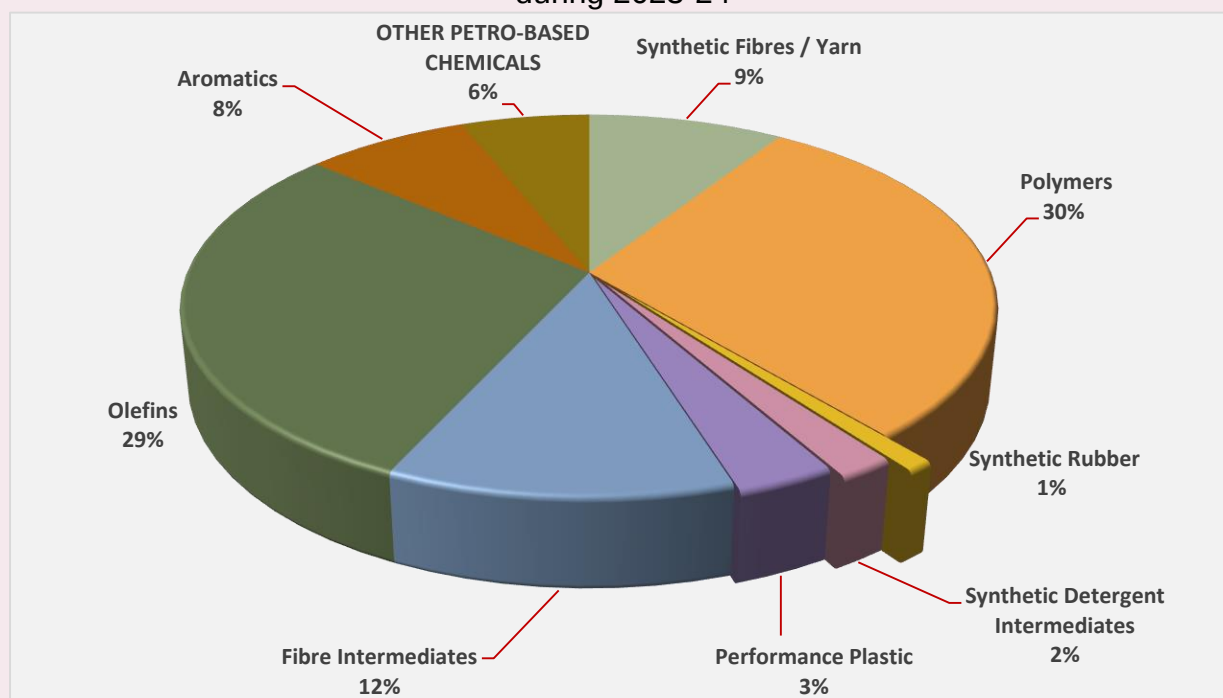
The graph above illustrates the distribution of installed capacity among major petrochemical groups for FY 2023-24. Olefins lead with the largest share, representing 27% of the total capacity, followed by Polymers at 25%. Aromatics account for 14%, Fiber Intermediates for 12%, and Synthetic Yarn for 9%. Performance Plastics make up 6%, Other Petro-Based Chemicals contribute 5%, and both Synthetic Rubber and Synthetic Detergent Intermediates each represent 1% of the total capacity.

Table 8.38: - Production of different groups of Major Petrochemicals in the FY 2023-24

Groups	Production (In 000'MT)
Synthetic Fibres / Yarn	3853
Polymers	12548
Synthetic Rubber	395
Synthetic Detergent Intermediates	808
Performance Plastic	1425
Fibre Intermediates	4956
Olefins	12401
Aromatics	3237
Other petro-based chemicals	2538

Source: DCPC

Pie Chart 8.6: - Share of different groups of Major Petrochemicals in production during 2023-24



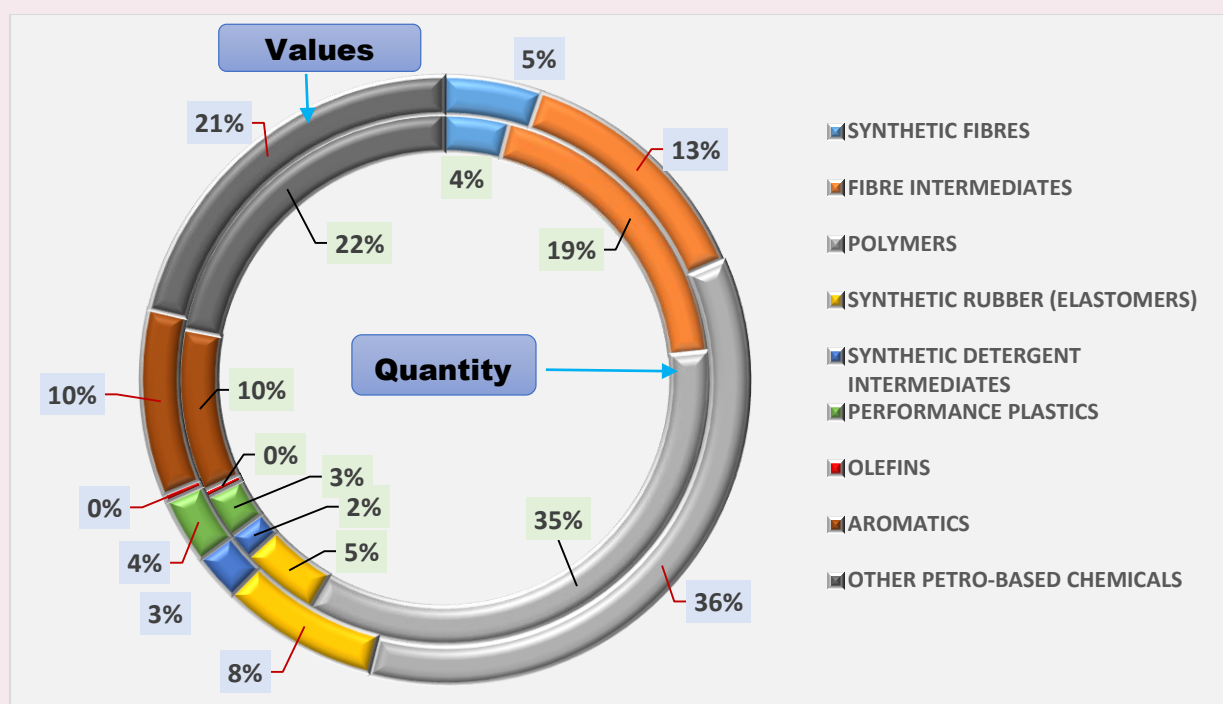
The graph above shows the production figures for major petrochemical groups in FY 2023-24. Polymers lead with the largest share, accounting for 30% of total production, followed closely by Olefins at 29%. Fiber Intermediates contribute 12%, Synthetic Yarn stands at 9%, Aromatics at 8%, and Other Petro-Based Chemicals make up 6%. Performance Plastics account for 3%, while Synthetic Rubber and Synthetic Detergent Intermediates each represent 1% and 2%, respectively, of the overall production.

Table 8.39: - Import quantity and value of different groups of Major Petrochemicals in the FY 2023-24

Groups	Qty (in MT)	Values (in Rs. Lakh)
Synthetic fibers	610796	704902
Fibre intermediates	2929291	1771593
Polymers	5312985	4757153
Synthetic rubber (elastomers)	723837	1112058
Synthetic detergent intermediates	251536	338928
Performance plastics	417879	470823
Olefins	68159	57346
Aromatics	1509211	1327413
Other petro-based chemicals	3326576	2852163

Source: DCPC

Pie Chart 8.7: - Share of different Groups of Major chemicals in import quantity and value during 2022-23



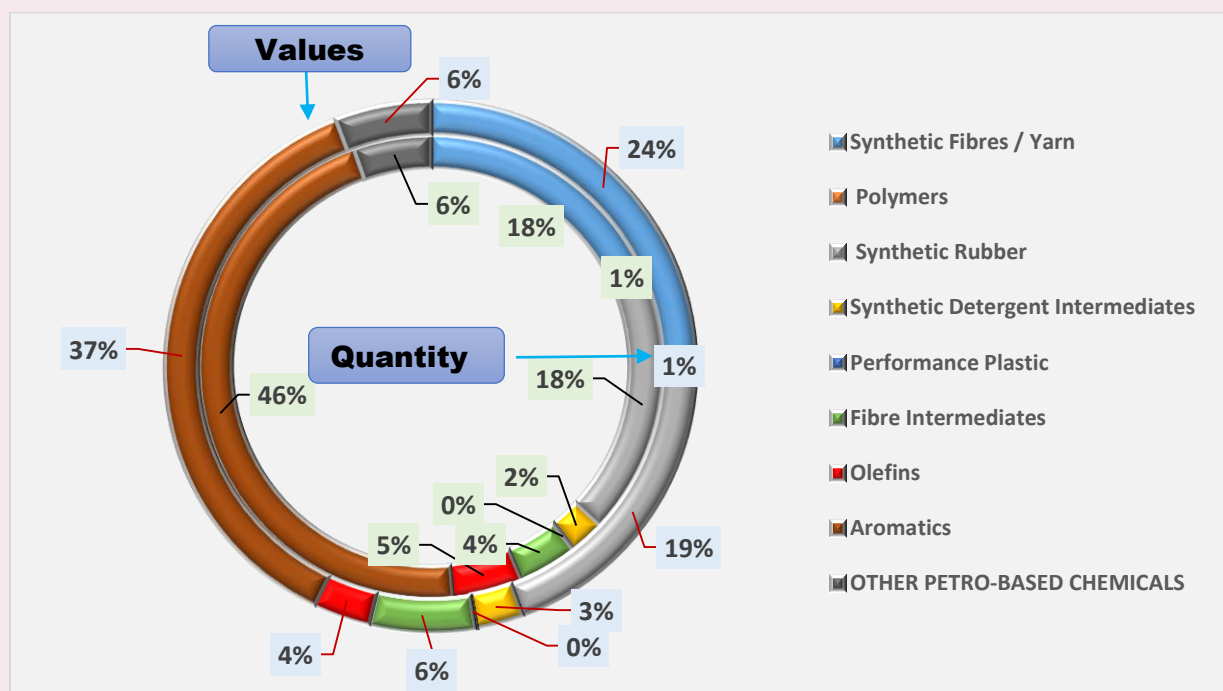
The graph above presents a bivariate analysis, highlighting two key attributes: Import Quantity and Value, for major chemical groups in FY 2023-24. Polymers lead with the highest share, comprising 35% of the total import quantity. Other Petro-based Chemicals and Fiber Intermediates follow with 22% and 19%, respectively. In terms of import value, Polymers make the largest contribution, representing 36% of the total import value. Other Petro-based Chemicals account for 21%, Fiber Intermediates for 13%, and Aromatics for 10% of the total import value.

Table 8.40: - Export quantity and value of different groups of Major Petrochemicals in the FY 2023-24

Groups	Qty (in MT)	Values (in Rs. Lakh)
Synthetic fibers	683488	889562
Fiber intermediates	35761	38224
Polymers	705293	689804
Synthetic rubber (elastomers)	92441	103915
Synthetic detergent intermediates	3686	5704
Performance plastics	157418	231371
Olefins	189106	127559
Aromatics	1774952	1346591
Other petro-based chemicals	208633	212881

Source: DCPC

Pie Chart 8.8: - Share of different groups of Major Petrochemicals in export Quantity and value during 2023-24



The graph depicted above provides a bivariate analysis of two crucial attributes: Import Quantity and Value, for major chemical groups during FY 2023–24. Aromatics play a substantial role, contributing 46% to the total import quantity and 37% to the import value. In the case of Synthetic Fibers/Yarn, the import quantity amounts to 18%, representing 24% of the total import value. Meanwhile, Synthetic Rubber constitutes 18% of the import quantity, contributing 19% to the total import value.

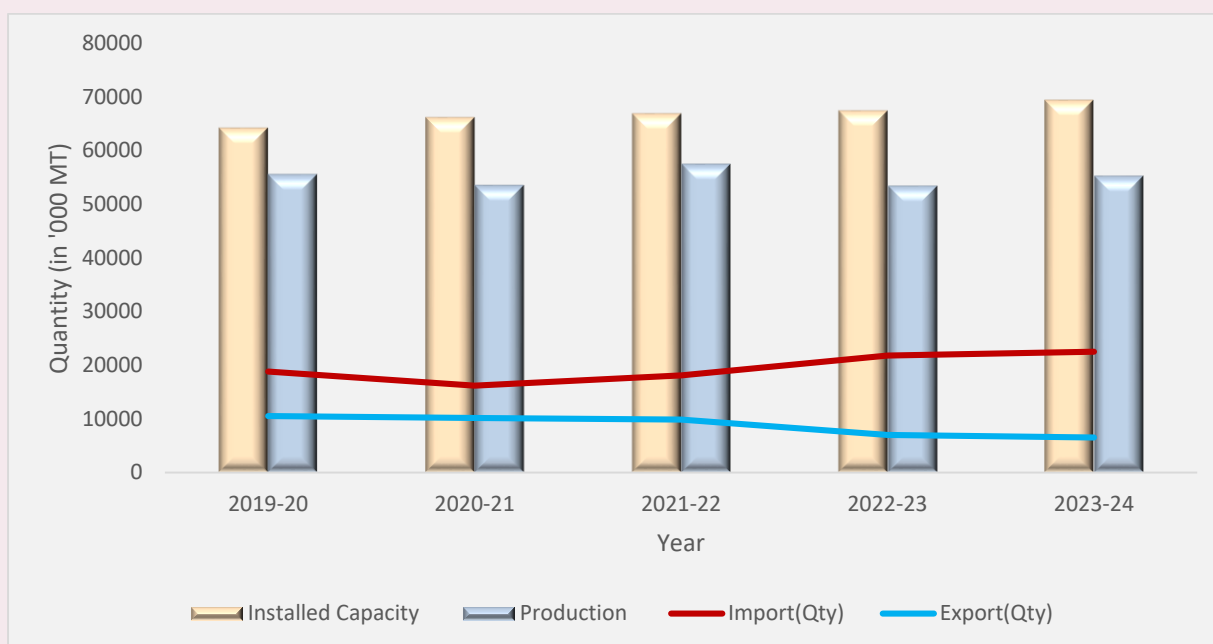
Total Major Chemicals and Petrochemicals

Table 8.41: -Installed Capacity, Production, Import & Export (in '000 MT)

Year	Installed Capacity	Production	Import(Qty)	Export(Qty)
2019-20	64093	55467	18780	10497
2020-21	66091	53402	16194	10179
2021-22	66790	57332	18117	9874
2022-23	67317	53331	21768	6981
2023-24	69308	55136	22484	6493
CAGR (%)	2.0	-0.1	4.6	-11.3

Source: DCPC

Graph 8.33: - Installed Capacity, Production, Import & Export



The graph showing Total Major Chemicals and Petrochemicals demonstrates consistent growth in installed capacity, with a Compound Annual Growth Rate (CAGR) of 2.0%. Meanwhile, production remains stable with minor fluctuations. However, the chart also indicates that imports surpass exports, highlighting a trade deficit in Total Major Chemicals and Petrochemicals. This suggests that the domestic market is increasingly reliant on imports to meet demand.

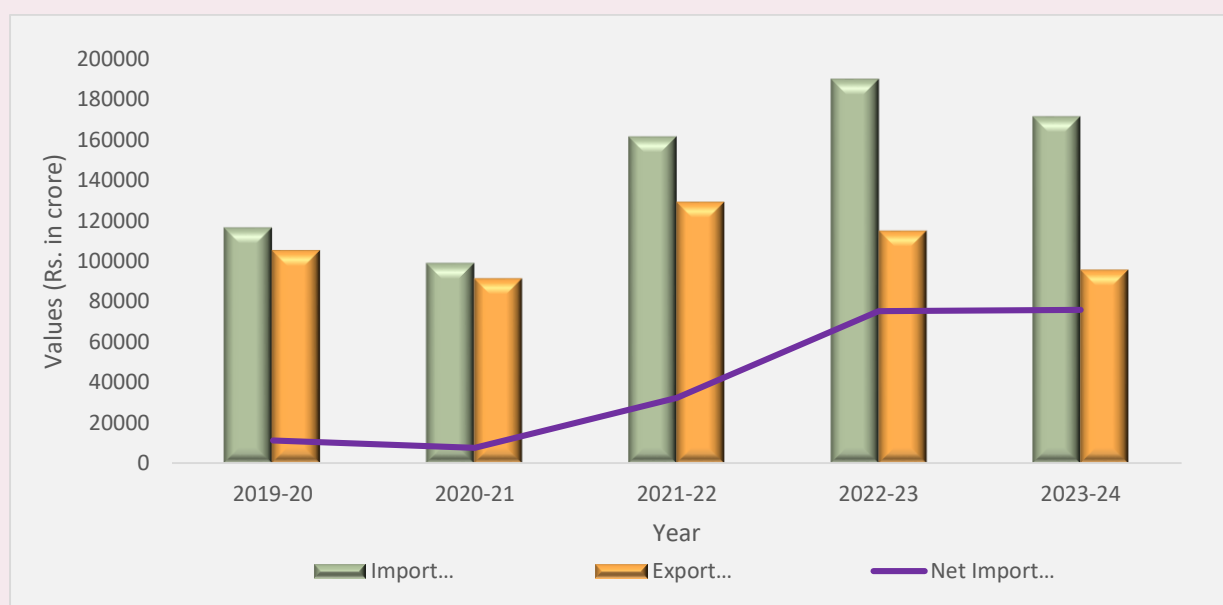
Total Major Chemicals and Petrochemicals

Table 8.42: -Value of Import, Value of Export and Net Import (Rs. in Crore)

Year	Imports	Exports	Net import
2019-20	116673	105392	11281
2020-21	99086	91516	7570
2021-22	161740	129435	32305
2022-23	190237	115047	75190
2023-24	171715	95837	75878
CAGR (%)	10.1	-2.3	61.0

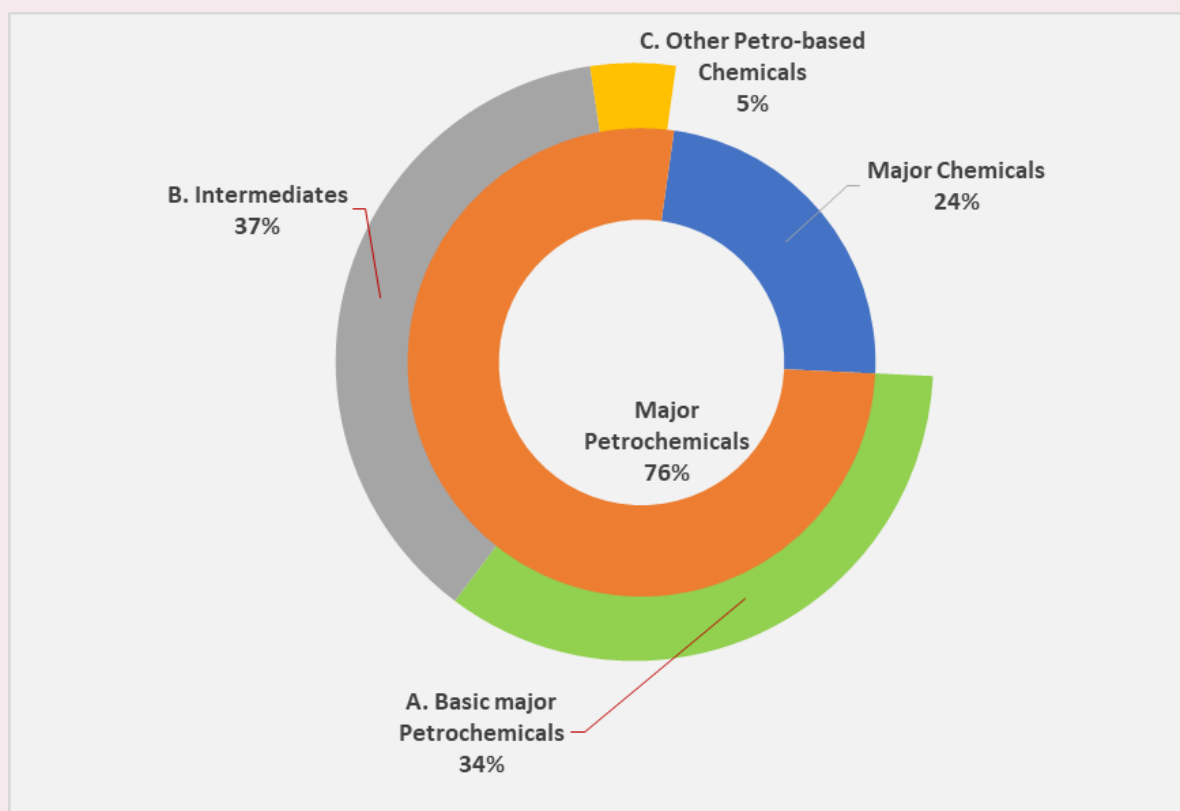
Source: DCPC

Graph 8.34: - Value of Import, Value of Export and Net Import



The import–export data from 2019–20 to 2023–24 demonstrates significant trade activity and responsiveness to changing economic conditions. Imports showed steady growth at a CAGR of 10.1%, reflecting sustained domestic demand and economic activity. Exports experienced a slight decline at a CAGR of -2.3%, indicating areas for enhancing external competitiveness. Net imports grew substantially at a CAGR of 61.0%, highlighting the economy’s increasing engagement with global trade and the opportunity to balance imports and exports through strategic trade initiatives. Overall, the data underscores a robust and dynamic trade performance over the review period.

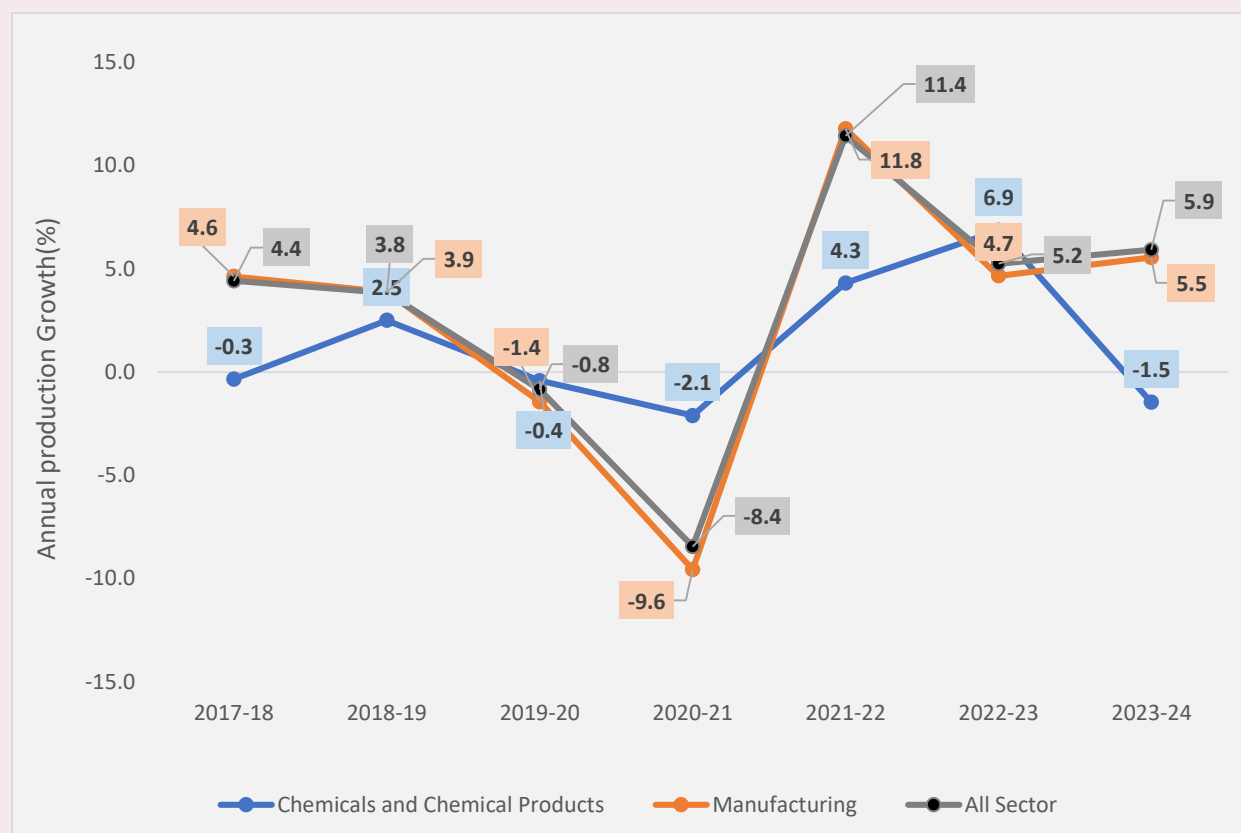
Pie Chart 8.9: - Production share of Chemicals and petrochemicals form the FY 2023-24



Source: DCPC

In the fiscal year 2023-24, the production breakdown is depicted in the graph above, with Major Chemicals comprising 24% and Major Petrochemicals constituting the remaining 76%. Furthermore, Major Petrochemicals can be divided into three subcategories: Basic Petrochemicals at 34%, Intermediates at 37%, and Other Petro-based Chemicals at 5%.

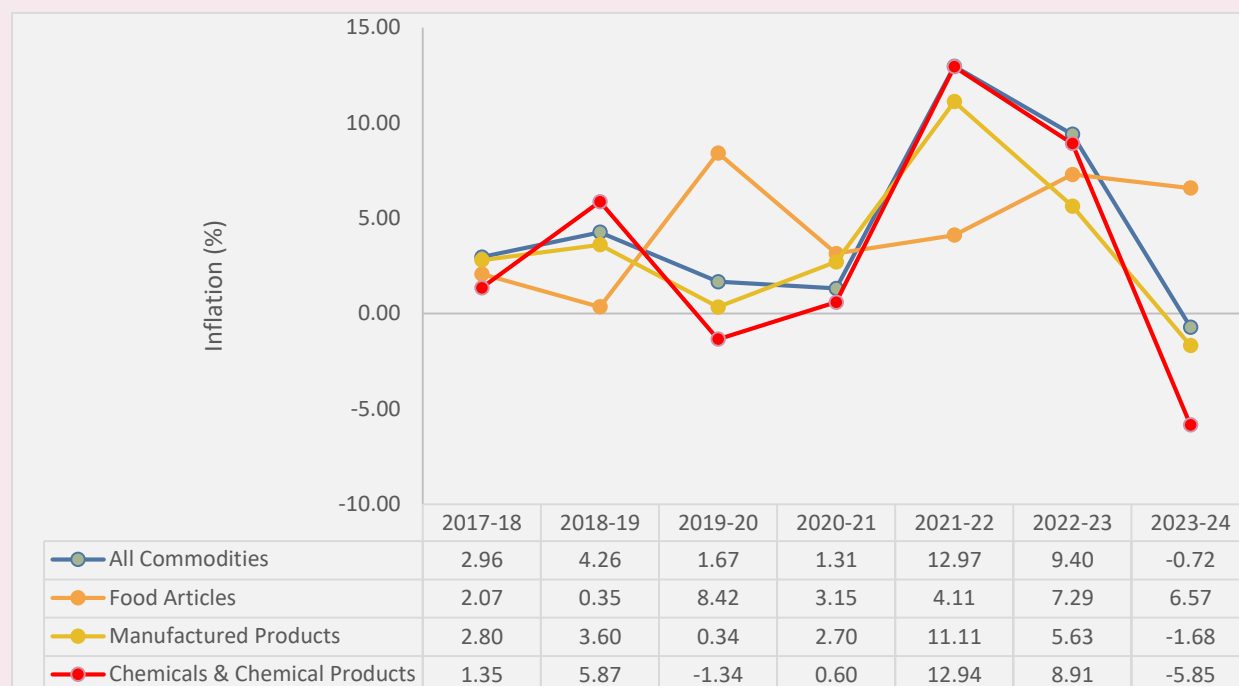
Graph 8.35: - Annual Production Growth (%) (Based on Index on Industrial Production with Base year: 2011-12)



Source: Ministry of Statistics and Programme Implementation

In the fiscal year 2023-24, the Index of Industrial Production (IIP) indicates an estimated annual growth rate of -1.5% in the manufacturing of Chemicals and Chemical Products, signifying a decline in production within this sector.

Graph 8.36: - Annual Inflation (%) (Based on Wholesale Price Index with base year: 2011-12)

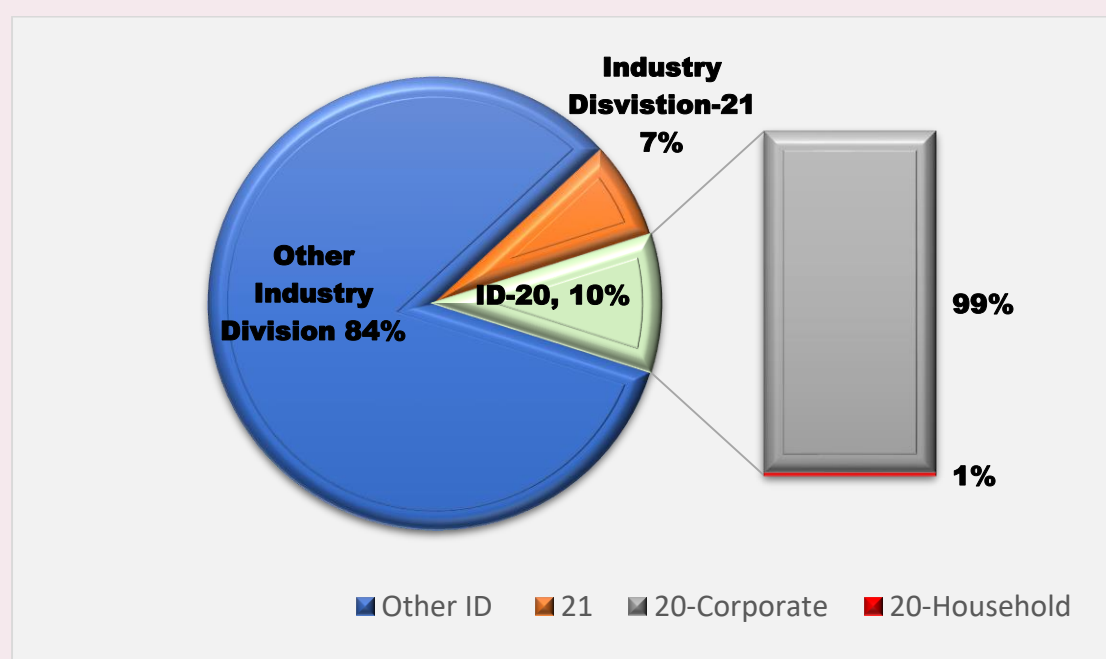


Source: Office of the Economic Advisor (<http://eaindustry.nic.in>)

Annual Inflation for Chemicals and Chemical Products in the FY 2023-24 is -5.85%

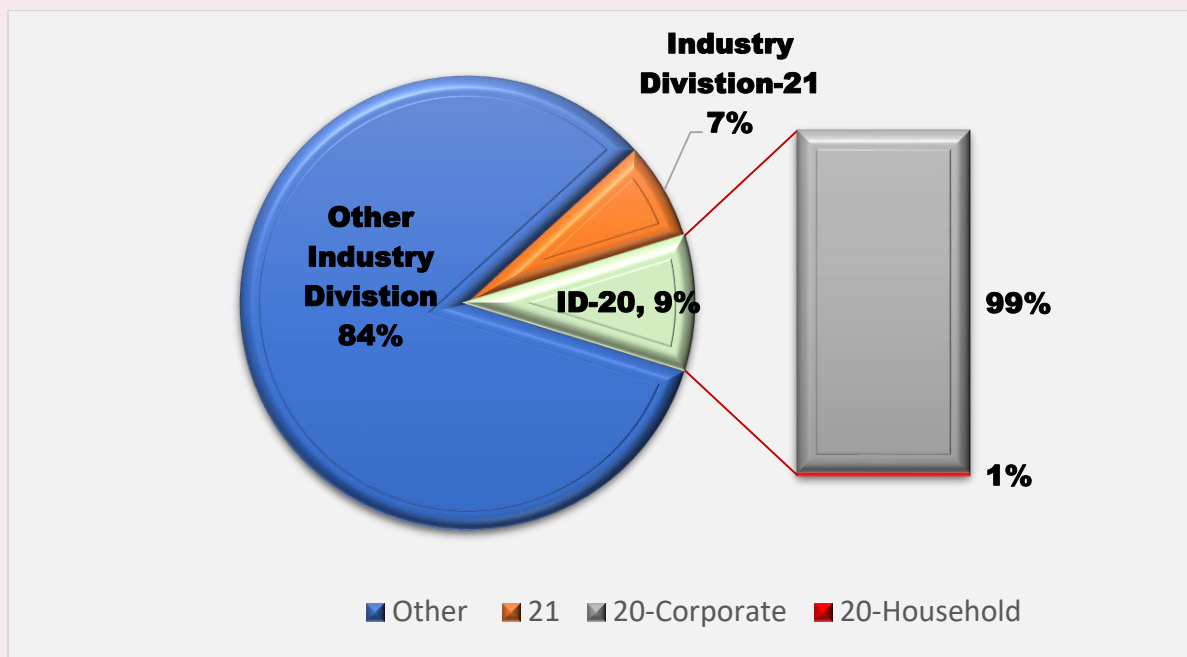
GVA of Manufacturing sector

A) FY 2022-23 (At current prices)



Pie Chart 8.10

B) FY 2022-23 At constant prices (Base year: 2011-12)



Pie Chart 8.11

Source: Ministry of Statistics & Programme Implementation.

Note: Industry Division (ID) 20 (NIC-2008): Chemical and Chemical products

Industry Division (ID) 21 (NIC-2008): Pharmaceutical; medicinal chemicals and botanical products.

Graph A illustrates the distribution of GVA (Gross Value Added) within the manufacturing sector at current prices for Industry divisions 21 and 20. Notably, Industry division 20, which encompasses Chemical and Chemical products, accounts for 10% of the total GVA in the manufacturing sector. Within Industry division 20, the corporate sector contributes a substantial 99% of the GVA

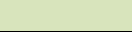
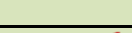
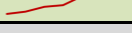
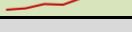
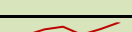
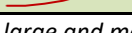
Graph B displays the distribution of Industry divisions 21 and 20 within the manufacturing sector at constant prices. Notably, Industry division 20 contributes 9% to the total GVA of the manufacturing sector. Within Industry division 20, the corporate sector accounts for a substantial 99% of the GVA.

Section - I

Chemical Sector

Table 1: Performance of Selected Major Chemicals (Group-Wise) during 2016-17 to 2023-24 at a Glance

(Figures in 000'MT)

Group	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Trend line	CAGR (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1. Alkali Chemicals										
Capacity	8822	9274	9422	10089	10473	10889	11100	11260		↑ 3.55
Production	7009	7631	8043	8457	7776	9041	9493	9234		↑ 4.02
Capacity Utilisation (%)	79.4	82.3	85.4	83.8	74.2	83.0	85.5	82.0		
Imports	1121	1194	1049	1157	968	767	713	1263		↑ 1.71
Exports	154	273	239	329	429	598	668	893		↑ 28.52
2. Inorganic Chemicals										
Capacity	1313	1315	1300	1538	1560	1575	1575	1650		↑ 3.32
Production	1053	1058	1064	1063	978	1052	1058	1137		↑ 1.11
Capacity Utilisation (%)	80.2	80.5	81.8	69.2	62.7	66.8	67.2	68.9		
Imports	1010	1229	1580	1532	1188	1345	1351	942		↓ -1.00
Exports	378	173	177	196	195	273	337	417		↑ 1.43
3. Organic Chemicals										
Capacity	2529	2535	2575	2671	2716	2800	2905	3076		↑ 2.84
Production	1638	1799	1884	1847	1906	1953	1912	1983		↑ 2.76
Capacity Utilisation (%)	64.8	71.0	73.2	69.1	70.2	69.7	65.8	64.5		
Imports	3170	3407	3645	3775	3716	4160	4701	5018		↑ 6.78
Exports	190	205	233	245	296	310	304	301		↑ 6.76
4. Pesticides (Tech.)										
Capacity	322	325	324	334	371	380	389	444		↑ 4.71
Production	214	213	217	192	255	299	258	280		↑ 3.94
Capacity Utilisation (%)	66.5	65.4	66.9	57.6	68.7	78.8	66.4	63.1		
Imports	43	44	49	43	66	60	67	62		↑ 5.51
Exports	342	358	405	398	471	568	540	539		↑ 6.69
5. Dyes & Pigments										
Capacity	471	478	492	528	532	533	570	590		↑ 3.29
Production	320	367	382	384	327	398	318	345		↑ 1.05
Capacity Utilisation (%)	68.1	76.8	77.6	72.8	61.6	74.7	55.8	58.4		
Imports	56	63	56	51	45	54	45	50		↓ -1.68
Exports	419	486	525	530	514	591	465	493		↑ 2.33
Total Major Chemicals (1 to 5)										
Capacity	13456	13927	14112	15160	15652	16178	16538	17021		↑ 3.41
Production	10234	11069	11589	11943	11243	12743	13039	12979		↑ 3.45
Capacity Utilisation (%)	76.1	79.5	82.1	78.8	71.8	78.8	78.8	76.3		
Imports	5400	5937	6379	6557	5983	6385	6878	7334		↑ 4.47
Exports	1484	1496	1579	1698	1905	2339	2313	2642		↑ 8.59

Note: 1. Production and Installed Capacity data based on MPRs received from manufacturer of chemicals under large and medium scale units only monitored by S&M Division of DCPC.

2. Data Source in respect of imports and exports is DGCIS, Kolkata, M/o Commerce and Industry.

Table 1A: Projection of Production, Installed Capacity, Export and Import of Selected Major Chemical (Group-wise) from the year 2024-25 to 2029-30

(Figures in 000'MT)

Group	Actual Values						Forecast Values					
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1. Alkali Chemicals												
Capacity	9422	10089	10473	10889	11100	11260	11803	12050	12341	12639	12984	13321
Production	8043	8457	7776	9041	9493	9234	9707	10059	10533	10641	10944	11369
Capacity Utilisation (%)	85.4	83.8	74.2	83.0	85.5	82.0	82.2	83.5	85.4	84.2	84.3	85.3
Imports	1049	1157	968	767	713	1263	940	942	1026	1108	1125	1057
Exports	239	329	429	598	668	893	971	1115	1257	1389	1533	1652
2. Inorganic Chemicals												
Capacity	1300	1538	1560	1575	1575	1650	1721	1722	1766	1814	1863	1895
Production	1064	1063	978	1052	1058	1137	1101	1133	1177	1191	1214	1228
Capacity Utilisation (%)	81.8	69.2	62.7	66.8	67.2	68.9	64.0	65.8	66.6	65.6	65.2	64.8
Imports	1580	1532	1188	1345	1351	942	966	864	793	624	504	454
Exports	177	196	195	273	337	417	436	502	570	623	676	730
3. Organic Chemicals												
Capacity	2575	2671	2716	2800	2905	3076	3120	3224	3341	3448	3547	3638
Production	1884	1847	1906	1953	1912	1983	1987	2020	2035	2056	2090	2104
Capacity Utilisation (%)	73.2	69.1	70.2	69.7	65.8	64.5	63.7	62.7	60.9	59.6	58.9	57.8
Imports	3645	3775	3716	4160	4701	5018	5178	5570	5988	6293	6584	6932
Exports	233	245	296	310	304	301	334	344	346	356	372	385
4. Pesticides (Tech.)												
Capacity	324	334	371	380	389	444	451	476	497	525	550	568
Production	217	192	255	299	258	280	306	326	327	336	360	372
Capacity Utilisation (%)	66.9	57.6	68.7	78.8	66.4	63.1	67.9	68.4	65.7	64.0	65.5	65.5
Imports	49	43	66	60	67	62	71	75	74	79	81	86
Exports	405	398	471	568	540	539	606	642	657	674	716	749
5. Dyes & Pigments												
Capacity	492	528	532	533	570	590	603	618	641	662	677	695
Production	382	384	327	398	318	345	328	319	316	295	299	284
Capacity Utilisation (%)	77.6	72.8	61.6	74.7	55.8	58.4	54.4	51.6	49.4	44.6	44.3	40.9
Imports	56	51	45	54	45	50	46	46	46	44	45	43
Exports	525	530	514	591	465	493	491	476	459	433	441	420
Total Major Chemicals (1 to 5)												
Capacity	14112	15160	15652	16178	16538	17021	17697	18090	18585	19088	19620	20117
Production	11589	11943	11243	12743	13039	12979	13430	13856	14388	14519	14907	15357
Capacity Utilisation (%)	82.1	78.8	71.8	78.8	78.8	76.3	75.9	76.6	77.4	76.1	76.0	76.3
Imports	6379	6557	5983	6385	6878	7334	7200	7498	7927	8147	8340	8571
Exports	1579	1698	1905	2339	2313	2642	2839	3078	3289	3474	3738	3936

Note: 1. Production and Installed Capacity data based on MPRs received from manufacturer under large and medium scale units only monitored by S&M Division of DCPC.

2. Data Source in respect of imports and exports is DGCIS, Kolkata, M/o Commerce and Industry.

3. \$ Imports and Exports includes both technical and formulations.

4. Projected figures have been calculated by using Linear regression in MS Excel. ($Y=aX+b$)

Table 2: Production, Installed Capacity & Growth of Selected Major Chemicals (Group-wise) during 2016-17 to 2023-24

(Figures in 000'MT)

Groups	Installed Capacity			Production / Growth Rate	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
	2021-22	2022-23	2023-24									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Alkali Chemicals	10889	11100	11260	Production	7009	7631	8043	8457	7776	9041	9493	9234
				Growth Rate (%)	3.0	8.9	5.4	5.1	-8.0	16.3	5.0	-2.7
Inorganic Chemicals	1575	1575	1650	Production	1053	1058	1064	1063	978	1052	1058	1137
				Growth Rate (%)	5.1	0.5	0.5	0.0	-8.1	7.6	0.6	7.5
Organic Chemicals	2800	2905	3076	Production	1638	1799	1884	1847	1906	1953	1912	1983
				Growth Rate (%)	3.1	9.8	4.8	-2.0	3.2	2.5	-2.1	3.7
Pesticides	380	389	444	Production	214	213	217	192	255	299	258	280
				Growth Rate (%)	14.0	-0.5	1.9	-11.3	32.8	17.3	-13.8	8.5
Dyes & Pigments	533	570	590	Production	320	367	382	384	327	398	318	345
				Growth Rate (%)	5.3	14.7	3.9	0.7	-14.8	21.5	-20.1	8.4

Note: Production and Installed Capacity data based on MPRs received from manufacturer of chemicals under large and medium scale units only monitored by S&M Division of DCPC.

Table 3: Production, Capacity Utilization & Growth of Major Chemicals (Product-wise) during 2016-17 to 2023-24

(Figures in 000'MT)

Major Groups / Products	Installed Capacity			Production								CAGR (%)	Capacity Utilization in 2023-24 (%)
	2021-22	2022-23	2023-24	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1. Alkali Chemicals													
SODA ASH	3614	3714	3714	2613	2990	3048	3069	2638	3079	3219	2976	↑ 1.9	80.1
CAUSTIC SODA	4151	4227	4304	2594	2742	2925	3137	2964	3463	3604	3618	↑ 4.9	84.1
LIQUID CHLORINE	3124	3158	3242	1801	1899	2069	2250	2174	2499	2669	2640	↑ 5.6	81.4
Total	10889	11100	11260	7009	7631	8043	8457	7776	9041	9493	9234	↑ 4.0	82.0
2. Inorganic Chemicals													
ALUMINIUM FLOURIDE	25.6	25.6	25.6	8.1	7.5	5.7	5.1	3.7	8.9	5.3	5.4	↓ -5.7	21.0
CALCIUM CARBIDE	112.0	112.0	112.0	85.0	87.3	83.2	81.3	86.8	98.6	83.4	80.1	↓ -0.8	71.5
CARBON BLACK	696.0	696.0	771.0	535.3	530.4	546.4	500.1	384.8	456.5	447.0	484.4	↓ -1.4	62.8
POTASSIUM CHLORATE	28.6	28.6	28.6	0.0	0.3	0.7	16.2	17.1	17.7	14.2	17.1	↑ 182.2	59.8
SODIUM CHLORATE	22.3	22.3	22.3	0.0	0.0	0.0	0.0	17.9	21.1	23.2	21.5		96.3
TITANIUM DIOXIDE	82.5	82.5	82.5	58.5	57.8	57.1	49.5	51.2	57.0	46.8	54.0	↓ -1.1	65.5
RED PHOSPHORUS	1.7	1.7	1.2	0.8	0.9	1.0	1.0	1.1	1.1	1.2	1.1	↑ 5.5	94.6
HYDROXEN PEROXIDE	221.8	221.3	222.3	148.9	157.0	156.5	122.8	139.9	143.5	184.4	188.1	↑ 3.4	84.6
POTASSIUM IODATE	1.2	1.2	1.2	0.0	0.0	0.0	0.6	0.5	0.6	0.5	0.5		43.8
CALCIUM CARBONATE	383.5	383.5	383.5	216.3	217.2	213.3	286.8	274.8	246.8	252.4	285.1	↑ 4.0	74.3
Total	1575.2	1574.7	1650.2	1052.9	1058.5	1063.8	1063.5	977.8	1051.8	1058.4	1137.3	↑ 1.1	68.9
3. Organic Chemicals													
ACETIC ACID	142.0	165.5	165.5	158.5	157.1	153.8	167.9	154.8	166.6	165.5	164.3	↑ 0.5	99.3
ACETIC ANHYDRIDE	119.2	124.7	112.7	94.8	97.1	95.5	74.1	75.1	78.4	97.9	69.1	↓ -4.4	61.3
ACETONE	47.1	47.1	47.1	26.8	32.9	40.7	36.3	39.0	36.1	34.0	29.6	↑ 1.4	62.8
PHENOL	76.8	76.8	76.8	43.6	53.4	65.4	57.9	61.3	58.2	55.0	47.5	↑ 1.2	61.9
METHANOL	474.3	474.3	660.3	177.0	260.5	271.9	176.0	234.0	167.7	69.3	183.2	↑ 0.5	27.7
FORMALDEHYDE	451.8	435.3	439.7	244.2	248.2	226.6	260.4	244.7	293.1	301.1	313.1	↑ 3.6	71.2
NITROBENZENE	126.5	126.5	129.5	69.7	71.4	68.8	61.1	76.1	82.8	64.5	82.2	↑ 2.4	63.5
MALEIC ANHYDRIDE	7.7	7.7	7.7	3.5	3.3	4.6	5.0	5.4	6.3	6.9	6.5	↑ 9.1	84.7
PENTAERYTHRITOL	17.4	17.4	17.4	14.0	14.1	15.0	15.2	11.7	16.3	15.6	14.4	↑ 0.4	82.7
ANILINE	54.1	54.1	54.1	41.5	41.9	37.9	25.4	33.5	39.7	22.2	30.3	↓ -4.4	56.1
CHLORO METHANES	346.0	438.5	435.8	221.5	222.4	285.5	296.9	327.0	340.8	411.6	386.8	↑ 8.3	88.8
ISOBUTYLBENZENE	16.8	16.8	16.8	6.9	9.0	9.7	9.4	12.7	8.5	9.6	9.7	↑ 4.9	57.6
ONCB	30.0	30.0	30.0	22.6	24.9	23.7	19.8	23.3	26.7	27.1	25.4	↑ 1.7	84.8
PNCB	48.4	48.4	48.4	34.2	37.8	36.1	31.9	38.9	43.7	46.2	42.6	↑ 3.2	88.1
MEK	10.0	10.0	10.0	6.5	6.4	7.0	9.8	8.0	8.9	8.3	8.0	↑ 2.9	80.0
ACETALDEHYDE	152.0	152.0	155.0	60.5	65.7	61.9	77.1	56.0	72.5	77.7	64.2	↑ 0.9	41.4
ETHANOLAMINES	27.0	27.0	27.0	13.1	13.2	16.7	15.4	16.7	21.0	19.7	22.4	↑ 8.0	83.0
ETHYL ACETATE	575.1	575.1	564.3	371.3	411.5	440.6	473.4	453.1	445.4	438.3	439.6	↑ 2.4	77.9

Major Groups / Products	Installed Capacity			Production								CAGR (%)	Capacity Utilization in 2023-24 (%)
	2021-22	2022-23	2023-24	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
MENTHOL	33.7	33.7	33.7	14.5	13.7	6.2	7.4	7.5	10.3	6.4	6.7	↓ -10.6	19.8
ORTHO NITRO TOLUENE	44.8	44.8	44.8	13.8	14.4	16.9	26.0	27.7	29.9	34.9	37.1	↑ 15.2	82.7
Total	2800.5	2905.4	3076.2	1638.4	1798.9	1884.4	1846.6	1906.3	1953.0	1911.5	1982.7	↑ 2.8	64.5
4. Pesticides and Insecticides													
D.D.T.	6.3	6.3	5.0	2.3	1.3	1.4	1.1	0.6	0.7	0.3	0.0	↓ -51.6	0.3
MALATHION	3.8	3.8	5.8	2.3	3.3	4.4	3.8	3.8	3.3	2.8	2.9	↑ 3.8	50.9
DIMETHOATE	1.5	1.5	1.5	1.4	1.2	1.3	1.4	1.5	1.4	1.0	1.0	↓ -4.7	67.7
D.D.V.P.	33.6	33.6	24.9	8.1	8.1	9.1	0.0	0.9	0.4	0.0	0.0	↓ -100.0	0.0
QUINALPHOS	3.4	3.4	2.0	1.3	1.2	0.9	0.9	1.1	2.5	0.6	0.7	↓ -7.9	36.6
MONOCROTOPHOS	13.9	13.9	21.2	6.6	5.5	5.3	5.8	7.9	7.5	5.1	11.9	↑ 8.8	56.0
PHOSPHAMIDON	2.0	2.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	↓ -100.0	
PHORATE	6.6	6.6	0.0	5.9	7.0	5.8	0.0	0.0	0.0	0.0	0.0	↓ -100.0	
ETHION	2.8	2.8	2.8	2.1	2.4	1.3	2.1	2.2	2.8	2.3	2.6	↑ 3.2	93.8
FENVALERATE	5.0	5.0	4.9	0.5	0.7	0.7	0.7	0.5	0.7	0.5	0.5	↓ -1.9	9.5
CYPERMETHRIN	24.7	26.8	44.8	7.9	8.2	11.0	10.9	12.3	16.5	10.9	8.6	↑ 1.2	19.1
ACEPHATE	20.5	20.5	51.3	16.3	18.3	19.6	21.1	29.6	29.6	33.4	37.4	↑ 12.6	72.9
CHLORPYRIPHOS	13.4	13.4	10.9	5.9	8.0	7.1	6.5	8.5	7.6	8.5	7.8	↑ 4.1	71.5
TRIAZOPHOS	3.4	3.4	1.0	2.4	1.5	0.9	0.0	0.0	0.0	0.0	0.0	↓ -100.0	0.0
TEMEPHOS	0.3	0.3	0.5	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	↑ 6.1	25.7
DELTAMETHRIN	0.9	1.0	1.1	0.4	0.6	0.7	0.7	0.6	0.7	0.7	0.6	↑ 7.9	59.1
ALPHAMETHRIN	0.6	0.6	0.6	0.1	0.3	0.3	0.4	0.5	0.5	0.5	0.2	↑ 12.3	35.2
PROFENOFOS TECHNICAL	17.3	17.4	19.6	10.5	9.9	12.5	12.4	16.1	16.2	16.1	15.1	↑ 5.4	77.1
PRETILACHLOR TECHNICAL	4.2	4.5	4.6	2.6	3.6	3.6	3.1	3.6	3.2	3.5	2.0	↓ -3.6	43.3
LAMBDA CYHALOTHRIN	3.2	3.8	10.9	0.7	1.1	0.6	2.3	1.7	2.7	3.1	2.0	↑ 15.2	18.3
PHENTHOATE	0.9	0.9	1.4	1.1	1.3	1.5	1.4	1.3	1.8	1.8	1.6	↑ 4.9	114.3
PERMETHRIN TECH	1.8	1.9	1.9	1.1	1.5	1.9	1.2	1.7	2.5	3.6	2.5	↑ 12.1	128.5
IMIDACALOPRID TECH	0.2	0.2	0.2	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	↓ -26.6	10.0
CAPTAN & CAPTAFOL	3.4	3.4	3.4	1.8	1.8	1.9	1.5	1.5	1.9	1.6	0.9	↓ -9.5	25.9
ZIRAM(THIO BARBAMATE)	0.7	0.7	0.3	0.6	0.7	0.8	0.6	0.9	0.7	0.6	0.7	↑ 3.0	235.8
CARBENDZIM(BAVISTIN)	0.8	0.8	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	↓ -100.0	0.0
MANCOZAB	121.8	121.8	132.0	78.5	70.2	69.3	60.9	97.4	118.7	83.6	107.4	↑ 4.6	81.4
HEXACONAZOLE	2.8	3.5	3.5	0.5	0.6	0.5	0.8	0.8	1.3	0.6	0.8	↑ 8.9	24.3
METCONAZOLE	0.5	0.5	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.3	0.3	↓ -2.4	59.6
2, 4-D	30.0	30.0	32.0	23.4	25.8	24.2	22.6	27.1	40.0	42.0	35.1	↑ 6.0	109.8
BUTACHLOR	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
ETHOFUMESATE TECHNICAL	1.7	2.0	2.0	1.0	1.3	1.0	0.8	0.4	0.7	0.9	0.8	↓ -3.8	39.1
THIAMETHOXAM TECHNICAL	5.1	6.3	5.8	2.5	3.3	5.6	6.2	5.2	6.6	6.4	5.1	↑ 10.5	86.9

Major Groups / Products	Installed Capacity			Production								CAGR (%)	Capacity Utilization in 2023-24 (%)
	2021-22	2022-23	2023-24	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
PENDIMETHALIN	6.6	7.4	4.9	4.0	3.8	2.8	2.8	3.6	4.8	4.7	4.6	↑ 2.0	94.8
METRIBUZIN	2.9	3.8	3.8	1.1	0.9	1.9	2.6	3.2	2.0	2.3	2.0	↑ 9.0	53.2
TRICLOPYR ACID TECH	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.4	0.2	0.2	↓ -3.9	71.0
ISOPROTURON	6.0	6.0	6.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	↓ -100.0	0.0
GLYPHOSATE	12.9	12.9	9.6	6.4	6.3	6.7	5.9	6.1	5.7	4.7	4.9	↓ -3.5	51.4
DIURON	6.0	6.0	6.0	3.7	3.3	3.6	3.4	3.4	2.3	3.5	4.4	↑ 2.5	73.0
ATRAZIN	1.2	2.4	3.0	1.9	2.2	1.5	1.7	1.6	1.7	3.1	5.2	↑ 15.6	174.1
ZINC PHOSPHIDE	1.9	1.9	2.5	1.3	1.4	1.3	1.3	1.5	2.0	1.5	2.0	↑ 6.6	80.5
ALUMINIUM PHOSPHIDE	4.7	4.7	11.0	6.4	4.8	4.9	4.9	7.6	9.9	7.4	8.0	↑ 3.3	72.6
DICOFOL	0.2	0.2	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	↓ -100.0	
Total	380.1	388.6	443.7	213.7	212.7	216.7	192.1	255.1	299.3	258.1	280.1	↑ 3.9	63.1
5. Dyes and Pigments													
AZO DYES	21.1	18.9	17.7	10.0	11.0	9.0	8.5	6.6	9.1	7.6	6.5	↓ -6.0	36.6
ACID DIRECT DYES(OTHER THAN AZO)	40.9	46.0	46.0	19.9	21.2	24.1	22.7	20.2	24.0	21.2	24.8	↑ 3.2	54.0
DISPERSE DYES	77.9	92.3	90.4	41.4	46.7	55.2	61.9	51.8	65.9	60.4	65.4	↑ 6.8	72.3
INGRAIN DYES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
OIL SOLUBLE (SOLVENT DYES)	3.6	1.2	1.2	2.2	2.1	2.3	2.4	0.4	0.7	0.5	0.6	↓ -18.1	45.9
OPTICAL WHITENING AGENTS	67.7	67.7	65.3	23.8	23.2	29.3	20.7	18.2	22.5	16.8	19.7	↓ -2.7	30.1
ORGANIC PIGMENT	88.4	89.0	102.7	63.7	73.3	73.9	75.1	67.3	74.3	55.6	53.9	↓ -2.4	52.5
PIGMENT EMULSION	5.4	3.8	10.8	10.6	10.2	9.8	9.7	8.6	9.3	8.3	9.1	↓ -2.2	84.3
REACTIVE DYES	197.5	216.5	221.2	121.0	151.9	151.4	156.7	132.1	161.9	117.2	136.6	↑ 1.8	61.8
SULPHUR DYES (SULPHUR BLACK)	8.2	13.2	13.2	10.1	7.3	7.5	7.4	5.1	8.6	10.7	7.9	↓ -3.4	60.1
VAT DYES	2.9	3.3	3.3	1.5	1.7	1.8	2.1	2.0	2.3	2.4	1.7	↑ 1.8	51.7
SOLUBILISED VAT DYES	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	↓ -100.0	
FOOD COLOURS	0.0	0.0	0.0	0.8	0.8	0.8	0.7	0.5	0.7	0.9	0.8	↑ 0.5	
NAPTHOLS	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
INORGANIC PIGMENTS	18.1	18.1	18.7	15.4	17.9	16.3	16.1	14.6	18.6	16.4	17.7	↑ 2.0	94.8
Total	532.7	570.0	590.4	320.3	367.2	381.5	384.2	327.5	398.0	318.1	344.7	↑ 1.1	58.4
Total (All Groups)	16177.8	16538.2	17020.9	10233.9	11068.6	11589.1	11943.2	11243.1	12743.1	13038.8	12979.0	↑ 3.5	76.3

Note: Production and Installed Capacity data based on MPRs received from manufacturer under large and medium scale units only monitored by S&M Division of DCPC.

Table 4: Installed Capacities of Selected Chemicals (Group-Wise) from 2016-17 to 2023-24

(Figures in 000'MT)

Group	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Alkali Chemicals	8822	9274	9422	10089	10473	10889	11100	11260
2. Inorganic Chemicals	1313	1315	1300	1538	1560	1575	1575	1650
3. Organic Chemicals	2529	2535	2575	2671	2716	2800	2905	3076
4. Pesticides (Tech.)	322	325	324	334	371	380	389	444
5. Dyes & Pigments	471	478	492	528	532	533	570	590
Total Major Chemicals	13456	13927	14112	15160	15652	16178	16538	17021

Note: Installed Capacity data based on MPRs received from manufacturer of chemicals under large and medium scale units only monitored by S&M Division of DCPC.

Table 5: Consumption of Selected Major Chemicals (Product-Wise) during 2016-17 to 2023-24

(Figures in 000'MT)

Products	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Alkali Chemicals								
SODA ASH	3244.3	3652.1	3826.3	3779.4	3208.1	3391.4	3592.9	3594.7
CAUSTIC SODA	2935.5	3004.0	2961.5	3258.8	2936.8	3323.0	3282.1	3374.1
LIQUID CHLORINE	1795.6	1895.7	2064.7	2246.3	2170.5	2495.2	2663.2	2634.8
Total	7975.5	8551.8	8852.5	9284.5	8315.4	9209.6	9538.2	9603.6
Inorganic Chemicals								
ALUMINIUM FLUORIDE	54.4	57.1	67.6	44.1	62.9	82.3	59.6	58.1
CALCIUM CARBIDE	140.2	142.5	128.2	112.2	119.3	119.8	104.8	104.9
CARBON BLACK	331.8	594.3	702.1	553.6	436.5	408.9	349.2	321.9
POTASSIUM CHLORATE	-1.5	-1.6	-2.2	13.1	15.4	15.7	11.5	14.1
SODIUM CHLORATE	7.3	7.7	13.4	24.1	29.5	37.8	45.0	41.8
TITANIUM DIOXIDE	64.2	62.0	64.3	59.7	58.1	66.0	60.4	66.8
RED PHOSPHORUS	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.4
HYDROGEN PEROXIDE	205.7	225.4	240.5	174.8	159.2	171.3	173.9	196.1
POTASSIUM IODATE	0.0	0.0	0.0	0.6	0.5	0.6	0.5	0.5
CALCIUM CARBONATE	883.0	1026.5	1252.3	1416.9	1088.9	1221.2	1267.3	857.2
Total	1685.4	2114.3	2466.6	2399.3	1970.8	2124.1	2072.8	1661.9
Organic Chemicals								
ACETIC ACID	993.4	1029.4	1073.3	1081.6	1048.4	1199.2	1255.0	1258.8
ACETIC ANHYDRIDE	76.6	81.8	89.3	74.1	69.9	78.6	75.9	43.8
ACETONE	159.5	174.7	146.6	97.7	92.9	133.2	130.9	131.3
PHENOL	321.7	337.3	292.5	179.6	179.2	220.7	256.8	261.1
METHANOL	1801.8	2034.3	2247.7	2449.4	2445.5	2547.0	2843.7	3200.2
FORMALDEHYDE	235.9	237.7	214.1	246.3	229.4	276.6	284.8	286.7
NITROBENZENE	83.8	86.7	86.9	76.5	85.9	90.5	68.2	79.1
CITRIC ACID	80.0	81.9	93.0	88.5	92.7	94.4	128.3	110.9
MALEIC ANHYDRIDE	54.1	55.7	74.4	71.8	64.9	80.7	89.2	93.2
PENTAERYTHRITOL	31.4	30.0	31.1	33.9	23.9	30.1	30.7	36.2
ANILINE	85.9	107.1	126.2	106.3	106.2	131.7	123.5	179.1
CHLORO METHANES	221.7	222.9	286.9	299.3	329.4	342.6	412.9	386.8
ISOBUTYLBENZENE	-6.5	-3.4	-2.0	-0.3	-3.4	0.0	-4.7	-1.1
ONCB	22.4	24.9	23.7	19.8	23.3	26.7	27.1	25.4
PNCB	39.3	37.8	36.1	31.9	38.9	43.7	46.2	42.6
MEK	37.3	51.7	53.7	35.1	50.5	51.2	57.4	48.4
ACETALDEHYDE	60.5	65.8	60.8	76.1	55.0	71.7	77.7	64.1
ETHANOLAMINES	23.1	24.5	30.2	30.4	33.0	36.5	32.9	41.9
ETHYL ACETATE	279.2	306.0	324.8	367.2	344.5	330.3	345.5	367.3
MENTHOL	4.0	2.3	-5.8	-6.6	-8.0	-5.4	-2.1	6.0
ORTHO NITRO TOLUENE	13.3	12.0	12.7	18.8	24.0	23.1	28.7	34.6
Total	4618.4	5001.0	5296.1	5377.4	5326.1	5802.8	6308.6	6696.4

Note: 1. Production and Installed Capacity data based on MPRs received from manufacturer of chemicals under large and medium scale units only monitored by S&M Division of DCPC.

2. Data Source in respect of Imports and Exports is DGCIS, Kolkata, M/o Commerce and Industry.

3. Consumption is derived as Production + Imports - Exports

Table 5A: Consumption of Selected Pesticides (Tech. Grade) (State -wise) during 2019-20 to 2023-24

(Figures in MT)

S. No.	States/UTs	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Andhra Pradesh	1559	1559	1759	2200	1828
2	Bihar	850	995	850	1020	995
3	Chhattisgarh	1672	1639	1740	1775	1781
4	Goa	30	30	32	34	35
5	Gujarat	1784	1573	1869	1747	1835
6	Haryana	4200	4050	4066	4066	4064
7	Himachal Pradesh	881	56	279	470	277
8	Jharkhand	681	1161	450	507	455
9	Karnataka	1568	1930	2224	1875	1830
10	Kerala	656	585	532	540	529
11	Madhya Pradesh	540	691	654	598	599
12	Maharashtra	12783	13243	13175	6814	8718
13	Orissa	1115	1158	1240	1348	1144
14	Punjab	4995	5193	5376	5130	5257
15	Rajasthan	2088	2330	2104	1865	1898
16	Tamil Nadu	2225	1834	1851	1922	1970
17	Telangana	4915	4986	4920	4920	4920
18	Uttar Pradesh	12217	11557	11688	11824	11828
19	Uttarakhand	224	135	213	200	79
20	West Bengal	3630	3630	3630	3762	4081
Sub Total		58613	58336	58653	52617	54123
North-Eastern States						
21	Arunachal Pradesh	5	2	1	3	3
22	Assam	410	420	474	543	472
23	Manipur	25	46	NR	27	22
24	Meghalaya	Organic State	Organic State	Organic State	14	NR
25	Mizoram	27	NR	29	36	94
26	Nagaland	19	36	41	NR	26
27	Sikkim	Organic State	Organic State	Organic State	Organic State	Organic State
28	Tripura	364	NR	NR	NR	43
Sub Total		851	503	545	622	659
Union Territories						
29	Andaman & Nicobar	NR	1	NR	NR	NR
30	Chandigarh	NR	NR	NR	NR	NR
31	Dadra & Nagar Haveli & Daman & Diu	NR	NR	NR	NR	NR
32	Delhi	NR	NR	NR	NR	21
33	Jammu & Kashmir	2198	3352	NR	391	433
34	Ladakh	NR	NR	NR	NR	NR
35	Lakshadweep	NR	NR	NR	NR	NR
36	Pondicherry	40	NR	NR	NR	NR
Sub Total		2238	3353	0	391	454
Grand Total		61702	62193	59198	53630	55236
Source: Directorate of Plant Protection, Quarantine & Storage, Department of Agriculture & Farmers Welfare, Ministry of Agriculture & Farmers Welfare (https://ppqs.gov.in/statistical-database)						

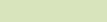
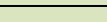
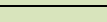
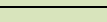
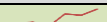
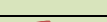
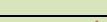
NR- Not reported

Section - II

Petrochemical Sector

Table 6: Performance of Selected Major Petrochemicals (Group Wise) during 2016-17 to 2023-24

(Figures in 000'MT)

Group	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Trend Line	CAGR (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1. Synthetic Fibre										
Capacity	4393	4379	4440	4521	4529	4483	4496	4498		↑ 0.3
Production	3599	3625	3601	3893	3185	4040	3973	3853		↑ 1.0
Capacity Utilisation (%)	81.9	82.8	81.1	86.1	70.3	90.1	88.4	85.7		
Imports	280	260	276	347	403	460	670	611		↑ 11.8
Exports	1026	1001	1016	1059	879	1202	759	683		↓ -5.6
2. Polymers										
Capacity	10110	10112	10115	12754	12799	12820	12894	12950		↑ 3.6
Production	9163	9276	10040	12404	12144	12471	11487	12548		↑ 4.6
Capacity Utilisation (%)	90.6	91.7	99.3	97.3	94.9	97.3	89.1	96.9		
Imports	4452	4751	4479	3430	2641	2941	4789	5313		↑ 2.6
Exports	912	1188	1934	1615	1489	921	586	705		↓ -3.6
3. Synthetic Rubber										
Capacity	425	425	425	411	406	400	402	403		↓ -0.8
Production	285	308	351	358	353	383	345	395		↑ 4.8
Capacity Utilisation (%)	67.0	72.3	82.5	87.1	87.1	95.7	85.9	97.8		
Imports	560	608	619	575	747	635	673	724		↑ 3.7
Exports	38	52	64	74	95	90	70	92		↑ 13.5
4. Synthetic Detergent Intermediates										
Capacity	687	687	687	680	680	680	680	722		↑ 0.7
Production	664	743	687	715	736	780	703	808		↑ 2.9
Capacity Utilisation (%)	96.6	108.1	100.0	105.1	108.3	114.8	103.4	112.0		
Imports	228	206	227	264	265	278	343	252		↑ 1.4
Exports	7	1	1	1	2	7	3	4		↓ -8.9
5. Performance Plastics										
Capacity	2945	2947	2963	2919	3046	3032	3096	3060		↑ 0.6
Production	1799	1719	1589	1672	1520	1698	1628	1425		↓ -3.3
Capacity Utilisation (%)	61.1	58.3	53.6	57.3	49.9	56.0	52.6	46.6		
Imports	417	583	684	741	299	283	292	418		↑ 0.0
Exports	973	1051	1080	969	217	284	182	157		↓ -22.9
Total:- Major Petrochemicals (1 to 5)										
Capacity	18561	18551	18630	21286	21460	21415	21567	21633		↑ 2.2
Production	15510	15670	16269	19041	17938	19371	18135	19028		↑ 3.0
Capacity Utilisation (%)	83.6	84.5	87.3	89.5	83.6	90.5	84.1	88.0		
Imports	5938	6408	6284	5356	4356	4597	6768	7317		↑ 3.0
Exports	2956	3293	4095	3719	2681	2505	1600	1642		↓ -8.1

Note : 1. Production and Installed Capacity data based on MPRs received from manufacturer under large and medium scale units only monitored by S&M Division of DCPC.

2. Data Source in respect of imports and exports is DGCIS, Kolkata, M/o Commerce and Industry.

Table 6A: Projection of Production, Installed Capacity, Export and Import of Selected Major Petrochemical (Group-wise) from the year 2024-25 to 2029-30

(Figures in 000'MT)

Group	Actual Values						Forcast values					
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1. Synthetic Fibre												
Capacity	4440	4521	4529	4483	4496	4498	4511	4493	4493	4501	4498	4496
Production	3601	3893	3185	4040	3973	3853	3992	4066	4266	4186	4294	4408
Capacity Utilisation (%)	81.1	86.1	70.3	90.1	88.4	85.7	88.5	90.5	94.9	93.0	95.5	98.1
Imports	276	347	403	460	670	611	732	813	895	969	1024	1127
Exports	1016	1059	879	1202	759	683	709	604	513	357	342	249
2. Polymers												
Capacity	10115	12754	12799	12820	12894	12950	13850	13612	13875	14166	14448	14687
Production	10040	12404	12144	12471	11487	12548	12860	12570	12783	12965	13316	13277
Capacity Utilisation (%)	99.3	97.3	94.9	97.3	89.1	96.9	92.9	92.3	92.1	91.5	92.2	90.4
Imports	4479	3430	2641	2941	4789	5313	4787	5648	6463	6956	7174	7720
Exports	1934	1615	1489	921	586	705	229	-38	-310	-502	-764	-1094
3. Synthetic Rubber												
Capacity	425	411	406	400	402	403	393	393	391	389	386	382
Production	351	358	353	383	345	395	385	392	400	405	419	419
Capacity Utilisation (%)	82.5	87.1	87.1	95.7	85.9	97.8	97.9	99.7	102.3	104.1	108.8	109.5
Imports	619	575	747	635	673	724	733	757	751	796	811	824
Exports	64	74	95	90	70	92	94	93	91	96	102	100
4. Synthetic Detergent Intermediates												
Capacity	687	680	680	680	680	722	705	716	727	738	747	749
Production	687	715	736	780	703	808	800	814	829	845	878	879
Capacity Utilisation (%)	100.0	105.1	108.3	114.8	103.4	112	113.4	113.6	113.9	114.5	117.6	117.3
Imports	227	264	265	278	343	252	309	310	315	315	312	335
Exports	1	1	2	7	3	4	5	6	6	5	7	7
5. Performance Plastics												
Capacity	2963	2919	3046	3032	3096	3060	3120	3156	3163	3194	3215	3252
Production	1589	1672	1520	1698	1628	1425	1511	1460	1434	1352	1328	1320
Capacity Utilisation (%)	53.6	57.3	49.9	56.0	52.6	46.6	48.4	46.3	45.3	42.3	41.3	40.6
Imports	684	741	299	283	292	418	184	127	164	113	45	-29
Exports	1080	969	217	284	182	157	-209	-351	-387	-586	-761	-932
Total:- Major Petrochemicals (1 to 5)												
Capacity	18630	21286	21460	21415	21567	21633	22580	22371	22649	22989	23293	23566
Production	16269	19041	17938	19371	18135	19028	19548	19301	19711	19754	20236	20303
Capacity Utilisation (%)	87.3	89.5	83.6	90.5	84.1	88.0	86.6	86.3	87.0	85.9	86.9	86.2
Imports	6284	5356	4356	4597	6768	7317	6744	7656	8588	9150	9367	9977
Exports	4095	3719	2681	2505	1600	1642	828	315	-87	-629	-1073	-1669

Note: 1. Production and Installed Capacity data based on MPRs received from manufacturer under large and medium scale units only monitored by S&M Division of DCPC.

2. Data Source in respect of imports and exports is DGCIS, Kolkata, M/o Commerce and Industry.

3. Projected figures have been calculated by using Forecast formula in MS Excel.

Table 7: Production, Installed Capacity & Growth of Selected Major Petrochemicals (Group-wise) during 2016-17 to 2023-24

(Figures in 000' MT)

Group	Installed Capacity			Production / Growth Rate	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
	2021-22	2022-23	2023-24									
(1)	(2)	(3)	(4)	(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1. Synthetic Fibre	4483	4496	4498	Production	3599	3625	3601	3893	3185	4040	3973	3853
				Growth Rate (%)	1.1	0.7	-0.7	8.1	-18.2	26.9	-1.7	-3.0
2. Polymers	12820	12894	12950	Production	9163	9276	10040	12404	12144	12471	11487	12548
				Growth Rate (%)	3.7	1.2	8.2	23.5	-2.1	2.7	-7.9	9.2
3. Synthetic Rubber	400	402	403	Production	285	308	351	358	353	383	345	395
				Growth Rate (%)	17.9	8.0	14.0	2.1	-1.3	8.3	-9.9	14.4
4. Synthetic Detergent Intermediates	680	680	722	Production	664	743	687	715	736	780	703	808
				Growth Rate (%)	17.4	11.9	-7.5	4.0	3.0	6.0	-9.9	15.0
5. Performance Plastics	3032	3096	3060	Production	1799	1719	1589	1672	1520	1698	1628	1425
				Growth Rate (%)	5.8	-4.5	-7.6	5.2	-9.1	11.7	-4.1	-12.5
Total:- Major Petrochemicals	21415	21567	21633	Production	15510	15670	16269	19041	17938	19371	18135	19028
				Growth Rate %)	4.1	1.0	3.8	17.0	-5.8	8.0	-6.4	4.9

Note : 1. Production and Installed Capacity data based on MPRs received from manufacturer under large and medium scale units only monitored by S&M Division of DCPC.

Table 8: Production, Capacity Utilization & Growth of Selected Major Petrochemicals (Product-Wise) during 2016-17 to 2023-24

(Figures in 000'MT)

Major Groups / Products	Installed Capacity			Production								CAGR (%)	Utilisation in 2023-24 (%)
	2021-22	2022-23	2023-24	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
A : BASIC MAJOR PETROCHEMICALS													
I : Synthetic Fibres / Yarn													
ACRYLIC FIBRE (AF)	107.0	108.0	108.0	95.4	91.0	99.5	102.9	77.0	66.7	96.2	76.2	↓ -3.2	70.6
POLYESTER STAPLE FIBREFILL	69.0	69.0	69.0	53.7	51.3	53.0	49.9	40.3	39.0	34.1	35.0	↓ -5.9	50.7
NYLON FILAMENT YARN	66.6	66.6	64.7	40.9	40.0	46.6	48.3	33.3	46.2	44.1	38.7	↓ -0.8	59.8
NYLON INDUSTRIAL YARN/TYRE CORD	165.7	165.7	176.8	103.6	107.6	109.5	99.7	90.3	115.5	100.6	113.3	↑ 1.3	64.1
POLYESTER FILAMENT YARN	2661.1	2661.1	2655.3	2200.9	2283.4	2316.4	2520.3	1997.9	2560.8	2486.5	2507.8	↑ 1.9	94.4
POLYESTER STAPLE FIBRE	1350.5	1350.5	1340.7	1056.0	1005.3	931.4	1027.5	909.4	1160.5	1161.0	1025.3	↓ -0.4	76.5
POLYPROPYLENE FILAMENT YARN	3.6	3.6	3.6	3.4	3.1	2.4	2.5	2.2	2.8	1.9	1.9	↓ -7.8	53.4
POLYPROPYLENE STAPLE FIBRE	29.7	29.7	29.7	24.6	22.2	20.7	18.8	15.3	21.2	22.2	22.4	↓ -1.3	75.4
POLYESTER INDUSTRIAL YARN	21.5	21.5	21.5	16.3	15.0	14.8	14.7	12.4	14.4	13.6	14.6	↓ -1.6	68.0
Elastomeric/Spandex Filament Yarn	8.5	20.0	28.5	4.7	6.2	7.1	8.1	6.6	12.9	12.3	17.3	↑ 20.5	60.8
Group Total	4483.2	4495.7	4497.8	3599.4	3625.2	3601.5	3892.8	3184.6	4040.0	3972.5	3852.5	↑ 1.0	85.7
II : Polymers													
LINEAR LOW DENSITY POLYETHYLENE (LLDPE)				1318.3	1290.0	1581.2	2994.0	2958.9	2914.1	2424.4	2750.0	↑ 11.1	
HIGH DENSITY POLYETHYLENE (HDPE)				1520.0	1578.4	1597.7	1897.6	1910.0	1915.8	1717.9	1961.5	↑ 3.7	
LLDPE/HDPE (Combined) (\$)	5158.1	5158.1	5158.1	2838.3	2868.4	3178.9	4891.6	4869.0	4829.9	4142.3	4711.4	↑ 7.5	91.3
LOW DENSITY POLYETHYLENE (LDPE)	610.0	610.0	610.0	201.8	185.7	193.1	613.3	616.6	583.0	625.1	581.7	↑ 16.3	95.4
POLYSTYRENE (PS)	471.0	499.0	499.0	311.3	301.6	292.9	291.7	217.4	247.9	271.7	292.9	↓ -0.9	58.7
POLYPROPYLENE (PP)	4933.8	4933.8	4933.8	4253.4	4350.2	4779.0	4982.8	4919.1	5240.7	4773.5	5371.2	↑ 3.4	108.9
EXPANDABLE POLYSTYRENE (EXPS)	147.1	193.0	199.0	96.8	103.9	108.3	110.7	87.4	97.2	108.4	118.3	↑ 2.9	59.5
POLY VINYL CHLORIDE (PVC)	1500.0	1500.0	1550.0	1461.5	1466.1	1488.4	1513.6	1434.1	1471.9	1565.6	1472.4	↑ 0.1	95.0
Group Total	12820.0	12893.9	12949.9	9163.1	9275.9	10040.5	12403.7	12143.6	12470.7	11486.6	12547.9	↑ 4.6	96.9
III : Synthetic Rubber													
STYRENE BUTADIENE RUBBER (SBR)	271.0	271.0	271.0	167.3	194.0	228.6	227.8	212.9	237.5	205.4	245.5	↑ 5.6	90.6
POLY BUTADIENE RUBBER (PBR)	100.0	100.0	100.0	117.1	113.6	122.2	130.3	128.5	132.8	126.1	134.7	↑ 2.0	134.7
ETHYL VINYL ACETATE (EVA)	15.0	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
NITRILE BUTADIENE RUBBER (NBR)	13.7	15.5	17.4	0.4	0.1	0.0	0.0	11.9	12.3	13.4	14.5	↑ 69.9	83.1
Group Total	399.7	401.5	403.4	284.8	307.7	350.9	358.1	353.3	382.6	344.9	394.7	↑ 4.8	97.8
IV : Synthetic Detergent Intermediates													
LINEAR ALKYL BENZENE (LAB)	544.8	544.8	586.8	447.6	451.5	454.8	413.5	457.1	462.3	413.2	479.0	↑ 1.0	81.6
ETHYLENE OXIDE (EO)	135.0	135.0	135.0	216.1	291.3	232.3	301.2	279.4	318.1	289.9	329.4	↑ 6.2	244.0
Group Total	679.8	679.8	721.8	663.7	742.8	687.2	714.7	736.4	780.4	703.0	808.4	↑ 2.9	112.0
V : Performance Plastic													
ABS RESINS	199.0	199.0	203.0	117.8	145.2	148.2	136.5	121.9	122.8	148.9	167.4	↑ 5.1	82.4

Major Groups / Products	Installed Capacity			Production								CAGR (%)	Utilisation in 2023-24 (%)
	2021-22	2022-23	2023-24	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
NYLON-6/ NYLON 6,6*	83.5	83.5	83.5	21.5	20.6	21.5	41.6	55.4	68.3	68.7	65.2	↑ 17.2	78.1
POLYMETHYL METHACRYLATE (PMMA)	3.9	3.9	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	↓ -100.0	
STYRENE ACRYLONITRILE (SAN)	167.0	167.0	167.0	99.2	114.7	131.8	133.8	118.6	121.7	139.1	128.9	↑ 3.8	77.2
PET Chips/Polyester Chips	2558.6	2622.6	2586.3	1548.7	1424.6	1271.1	1344.7	1209.0	1365.9	1254.3	1048.9	↓ -5.4	40.6
PTFE (TEFLON)	20.3	20.3	20.3	11.7	13.7	16.2	15.1	14.6	18.9	17.3	14.2	↑ 2.8	70.0
Group Total	3032.3	3096.3	3060.1	1799.3	1718.8	1588.8	1671.6	1519.6	1697.7	1628.4	1424.6	↓ -3.3	46.6
Total:- Major Petrochemicals (I+II+III+IV+V)	21415.0	21567.2	21633.0	15510.3	15670.3	16268.8	19040.9	17937.6	19371.4	18135.4	19028.1	3.0	88.0
B : INTERMEDIATES													
I : Fibre Intermediates													
ACRYLONITRILE (ACN)	24.0	24.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
CAPROLACTUM	120.0	120.0	120.0	87.0	86.0	92.6	84.1	80.4	108.2	129.6	114.6	↑ 4.0	95.5
MONO ETHYLENE GLYCOL (MEG)	2210.6	2210.6	2335.6	1110.5	1132.7	1159.8	2007.8	1982.0	1990.2	1656.2	1683.7	↑ 6.1	72.1
PURIFIED TEREPHTHALIC ACID (PTA)	3873.0	3873.0	4020.0	3390.6	3492.4	3404.9	3267.1	2996.8	3383.3	3202.2	3158.0	↓ -1.0	78.6
Group Total	6227.6	6227.6	6499.6	4588.0	4711.1	4657.2	5358.9	5059.1	5481.7	4988.0	4956.3	↑ 1.1	76.3
II : Building Blocks													
(a) Olefins													
BUTADIENE	552.0	552.0	552.0	347.4	332.4	385.8	481.0	458.8	477.4	429.4	509.0	↑ 5.6	92.2
ETHYLENE	7147.3	7147.3	7147.3	4021.7	4222.7	3831.9	6466.8	6364.9	6414.5	5802.6	6058.0	↑ 6.0	84.8
PROPYLENE	5190.4	5190.4	6180.7	4425.2	4457.9	4639.5	4887.6	5215.8	5635.1	5064.0	5834.0	↑ 4.0	94.4
Group Total	12889.7	12889.7	13880.0	8794.3	9013.0	8857.2	11835.4	12039.4	12527.0	11296.0	12401.0	↑ 5.0	89.3
(b) Aromatics													
BENZENE	1884.3	1884.3	1943.0	1332.0	1318.0	1414.6	1346.2	1407.9	1427.6	1156.6	1291.9	↓ -0.4	66.5
MIXED XYLENE	898.3	898.3	898.3	296.0	271.4	249.1	269.6	146.7	160.9	45.4	53.0	↓ -21.8	5.9
ORTHOXYLENE	511.0	511.0	511.0	444.9	447.8	406.3	386.4	522.1	511.2	408.4	343.2	↓ -3.6	67.2
TOLUENE	288.3	288.3	288.3	126.8	106.9	141.1	140.2	114.0	115.7	112.5	131.7	↑ 0.6	45.7
PARAXYLENE (PX)	3821.7	3821.7	3919.7	3161.3	3194.5	3331.8	2782.3	2614.2	2461.9	1638.9	1417.3	↓ -10.8	36.2
Group Total	7403.6	7403.6	7560.3	5361.0	5338.6	5542.9	4924.7	4804.9	4677.2	3361.8	3237.2	↓ -7.0	42.8
Total:-Intermidates (I+II(a)+II(b))	26520.9	26520.9	27939.9	18743.3	19062.6	19057.3	22119.0	21903.5	22685.9	19645.9	20594.5	↑ 1.4	73.7
C : OTHER PETRO-BASED CHEMICALS													
DIETHYLENE GLYCOL	170.9	170.9	187.1	108.2	105.7	107.4	167.7	172.3	173.7	141.8	147.3	↑ 4.5	78.7
DIACETONE ALCOHOL	9.5	9.5	9.5	0.0	0.2	4.1	6.0	2.9	5.7	3.2	0.0		0.1
ETHYLENE DICHLORIDE	593.2	593.2	569.0	282.6	282.3	339.2	345.3	326.2	367.0	398.6	380.2	↑ 4.3	66.8
BUTANOL	176.0	176.0	176.0	12.5	17.4	21.7	16.4	20.3	38.3	42.4	41.9	↑ 18.9	23.8
2-ETHYL HEXANOL	110.2	110.2	110.2	45.6	56.6	58.9	48.7	49.7	91.3	90.2	101.5	↑ 12.1	92.1
VINYL CHLORIDE MONOMER	541.3	541.3	572.3	791.3	778.0	803.6	874.5	799.2	813.1	849.3	792.3	↑ 0.0	138.4
PBT*	0.0	0.0	0.0	0.6	0.6	1.3	6.2	6.1	7.5	7.9	7.6	↑ 43.5	
POLYCARBONATE*	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	↓ -100.0	
PROPYLENE OXIDE	51.0	51.0	51.0	29.3	36.0	35.1	34.6	44.4	49.9	49.2	45.2	↑ 6.4	88.7

Major Groups / Products	Installed Capacity			Production								CAGR (%)	Utilisation in 2023-24 (%)
	2021-22	2022-23	2023-24	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
PROPYLENE GLYCOL	22.0	22.0	22.0	16.3	17.6	19.1	19.5	19.7	20.5	21.3	21.2	↑ 3.8	96.4
POLYVINYL ACETATE RESIN	12.0	12.0	12.0	0.0	0.0	0.0	0.0	3.0	7.3	9.5	15.6		130.1
UNSATURATED POLYESTER RESIN	34.0	34.0	34.0	0.0	0.0	0.0	16.4	12.9	16.5	19.0	25.0		73.4
METHYL METHACRYLATE	4.4	4.4	4.4	0.5	2.8	4.0	1.7	0.0	0.0	0.0	0.0	↓ -100.0	0.0
ISO-BUTANOL	9.8	9.8	9.8	2.0	2.2	2.2	1.7	2.1	4.0	5.8	5.8	↑ 16.8	59.4
C4-RAFFINATE	291.6	291.6	291.6	437.2	339.2	380.3	413.3	433.4	444.6	393.5	448.5	↑ 0.4	153.8
PHTHALIC ANHYDRIDE	401.9	401.9	401.9	296.1	290.0	275.1	269.6	293.0	339.6	330.2	342.3	↑ 2.1	85.2
VINYL ACETATE MONOMER	30.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
ISOPROPANOL	70.2	70.2	70.2	72.5	71.8	58.3	60.5	55.3	65.1	48.8	60.5	↓ -2.5	86.2
POLYOL	148.5	163.0	163.0	78.7	79.4	82.1	81.8	77.8	87.2	99.8	103.1	↑ 3.9	63.2
Group Total	2676.5	2691.0	2714.0	2173.5	2080.1	2192.5	2364.2	2318.3	2531.3	2510.6	2538.0	↑ 2.2	93.5
Total:- Major Petrochemical (9 Groups)	50612.4	50779.1	52286.9	36427.1	36813.1	37518.5	43524.1	42159.4	44588.5	40291.9	42160.5	↑ 2.1	80.6

Note : 1. Production and Installed Capacity data based on MPRs received from manufacturer under large and medium scale units only monitored by S&M Division of DCPC.

\$: Combined capacity to produce both LLDPE and HDPE. However, production is independent.

* Nylon 6, 6 has combined Installed Capacity that includes the capacity of PBT and Polycarbonate also.

Table 9: Installed Capacities of Selected Major Petrochemicals (Group Wise) from 2016-17 to 2023-24

(Figures in 000'MT)

Groups / Products	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A : BASIC PETROCHEMICALS								
I : SYNTHETIC FIBRES	4393	4379	4440	4521	4529	4483	4496	4498
II : POLYMERS	10110	10112	10115	12754	12799	12820	12894	12950
III : SYNTHETIC RUBBER (ELASTOMERS)	425	425	425	411	406	400	402	403
IV : SYNTH. DETERGENT INTERMEDIATE	687	687	687	680	680	680	680	722
V : PERFORMANCE PLASTICS	2945	2947	2963	2919	3046	3032	3096	3060
TOTAL:-MAJOR PETROCHEMICALS (I TO V)	18561	18551	18630	21286	21460	21415	21567	21633
B : INTERMEDIATES								
VI : FIBRE INTERMEDIATES	5067	5187	5187	5885	6228	6228	6228	6500
VII : OLEFINS	9683	9683	9683	12890	12890	12890	12890	13880
VIII : AROMATICS	6305	6305	6305	6460	7404	7404	7404	7560
TOTAL:- INTERMEDIATES (VI TO VIII)	21055	21175	21175	25234	26521	26521	26521	27940
C : OTHER PETRO-BASED CHEMICALS	2273	2271	2271	2413	2458	2677	2691	2714
Total (A+B+C)	41888	41998	42077	48933	50439	50612	50779	52287

Note: Installed Capacity data based on MPRs received from manufacturer under large and medium scale units only monitored by S&M Division of DCPC.

Table 10: Consumption of Selected Major Petrochemicals (Product-wise) during 2016-17 to 2023-24

(Figures in 000'MT)

Groups / Products	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8	9
1. SYNTHETIC FIBRE								
ACRYLIC FIBRE	83.8	83.9	94.0	118.7	93.4	78.1	93.6	71.2
POLYESTER STAPLE FIBREFILL	53.7	51.3	53.0	49.9	40.3	39.0	34.1	35.0
NYLON FILAMENT YARN	70.1	58.7	64.1	65.0	44.2	62.1	74.1	58.2
NYLON INDUSTRIAL YARN/TYRE CORD	109.8	112.5	115.8	103.0	95.5	121.6	102.7	108.6
POLYESTER FILAMENT YARN	1537.2	1648.5	1703.7	1924.2	1696.0	2094.0	2502.1	2583.1
POLYESTER STAPLE FIBRE	941.9	866.8	767.8	860.5	702.3	855.1	1029.1	872.9
POLYPROPYLENE FILAMENT YARN	2.0	3.6	3.2	2.5	2.2	2.3	1.1	1.0
POLYPROPYLENE STAPLE FIBRE	16.8	16.0	16.2	12.1	9.3	13.3	14.8	19.6
POLYSTER INDUSTRIAL YARN	16.3	15.0	14.8	14.7	12.4	14.4	13.6	14.6
Elastomeric/Spandex Filament Yarn	21.9	27.2	28.9	29.4	13.9	18.1	18.5	15.7
Total	2853.7	2883.8	2861.4	3180.0	2709.3	3298.1	3883.8	3779.8
2. POLYMERS								
LOW DENSITY POLYETHYLENE	566.4	542.0	370.0	825.6	833.5	756.3	830.9	823.1
HIGH DENSITY POLYTHYLENE	2372.4	2365.7	2042.5	2198.6	2321.9	2544.9	3276.3	3838.6
POLYSTYRENE	273.2	284.6	285.2	296.5	250.9	269.1	345.2	341.6
POLYPROPYLENE (INC. CO-POLYMER)	4460.3	4737.2	4915.8	5438.4	4911.8	5831.0	6123.0	6740.7
EXPANDABLE POLYSTYRENE	96.9	103.4	106.4	109.0	91.2	101.8	107.8	117.0
POLY VINYL CHLORIDE	3157.9	3305.7	3523.8	2439.9	1836.4	1929.7	2155.2	2158.7
LINEAR LOW DENSITY POLYTHYLENE	1734.1	1486.2	1349.4	2910.4	3050.9	3070.8	2860.7	3136.1
PVC COMPOUND	42.1	14.3	-7.7	0.0	0.0	-12.5	-9.5	-0.2
Total	12703.2	12839.1	12585.5	14218.4	13296.5	14491.0	15689.6	17155.6
3. SYNTHETIC RUBBER								
STYRENE BUTADIENE RUBBER	289.8	286.3	305.5	285.6	325.5	371.4	335.1	377.3
POLY BUTADIENE RUBBER	196.9	201.4	213.7	207.6	220.2	220.3	258.4	254.7
ETHYL PROPYLENE DIMERS	40.1	42.6	50.3	43.2	40.4	47.5	53.5	64.9
ETHYL VINYL ACETATE	143.1	182.4	178.2	192.7	188.5	180.6	201.3	233.6
NITRILE BUTADIENE RUBBER	36.4	39.9	38.0	40.5	166.6	43.7	51.7	53.9
BUTYL RUBBER	100.3	111.0	120.1	89.3	64.3	64.4	47.9	41.7
Total	806.5	863.6	905.8	858.9	1005.6	927.8	947.9	1026.0
4. SYNTHETIC DETERGENT INTERMEDIATES								
LINEAR ALKYL BENZENE	669.3	656.5	681.6	677.3	721.5	733.6	754.7	728.0
ETHYLENE OXIDE	215.6	290.9	231.6	300.4	278.4	317.1	288.7	328.2
Total	884.9	947.4	913.2	977.7	1000.0	1050.7	1043.4	1056.2
5. PERFORMANCE PLASTICS								
ABS RESIN	220.2	243.0	267.1	240.8	220.4	233.8	263.7	295.4
NYLON-6	161.5	174.1	216.5	237.0	55.4	68.3	68.7	65.2
POLYMETHYL METHACRYLATE	18.9	26.5	25.2	24.7	28.5	21.8	29.8	32.3
STYRENE ACRYLONITRILE	107.1	122.9	140.6	143.8	131.7	141.4	160.3	146.6
NYLON 6,6	1.2	1.1	1.0	0.7	0.0	0.0	0.0	0.0
POLYESTER CHIPS/PET CHIPS	729.4	676.4	534.8	789.6	1158.6	1223.9	1207.3	1137.1
POLYTETRAFLUOROETHYLENE(PTFE)	5.6	7.1	7.1	6.8	6.8	7.2	9.0	8.4
Total	1244.0	1251.0	1192.4	1443.4	1601.4	1696.5	1738.8	1685.1
6. FIBRE INTERMEDIATE								
ACRYLONITRILE	139.7	158.3	180.4	172.9	126.7	173.8	221.8	176.9
CAPROLACTAM	138.9	144.3	159.0	151.9	131.8	168.2	152.3	135.5
DIMETHYL TEREPHTHALATE	1.8	2.3	1.5	1.8	1.8	2.0	1.9	1.5
MONO ETHYLENE GLYCOL	2283.7	2061.7	1501.9	2644.1	2277.8	2836.7	3117.4	2756.7
PURIFIED TEREPHTHALIC ACID	3543.1	3801.6	3812.3	4073.6	3487.2	4800.1	4794.2	4779.3
Total	6107.1	6168.1	5655.0	7044.2	6025.3	7980.8	8287.6	7849.8
7. OLEFINS								
BUTADIENE	242.6	231.8	250.6	306.8	292.0	333.3	316.9	356.0
ETHYLENE	4102.6	4125.4	3699.2	6379.3	6301.9	6365.4	5838.9	6083.7
PROPYLENE	4415.1	4446.0	4608.3	4889.0	5204.4	5664.6	5072.7	5840.4
Total	8760.4	8803.2	8558.2	11575.1	11798.3	12363.3	11228.5	12280.0

Groups / Products	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
8. AROMATICS								
BENZENE	542.6	31.8	-214.3	-51.1	-80.5	-491.2	-284.0	-177.2
MIXED XYLENE	296.1	273.4	248.7	269.3	146.7	160.9	47.4	52.8
ORTHO-XYLENE	316.8	277.8	203.6	225.5	237.7	293.2	338.0	396.0
TOLUENE	513.7	517.0	565.6	596.5	698.0	598.2	682.3	697.2
PARAXYLENE	3557.3	2256.7	1508.8	940.5	442.7	805.9	1163.7	2002.6
Total	5226.5	3356.6	2312.4	1980.8	1444.6	1367.0	1947.5	2971.5
9. OTHER PETRO-BASED CHEMICALS								
DIETHYLENE GLYCOL	108.2	105.7	107.4	167.7	172.3	173.7	141.8	147.3
DIACETONE ALCOHOL	0.0	0.2	4.1	6.0	2.9	5.7	3.2	0.0
ETHYLENE DICHLORIDE	786.5	950.8	901.7	1044.9	921.7	987.0	1061.4	957.6
BUTANOL	68.1	70.2	70.2	75.0	62.5	66.8	81.0	98.8
OXO ALCOHOL	1.9	1.4	-0.2	1.5	2.1	2.1	1.0	3.1
2-ETHYL HEXANOL	110.4	112.1	109.8	130.4	104.5	101.6	144.1	133.2
VINYL CHLORIDE MONOMER	1135.7	1262.4	1261.2	1385.6	1279.1	1394.9	1386.5	1300.6
EPICHLHYDRINE	48.1	56.0	65.0	61.1	55.1	66.4	66.3	58.2
ISO BUTYLENE	20.1	48.7	44.6	-7.3	-4.2	-18.5	-14.1	-16.7
METAXYLENE	2.6	2.1	2.9	1.9	2.7	4.7	3.0	4.6
METHYL ISOBUTYL KETONE	21.6	33.7	31.9	27.8	30.1	35.8	30.4	44.0
PBT	0.6	0.6	1.3	6.2	6.1	7.5	7.9	7.6
PIB	13.8	12.4	12.0	10.3	6.7	12.2	8.7	2.6
POLYCARBONATE	134.5	154.1	187.1	172.5	174.7	207.2	221.3	277.1
PROPYLENE OXIDE	52.4	59.4	61.9	54.7	61.8	70.4	74.1	73.5
PROPYLENE GLYCOL	66.8	73.9	83.9	80.9	76.0	81.0	88.0	97.6
POLYVINYL ACETATE RESIN	-5.7	-3.5	-5.8	-5.5	-1.4	2.3	5.7	6.0
UNSATURATED POLYESTER RESIN	23.7	35.5	28.3	49.6	44.9	42.6	49.4	66.1
METHYL METHACRYLATE	0.5	2.8	4.0	1.7	0.0	0.0	0.0	0.0
ISO-BUTANOL	2.0	2.2	2.2	1.7	2.1	4.0	5.8	5.8
ETHYL BENZENE	0.3	0.4	0.7	0.5	0.5	0.9	0.7	0.9
C4-RAFFINATE	437.2	339.2	380.3	413.3	433.4	444.6	393.5	448.5
CELLULOSE ACETATE SHEET	1.0	1.3	1.5	1.3	1.3	1.6	1.6	1.2
CELLULOSE NITRATE SHEET	0.1	0.1	0.1	0.1	1.2	0.5	0.1	0.1
MELAMINE MOULDING POWDER	2.9	-0.1	-1.3	-6.7	-9.8	-19.0	-26.5	-35.5
POLYACETAL RESIN	37.5	43.5	48.5	47.3	48.4	47.2	60.2	62.1
PHTHALIC ANHYDRIDE	346.1	382.6	393.4	415.2	410.4	428.3	403.7	391.1
STYRENE	724.5	784.7	811.2	872.6	720.8	847.2	1055.4	1054.9
VINYL ACTATE MONOMER	150.2	163.7	163.0	159.4	136.5	174.4	209.6	201.0
ISOPROPANOL	162.3	171.3	193.1	204.2	233.8	189.5	183.9	161.5
POLYOL	226.0	274.5	308.3	295.7	239.5	247.7	99.8	103.1
Total	4680.0	5142.0	5272.2	5669.7	5215.7	5610.3	5747.3	5655.9

Note : 1. Production and Installed Capacity data based on MPRs received from manufacturer under large and medium scale units only monitored by S&M Division of DCPC.

2. Data Source in respect of imports and exports is DGCI, Kolkata, M/o Commerce and Industry.

3. Consumption is derived as Production + Imports - Exports

Section - III

Foreign Trade

Table 11: Exports and Imports of Chemicals & Chemical Products (excluding Pharmaceutical Products and Fertilizers) during 2016-17 to 2023-24

											(Rs. in Crore)
HS Code	Commodity	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Trend line	CAGR (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Total National Exports of which		1849434	1956515	2307726	2219854	2159043	3147021	3621550	3618952		10.1
28	INORGANIC CHEMICALS	9138	11175	14056	12512	12301	19800	26642	26552		16.5
29	ORGANIC CHEMICALS	78386	95381	127855	124195	133637	164815	172357	168922		11.6
32	TANNING OR DYEING	17189	18951	23124	24409	22660	29513	26528	32997		9.8
38	MISCELLANEOUS CHEMICAL PRODUCTS.	21792	25080	32397	35663	37886	52416	63282	54454		14.0
39	PLASTIC AND ARTICLES THEREOF.	35502	40928	56079	48970	51004	67440	61518	61117		8.1
4002	SYNTHETIC RUBBER AND FACTICE	480	571	739	759	821	1141	964	1097		12.5
54	MAN-MADE FILAMENTS.	13334	13984	16018	16962	11470	18070	15731	14576		1.3
55	MAN-MADE STAPLE FIBRES.	14373	13212	13308	11824	9559	15402	14283	13569		-0.8
A: Total Chemicals and Petrochemical Products		190193	219281	283575	275294	279337	368597	381306	373285		10.1
% share in total export		10.3	11.2	12.3	12.4	12.9	11.7	10.5	10.3		
Total National Imports of which		2577675	3001033	3594675	3360954	2915958	4572775	5749801	5616042		11.8
28	INORGANIC CHEMICALS	31654	38927	53237	45045	50955	76356	102895	75653		13.3
29	ORGANIC CHEMICALS	103798	123761	156552	140205	145830	212615	232169	221365		11.4
32	TANNING OR DYEING	11186	12995	15460	14518	14036	19431	20490	30116		15.2
38	MISCELLANEOUS CHEMICAL PRODUCTS.	30642	35521	41748	39069	45324	58634	65756	61486		10.5
39	PLASTIC AND ARTICLES THEREOF.	77573	89768	106591	100607	98392	149067	185547	180725		12.8
4002	SYNTHETIC RUBBER AND FACTICE	5654	6687	7896	6079	6269	9154	11121	9861		8.3
54	MAN-MADE FILAMENTS.	4856	5538	6843	7351	6727	11144	14287	13711		16.0
55	MAN-MADE STAPLE FIBRES.	3826	4658	6508	6785	6180	7714	9822	7460		10.0
B: Total Chemicals and Petrochemical Products		269189	317856	394834	359660	373714	544115	642088	600378		12.1
% share in total import		10.4	10.6	11.0	10.7	12.8	11.9	11.2	10.69		

Chapter 28: Inorganic Chemicals; Organic or Inorganic Compounds of Precious Metals, of Rare-Earth Metals, of Radioactive Elements or of Isotopes; **Chapter 29:** Organic Chemicals; **Chapter 32:** Tanning or Dyeing Extracts; Tannins and their Derivatives; Dyes, Pigments and Other Colouring Matter; Paints and Varnishes; Putty and other Mastics; Inks; **Chapter 38:** Miscellaneous Chemical Products; **Chapter 39:** Plastics and articles thereof; **4002:** Synthetic rubber and factice derived from oils, in primary forms or in plates, sheets or strip; mixtures of any product of heading No.4001 with any product of this heading, in primary forms or in plates, sheets; **Chapter 54:** Man-made Filaments and **Chapter 55:** Man-made staple fibres

Note 1: Import and Export includes both technical and formulations.

Note 2: Data Source in respect of Imports and Exports is DGCIS, Kolkata, M/o Commerce and Industry

Table 12: Exports and Imports of Chemicals & Chemical Products (including Pharmaceutical Products and Fertilizers) during 2016-17 to 2023-24

(Rs. in Crore)

HS Code	Commodity	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	CARG (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Total National Exports of which	1849434	1956515	2307726	2219854	2159043	3147021	3621550	3618952	10.1
28,29,32,38,39,4002, 54 & 55	Chemicals and Chemical Products (excluding Pharmaceutical Products and Fertilizers)	190193	219281	283575	275294	279337	368597	381306	373285	10.1
	Share in Total Exports (%)	10.3	11.2	12.3	12.4	12.9	11.7	10.5	10.3	
30	Pharmaceutical Products	86705	85447	103240	115473	143738	144581	159644	183052	11.3
	Share in Total Exports (%)	4.7	4.4	4.5	5.2	6.7	4.6	4.4	5.1	
31	Fertilisers	466	685	1038	837	779	630	1057	1077	12.7
	Share in Total Exports (%)	0.03	0.04	0.04	0.04	0.04	0.02	0.03	0.03	
A: Total Chemicals and Chemical Products (including Pharmaceutical Products and Fertilizers)		277364	305413	387853	391604	423855	513807	542007	557414	10.5
	Share in Total Exports (%)	15.00	15.61	16.81	17.64	19.63	16.33	14.97	15.40	
	Total National Imports of which	2577675	3001033	3594675	3360954	2915958	4572775	5749801	5616042	11.8
28,29,32,38,39,4002, 54 & 55	Chemicals and Chemical Products (excluding Pharmaceutical Products and Fertilizers)	269189	317856	394834	359660	373714	544115	642088	600378	12.1
	Share in Total Imports (%)	10.4	10.6	11.0	10.7	12.8	11.9	11.2	10.7	
30	Pharmaceutical Products	11515	12241	14581	16530	18934	25603	21023	21403	9.3
	Share in Total Imports (%)	0.4	0.4	0.4	0.5	0.6	0.6	0.4	0.4	
31	Fertilisers	28754	30108	46457	47397	51034	95329	123407	73885	14.4
	Share in Total Imports (%)	1.12	1.00	1.29	1.41	1.75	2.08	2.15	1.32	
B: Total Chemicals and chemical Products (including Pharmaceutical Products and Fertilizers)		309458	360205	455872	423587	443683	665047	786518	695665	12.3
	Share in Total Imports (%)	12.01	12.00	12.68	12.60	15.22	14.54	13.68	12.39	

Chapter 28: Inorganic Chemicals; Organic or Inorganic Compounds of Precious Metals, of Rare-Earth Metals, of Radioactive Elements or of Isotopes; **Chapter 29:** Organic Chemicals; **Chapter 30:** Pharmaceutical Products; **Chapter 31:** Fertilisers; **Chapter 32:** Tanning or Dyeing Extracts; Tannins and their Derivatives; Dyes, Pigments and Other Colouring Matter; Paints and Varnishes; Putty and other Mastics; Inks; **Chapter 38:** Miscellaneous Chemical Products; **Chapter 39:** Plastics and articles thereof; **4002:** Synthetic rubber and factice derived from oils, in primary forms or in plates, sheets or strip; mixtures of any product of heading No.4001 with any product of this heading, in primary forms or in plates, sheets; **Chapter 54:** Man-made Filaments and **Chapter 55:** Man-made staple fibres

Note 1: Import and Export includes both technical and formulations.

Note 2: Data Source in respect of Imports and Exports is DGCIS, Kolkata, M/o Commerce and Industry

Table 12A: Net Imports of Chemicals and Chemical Products (including Pharmaceutical Products and Fertilizers) during 2016-17 to 2023-24

(Rs. in Crore)

HS Code	Commodity	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Total National Net Imports of which		728242	1044519	1286948	1141100	756914	1425753	2128251	1997090
28	INORGANIC CHEMICALS	22516	27752	39181	32533	38654	56556	76253	49101
29	ORGANIC CHEMICALS	25412	28380	28696	16009	12194	47800	59812	52443
32	TANNING OR DYEING	-6004	-5956	-7664	-9891	-8624	-10082	-6038	-2881
38	MISCELLANEOUS CHEMICAL PRODUCTS.	8850	10441	9352	3407	7438	6218	2474	7032
39	PLASTIC AND ARTICLES THEREOF.	42071	48841	50512	51638	47388	81627	124029	119608
4002	SYNTHETIC RUBBER AND FACTICE	5174	6116	7157	5320	5448	8013	10157	8764
54	MAN-MADE FILAMENTS.	-8479	-8446	-9175	-9611	-4743	-6926	-1444	-865
55	MAN-MADE STAPLE FIBRES.	-10546	-8554	-6800	-5039	-3379	-7688	-4461	-6109
Net Imports of Total Chemicals and Chemical Products (excluding Pharmaceutical Products and Fertilizers)		78995	98575	111259	84366	94377	175518	260782	227093
Share in Total National Net Imports (%)		10.8	9.4	8.6	7.4	12.5	12.3	12.3	11.4
30	Pharmaceutical Products	-75190	-73206	-88659	-98943	-124804	-118978	-138621	-161649
31	Fertilisers	28289	29423	45419	46560	50255	94699	122350	72807
Net Imports of Total Chemicals and Chemical Products (including Pharmaceutical Products and Fertilizers)		32094	54792	68019	31983	19828	151240	244511	138251
Share in Total National Net Imports (%)		4.4	5.2	5.3	2.8	2.6	10.6	11.5	6.9

Chapter 28: Inorganic Chemicals; Organic or Inorganic Compounds of Precious Metals, of Rare-Earth Metals, of Radioactive Elements or of Isotopes;

Chapter 29: Organic Chemicals; **Chapter 32:** Tanning or Dyeing Extracts; Tannins and their Derivatives; Dyes, Pigments and Other Colouring Matter; Paints and Varnishes; Putty and other Mastics; Inks; **Chapter 38:** Miscellaneous Chemical Products; **Chapter 39:** Plastics and articles thereof; **4002:** Synthetic rubber and factice derived from oils, in primary forms or in plates, sheets or strip; mixtures of any product of heading No.4001 with any product of this heading, in primary forms or in plates, sheets; **Chapter 54:** Man-made Filaments and **Chapter 55:** Man-made staple fibres

Note 1: Import and Export includes both technical and formulations.

Note 2: Data Source in respect of Imports and Exports is DGCIS, Kolkata, M/o Commerce and Industry

Table 13: Exports of Major Chemicals (Group Wise) during 2016-17 to 2023-24

(QTY. in MT; Value in Rs. Lakh)

GROUP	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
ALKALI CHEMICALS	154244	39591	273456	86880	239321	87844	329459	82760	428873	85310	597971	187161	667778	314334	893112	274679
INORGANIC CHEMICALS	377587	111322	173071	102270	176900	133248	196035	134079	194941	119206	272948	261181	337109	342807	416978	396158
ORGANIC CHEMICALS	190306	232940	204923	320492	233147	425738	244524	422713	295922	438010	310144	528314	303810	429707	300783	376865
PESTICIDES & INSECTICIDES \$	342331	1315026	358481	1481030	404783	2004132	398069	2163297	470787	2380601	567666	3266419	539783	3861697	538624	3048362
DYES & PIGMENTS	419272	1307546	485741	1439290	525170	1800681	530297	1928414	514395	1770381	590558	2336505	464906	1984431	492682	1842026
EXPORTS OF MAJOR CHEMICALS	1483740	3006425	1495672	3429962	1579321	4451643	1698384	4731263	1904918	4793508	2339287	6579580	2313386	6932976	2642179	5938090

Source: DGCIS, Kolkata, M/o Commerce and Industry.

Note: Import and Export includes both technical and formulations.

Table 14: Imports of Major Chemicals (Group Wise) during 2016-17 to 2023-24

(Qty. in MT; Value in Rs. Lakh)

GROUP	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
ALKALI CHEMICALS	1121137	215051	1193978	265347	1049124	225523	1157130	240752	967827	170499	766564	174732	713367	269998	1262504	329564
INORGANIC CHEMICALS	1010071	235237	1228854	308363	1579667	485763	1531826	354602	1187990	302101	1345272	382374	1351450	433595	941784	365743
ORGANIC CHEMICALS	3170287	904366	3407051	1207748	3644781	1520278	3775333	1078053	3715724	1124697	4159984	2308240	4700910	2117580	5017641	1997048
PESTICIDES & INSECTICIDES \$	42591	490581	44145	581385	49233	632590	42580	611078	66190	899057	59722	972605	67445	1025202	61986	802033
DYES & PIGMENTS	55868	214913	62971	231383	56452	278422	50583	281435	45339	252666	53657	326661	44637	290398	49633	284741
IMPORTS OF MAJOR CHEMICALS	5399954	2060148	5936999	2594226	6379257	3142576	6557452	2565920	5983070	2749020	6385199	4164612	6877809	4136773	7333548	3779129

Source: DGCIS, Kolkata, M/o Commerce and Industry

Note: Import and Export includes both technical and formulations.

Table 15: Net Imports of Major Chemicals (Group Wise) during 2016-17 to 2023-24

(Qty. in MT; Value in Rs. Lakh)

GROUP	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE	QTY.	VALUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
ALKALI CHEMICALS	966893	175460	920522	178467	809803	137679	827671	157992	538954	85189	168593	-12429	45589	-44336	369392	54885
INORGANIC CHEMICALS	632484	123915	1055783	206093	1402767	352515	1335791	220523	993049	182895	1072324	121193	1014341	90788	524806	-30415
ORGANIC CHEMICALS	2979981	671426	3202128	887256	3411634	1094540	3530809	655340	3419802	686687	3849840	1779926	4397100	1687873	4716858	1620183
PESTICIDES & INSECTICIDES \$	-299740	-824445	-314336	-899645	-355550	-1371542	-355489	-1552219	-404597	-1481544	-507944	-2293814	-472338	-2836495	-476638	-2246329
DYES & PIGMENTS	-363404	-1092633	-422770	-1207907	-468718	-1522259	-479714	-1646979	-469056	-1517715	-536901	-2009844	-420269	-1694033	-443049	-1557285
NET IMPORTS OF MAJOR CHEMICALS	3916214	-946277	4441327	-835736	4799936	-1309067	4859068	-2165343	4078152	-2044488	4045912	-2414968	4564423	-2796203	4691369	-2158961

Source: DGCIS, Kolkata, M/o Commerce and Industry

Note: Import and Export includes both technical and formulations.

Table 16: Exports of Major Chemicals (Product Wise) during 2016-17 to 2023-24

(QTY in MT; VAL in Rs. Lakh)

PRODUCT	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
ALKALI CHEMICALS																
SODA ASH	64377	10793	110087	19377	62457	15202	137749	27137	149721	23725	250639	53739	203910	69376	422211	103115
CAUSTIC SODA	84809	27773	159630	66829	172165	71663	187494	54532	275374	60246	343042	131967	458181	242907	465257	169586
LIQUID CHLORINE	5058	1025	3739	674	4699	979	4216	1091	3778	1339	4290	1455	5687	2051	5644	1978
TOTAL	154244	39591	273456	86880	239321	87844	329459	82760	428873	85310	597971	187161	667778	314334	893112	274679
INORGANIC CHEMICALS																
ALUMINIUM FLUORIDE	321	265	206	204	442	363	1362	1210	2046	1872	984	247	391	502	2115	509
CALCIUM CARBIDE	493	284	464	258	325	204	371	244	129	112	787	974	735	842	450	406
CARBON BLACK	332172	87414	122287	72959	122832	103643	144017	103457	138724	85640	203936	218180	224439	273212	319171	342226
POTASSIUM CHLORATE	1658	1145	1941	1245	3024	2124	3178	2190	2595	1803	1981	1564	2687	3034	3170	3543
SODIUM CHLORATE	118	56	1075	256	810	41	0	6	5	5	24	34	9	13	8	115
TITANIUM DIOXIDE	8183	10216	9560	15377	7345	12743	6235	10654	6483	11521	6051	15382	4932	12770	4829	10616
RED PHOSPHORUS	454	1757	455	1716	595	2242	650	2567	582	2460	626	3628	672	5524	528	3229
HYDROGEN PEROXIDE	270	284	116	214	263	225	808	482	3077	1053	5683	1996	55007	28081	38677	14954
CALCIUM CARBONATE	33918	9901	36967	10041	41264	11663	39414	13269	41300	14740	52876	19176	48237	18829	48030	20560
TOTAL	377587	111322	173071	102270	176900	133248	196035	134079	194941	119206	272948	261181	337109	342807	416978	396158
ORGANIC CHEMICALS																
ACETIC ACID	12914	6277	12220	5401	17821	10476	12746	6265	10697	6270	22227	20425	45005	28819	17695	10488
ACETIC ANHYDRIDE	20443	10277	19644	13743	18444	13582	20529	12815	23960	15302	20700	24118	35370	35898	42937	33324
ACETONE	3225	2201	5054	3173	10901	5904	11004	5646	28161	19355	21604	15500	13086	11180	23704	20892
PHENOL	4013	8192	4750	9709	4724	11740	22273	23408	53100	39575	43658	50811	16692	27933	24569	27995
METHANOL	12624	3123	9466	2846	10943	3819	12941	3482	8451	2607	18645	6084	41498	13915	51724	17668
FORMALDEHYDE	8406	1548	10616	2098	12484	2495	14153	2484	15241	2734	16486	4115	16214	4732	26463	5156
NITROBENZENE	344	231	60	49	103	110	133	131	98	99	119	149	151	237	185	236
CITRIC ACID	1670	1244	2393	1931	2323	2010	2411	1942	2296	2018	5572	11418	3145	5718	6734	8674
MALEIC ANHYDRIDE	232	164	233	227	87	105	167	193	50	62	114	204	133	209	345	429
PENTAERYTHRITOL	2044	3470	2110	3399	2287	4161	2584	4741	1336	2550	2620	6578	2491	7054	1890	4235
ANILINE	168	207	162	614	137	341	68	148	68	89	74	179	56	265	27	93
CHLORO METHANES	89	121	101	283	75	149	49	107	68	156	122	250	66	170	57	125
ISOBUTYLBENZENE	13430	14854	12341	14384	11740	16320	9705	14150	16156	20894	8541	13709	14280	28274	10772	21596
ONCB	973	950	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PNCB	1023	738	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEK	189	98	19	36	465	477	243	245	66	75	10	37	341	525	1087	1034
ACETALDEHYDE	40	44	3	6	1148	912	1139	893	1027	692	993	812	151	175	307	314
ETHANOLAMINES	1692	4996	4801	14201	3143	13553	1686	10522	2760	11850	3081	10668	3175	14880	3149	15076
ETHYL ACETATE	93699	48020	105551	62174	118682	82170	108384	63095	108725	69937	118930	133346	93079	86539	74653	63032

PRODUCT	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
MENTHOL	12006	125246	12749	183951	13351	253213	17089	265334	19980	240427	19795	222579	12715	154721	11977	142862
ORTHO NITRO TOLUENE	1082	939	2650	2267	4289	4201	7220	7112	3682	3318	6853	7332	6162	8463	2508	3636
TOTAL	190306	232940	204923	320492	233147	425738	244524	422713	295922	438010	310144	528314	303810	429707	300783	376865
PESTICIDES & INSECTICIDES																
MALATHION	1264	2274	1977	3682	2499	5792	2318	6230	1673	5079	2772	9020	1443	5538	2278	7692
DIMETHOATE	24	58	24	62	126	429	199	603	154	590	96	443	13	75	120	501
D.D.V.P.	322	1145	493	1835	689	2716	12	41	639	2620	468	1128	22	81	29	130
QUINALPHOS	384	1772	382	1645	281	1439	338	1606	522	2909	811	5809	540	3954	573	3069
CYPERMETHRIN	9416	45742	9706	62713	13609	112381	15122	95462	18945	106342	19820	126617	15185	95416	16919	75453
FENTHION	10	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER PESTICIDES	45560	208648	43320	216510	39174	233275	7416	28448	6155	23536	6410	24045	5030	25616	5569	26002
OTHER INSECTICIDES	41471	311285	50008	393497	62714	580271	106352	840555	111743	833725	125025	1083286	120034	1211192	108649	921372
COPPER-OXYCHLORIDE	871	1921	723	1732	806	2427	2240	5896	1603	5135	1767	8035	1492	6858	1394	6528
2, 4-D	20677	27496	24125	36076	22242	46347	19623	32924	21097	33198	33070	80574	40025	101768	32031	47827
ISOPROTURON	356	1295	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ALUMINIUM PHOSPHIDE	127	515	505	1703	481	2084	426	1909	764	3024	1029	3241	599	2981	385	2042
METHYL BROMIDE	1756	6229	2000	7292	2208	8384	1628	6682	2089	9966	2214	11088	1967	13376	1834	12708
OTHER HERBICIDES-ANTI SPROUTING PRODUCTS	50720	362041	67039	425113	74058	595122	79434	717390	101726	857814	140909	1197464	147788	1553999	111989	1200197
OTHER FUNGICIDE NES	169373	344587	158179	329170	185896	413465	162961	425551	203677	496663	233275	715669	205645	840843	256854	744841
TOTAL	342331	1315026	358481	1481030	404783	2004132	398069	2163297	470787	2380601	567666	3266419	539783	3861697	538624	3048362
DYES & PIGMENTS																
AZO DYES	60390	162456	69996	181785	72999	225224	68352	210313	64125	179167	76648	246547	62120	223050	63796	196285
ACID DIRECT DYES(OTHER THAN AZO)	4434	19689	5098	21655	5103	26145	5601	28666	5892	29584	6996	40191	6155	35428	7468	37896
BASIC DYES	9229	26186	10757	32222	12017	44585	12730	48887	13585	51140	13913	60670	13693	60434	16838	59039
DISPERSE DYES	16078	59912	14460	56914	20552	107647	23362	133160	18521	93517	24336	120607	16913	89863	15042	66641
FAST COLOUR BASES	2174	15766	2042	9726	2652	14987	5364	46929	3667	21816	4008	28273	2331	17799	2223	11108
OIL SOLUBLE (SOLVENT DYES)	8702	39439	8995	42906	10195	66808	11091	76571	9106	65358	10656	92079	9026	82819	8478	69773
OPTICAL WHITENING AGENTS	26957	46240	30124	48069	30259	66858	26084	82724	21458	44381	23448	63463	16691	52147	16674	45046
ORGANIC PIGMENT	71	293	62	185	15	98	50	333	67	229	29	84	16	63	106	280
PIGMENT EMULSION	88980	392700	102051	441253	110526	494598	110669	534039	116980	581196	130371	757608	97190	625872	101653	583062
REACTIVE DYES	128417	379350	147417	413080	158530	511426	169648	502283	152579	426490	180640	591072	134714	483493	144270	463371
SULPHUR DYES (SULPHUR BLACK)	2023	2682	5467	5794	5720	7303	4510	5233	3701	4115	5565	7958	3314	4905	2867	3697
VAT DYES	1404	22737	1707	26607	4475	46284	4524	64023	3643	63587	6936	81370	3197	56620	2355	43792
SOLUBILISED VAT DYES	31	265	46	529	63	789	71	1185	83	759	74	1043	62	1044	54	863

PRODUCT	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
FOOD COLOURS	28359	79492	31110	87129	29007	107344	25347	107786	30271	118294	35087	143435	30985	148750	32417	150126
NAPTHOLS	2076	4753	2329	5725	3276	8341	4169	11467	4982	10894	3053	8471	2504	6751	4227	9006
OTHER DYES	12711	24977	13735	26227	13621	31196	15218	34504	17473	34086	17930	38503	16581	38193	17060	35585
INORGANIC PIGMENTS	27236	30609	40345	39484	46160	41048	43507	40311	48262	45768	50868	55131	49414	57200	57154	66456
TOTAL	419272	1307546	485741	1439290	525170	1800681	530297	1928414	514395	1770381	590558	2336505	464906	1984431	492682	1842026
EXPORTS OF MAJOR CHEMICALS	1483740	3006425	1495672	3429962	1579321	4451643	1698384	4731263	1904918	4793508	2339287	6579580	2313386	6932976	2642179	5938090

Source: DGCIS, Kolkata, M/o Commerce and Industry

Table 17: Imports of Major Chemicals (Product Wise) during 2016-17 to 2023-24

(QTY in MT; VAL in Rs. Lakh)

PRODUCT	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
ALKALI CHEMICALS																
SODA ASH	695307	102490	772622	111757	840591	144900	847704	152515	719731	114804	563140	97002	577480	195359	1041138	251975
CAUSTIC SODA	425795	112391	421298	153382	208267	79927	309345	87982	248057	55495	203275	77347	135823	74227	221353	77453
LIQUID CHLORINE	35	170	58	208	266	696	81	255	39	200	149	383	64	412	13	136
TOTAL	1121137	215051	1193978	265347	1049124	225523	1157130	240752	967827	170499	766564	174732	713367	269998	1262504	329564
INORGANIC CHEMICALS																
ALUMINIUM FLUORIDE	46564	26437	49758	29075	62374	56075	40362	37910	61224	48059	74347	52878	54655	56217	54863	51207
CALCIUM CARBIDE	55692	23652	55651	23941	45321	21554	31218	14507	32666	17749	22008	15761	22133	17150	25223	13347
CARBON BLACK	128740	82424	186224	143618	278531	249368	197491	153367	190469	127583	156331	155878	126675	165212	156731	170990
POTASSIUM CHLORATE	100	61	29	22	128	272	55	119	909	884	0	9	0	2	173	10
SODIUM CHLORATE	7447	2907	8822	3041	14240	5884	24082	11254	11589	5118	16655	6822	21823	14720	20338	16634
TITANIUM DIOXIDE	13901	22943	13701	24771	14546	28686	16416	30825	13389	25107	15134	36230	18505	53925	17584	47209
RED PHOSPHORUS	0	1	0	3	14	51	18	57	4	18	0	1	0	0	7	55
HYDROGEN PEROXIDE	57068	15910	68474	19305	84261	36931	52727	15858	22355	8150	33475	11293	44550	14499	46641	13624
CALCIUM CARBONATE	700559	60902	846195	64587	1080252	86942	1169457	90705	855385	69433	1027322	103502	1063109	111870	620224	52667
TOTAL	1010071	235237	1228854	308363	1579667	485763	1531826	354602	1187990	302101	1345272	382374	1351450	433595	941784	365743
ORGANIC CHEMICALS																
ACETIC ACID	847808	193958	884515	290624	937298	422360	926492	273709	904345	275694	1054823	778838	1134506	512714	1112214	417696
ACETIC ANHYDRIDE	2272	1118	4381	2346	12275	9700	20529	11716	18807	10479	20896	22339	13400	10112	17689	12671
ACETONE	135887	63055	146878	74975	116760	52108	72402	28094	82056	53673	118656	82777	110027	65925	125368	91229
PHENOL	282187	176601	288572	202842	231808	217710	144005	99070	170993	89789	206208	210164	218476	242182	238165	198775
METHANOL	1637457	295762	1783293	400004	1986712	519474	2286274	425567	2219944	434805	2397912	743153	2815926	752424	3068795	743116
FORMALDEHYDE	84	248	46	44	22	13	5	111	6	148	8	194	6	108	4	59
NITROBENZENE	14429	6944	15384	8207	18204	10721	15533	8073	9866	5008	7816	6361	3887	4235	304	275
CITRIC ACID	81681	39558	84262	45489	95283	45136	90958	38453	94966	47550	99929	100565	131440	140713	117653	79801
MALEIC ANHYDRIDE	50813	34618	52627	42928	69920	61694	66942	46858	59533	46705	74467	107691	82414	94533	87083	69005
PENTAERYTHRITOL	19380	20690	17963	19614	18407	23000	21311	23116	13613	13022	16340	25537	17553	25392	23682	26745
ANILINE	44650	29368	65416	58924	88454	81524	80946	53293	72770	47402	92072	113186	101437	137516	148740	182205
CHLORO METHANES	258	223	519	429	1413	1089	2404	2122	2469	2111	1905	2163	1406	1720	0	3
ISOBUTYLBENZENE	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0
ONCB	839	628	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PNCB	6095	2899	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEK	30901	16629	45331	36027	47158	40994	25509	19145	42542	33013	42363	44585	49348	61386	41470	36591
ACETALDEHYDE	130	357	81	243	94	275	113	375	82	568	150	497	141	454	187	463
ETHANOLAMINES	11662	10202	16101	16140	16648	19347	16694	16398	19070	17807	18605	24326	16431	23742	22672	26567
ETHYL ACETATE	1664	861	43	127	2917	2358	2157	1768	141	1697	3778	5336	262	1630	2266	2728
MENTHOL	1511	10211	1372	8573	1334	12718	3057	30181	4521	45226	4056	40528	4250	42794	11349	109119
ORTHO NITRO TOLUENE	579	436	267	212	74	57	0	0	0	0	0	0	0	0	0	0
TOTAL	3170287	904366	3407051	1207748	3644781	1520278	3775333	1078053	3715724	1124697	4159984	2308240	4700910	2117580	5017641	1997048

PRODUCT	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
PESTICIDES & INSECTICIDES																
MALATHION	0	0	0	0	0	0	0	0	0	0	0	0	540	1758	0	0
DIMETHOATE	0	0	0	0	0	0	0	0	63	326	153	723	334	1382	236	941
D.D.V.P.	16	28	35	66	1561	3167	0	0	0	0	0	0	0	0	0	0
QUINALPHOS	0	0	0	0	0	0	15	81	0	0	0	0	0	0	0	0
CYPERMETHRIN	0	0	8	47	5	53	93	849	6	57	3	45	0	0	24	108
FENTHION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER PESTICIDES	1176	91641	1907	139991	1868	163792	4534	131268	5453	216253	1443	143124	891	65176	997	9611
OTHER INSECTICIDES	18067	208838	17307	239549	17188	240036	13525	268040	16512	343526	16376	385766	16776	385652	14853	379509
COPPER-OXYCHLORIDE	0	1	0	1	0	2	0	0	0	0	40	138	0	0	0	2
2, 4-D	16	27	1824	2735	2819	5935	2382	4311	2412	3657	601	2315	746	2078	264	509
ISOPROTURON	0	0	0	0	3	4	0	0	0	0	0	0	0	0	0	0
ALUMINIUM PHOSPHIDE	0	0	0	0	5	39	1	27	7	40	0	1	0	1	83	3751
METHYL BROMIDE	24	70	18	107	2	14	28	141	12	63	30	170	0	0	7	55
OTHER HERBICIDES-ANTI SPROUTING PRODUCTS	16149	104626	15248	100387	18044	122207	14232	104807	30307	189422	24959	213811	31871	311738	33297	196835
OTHER FUNGICIDES	7143	85350	7798	98502	7738	97341	7770	101554	11418	145713	16117	226512	16287	257417	12225	210712
TOTAL	42591	490581	44145	581385	49233	632590	42580	611078	66190	899057	59722	972605	67445	1025202	61986	802033
DYES & PIGMENTS																
AZO DYES	630	3509	514	3734	437	4207	306	4096	298	3880	408	4775	323	5548	321	8211
ACID DIRECT DYES(OTHER THAN AZO)	188	1348	248	1942	322	2639	133	1295	163	1073	125	1548	90	1582	123	1738
BASIC DYES	560	4183	647	5445	487	6868	529	8213	735	9836	636	8916	399	5824	305	3925
DISPERSE DYES	4970	23618	4051	23972	1731	19295	2322	23128	2314	20496	2266	20665	2264	19214	1997	18367
FAST COLOUR BASES	426	2314	379	2113	169	1743	265	2149	260	2414	45	773	253	1897	156	1008
OIL SOLUBLE (SOLVENT DYES)	762	5446	846	6414	710	7812	590	6250	525	6140	894	14411	918	13174	720	8745
OPTICAL WHITENING AGENTS	612	5455	593	5540	565	6978	738	8746	588	6492	742	8961	556	7156	570	5446
ORGANIC PIGMENT	100	678	65	271	138	471	98	272	107	646	93	444	275	870	181	1099
PIGMENT EMULSION	7085	47759	8261	52679	7985	57272	7303	54365	6443	53389	7080	65345	7314	69850	7519	71245
REACTIVE DYES	3460	28744	3340	24642	3117	26440	3661	27931	2962	21959	3461	28663	2819	22464	3335	26109
SULPHUR DYES (SULPHUR BLACK)	1283	2638	1252	2916	1116	3286	1041	3128	1337	3294	1810	5523	3363	9298	4111	9424
VAT DYES	23527	53539	26368	59134	21571	77638	16400	63470	13310	40263	20402	89474	11536	57921	12660	51920
SOLUBILISED VAT DYES	337	756	319	764	358	1289	170	810	108	463	22	261	19	444	23	363
FOOD COLOURS	1041	4859	1162	5057	1364	6747	1215	6695	375	6268	449	6638	350	7628	400	9456
NAPHTHOLS	1107	3750	1286	4446	1255	5267	1374	6559	1465	5757	1355	8239	1408	6248	2047	6843
OTHER DYES	183	1533	512	2239	2337	7151	2265	7188	2332	7239	2439	8260	2671	9706	2308	10164
INORGANIC PIGMENTS	9597	24784	13128	30075	12790	43319	12173	57140	12017	63057	11430	53765	10079	51574	12857	50678
TOTAL	55868	214913	62971	231383	56452	278422	50583	281435	45339	252666	53657	326661	44637	290398	49633	284741
IMPORTS OF MAJOR CHEMICALS	5399954	2060148	5936999	2594226	6379257	3142576	6557452	2565920	5983070	2749020	6385199	4164612	6877809	4136773	7333548	3779129

Source: DGCIS, Kolkata, M/o Commerce and Industry

Table 18: Net Imports of Major Chemicals (Product Wise) during 2016-17 to 2023-24

[QTY in MT & VAL in Rs. Lakh]

PRODUCT	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
ALKALI CHEMICALS																
SODA ASH	630930	91697	662535	92380	778134	129698	709955	125378	570010	91079	312501	43263	373570	125983	618927	148860
CAUSTIC SODA	340986	84618	261668	86553	36102	8264	121851	33450	-27317	-4751	-139767	-54620	-322358	-168680	-243904	-92133
LIQUID CHLORINE	-5023	-855	-3681	-466	-4433	-283	-4135	-836	-3739	-1139	-4141	-1072	-5623	-1639	-5631	-1842
TOTAL	966893	175460	920522	178467	809803	137679	827671	157992	538954	85189	168593	-12429	45589	-44336	369392	54885
INORGANIC CHEMICALS																
ALUMINIUM FLUORIDE	46243	26172	49552	28871	61932	55712	39000	36700	59178	46187	73363	52631	54264	55715	52748	50698
CALCIUM CARBIDE	55199	23368	55187	23683	44996	21350	30847	14263	32537	17637	21221	14787	21398	16308	24773	12941
CARBON BLACK	-203432	-4990	63937	70659	155699	145725	53474	49910	51745	41943	-47605	-62302	-97764	-108000	-162440	-171236
POTASSIUM CHLORATE	-1558	-1084	-1912	-1223	-2896	-1852	-3123	-2071	-1686	-919	-1981	-1555	-2687	-3032	-2997	-3533
SODIUM CHLORATE	7329	2851	7747	2785	13430	5843	24082	11248	11584	5113	16631	6788	21814	14707	20330	16519
TITANIUM DIOXIDE	5718	12727	4141	9394	7201	15943	10181	20171	6906	13586	9083	20848	13573	41155	12755	36593
RED PHOSPHORUS	-454	-1756	-455	-1713	-581	-2191	-632	-2510	-578	-2442	-626	-3627	-672	-5524	-521	-3174
HYDROGEN PEROXIDE	56798	15626	68358	19091	83998	36706	51919	15376	19278	7097	27792	9297	-10457	-13582	7964	-1330
CALCIUM CARBONATE	666641	51001	809228	54546	1038988	75279	1130043	77436	814085	54693	974446	84326	1014872	93041	572194	32107
TOTAL	632484	123915	1055783	206093	1402767	352515	1335791	220523	993049	182895	1072324	121193	1014341	90788	524806	-30415
ORGANIC CHEMICALS																
ACETIC ACID	834894	187681	872295	285223	919477	411884	913746	267444	893648	269424	1032596	758413	1089501	483895	1094519	407208
ACETIC ANHYDRIDE	-18171	-9159	-15263	-11397	-6169	-3882	0	-1099	-5153	-4823	196	-1779	-21970	-25786	-25248	-20653
ACETONE	132662	60854	141824	71802	105859	46204	61398	22448	53895	34318	97052	67277	96941	54745	101664	70337
PHENOL	278174	168409	283822	193133	227084	205970	121732	75662	117893	50214	162550	159353	201784	214249	213596	170780
METHANOL	1624833	292639	1773827	397158	1975769	515655	2273333	422085	2211493	432198	2379267	737069	2774428	738509	3017071	725448
FORMALDEHYDE	-8322	-1300	-10570	-2054	-12462	-2482	-14148	-2373	-15235	-2586	-16478	-3921	-16208	-4624	-26459	-5097
NITROBENZENE	14085	6713	15324	8158	18101	10611	15400	7942	9768	4909	7697	6212	3736	3998	119	39
CITRIC ACID	80011	38314	81869	43558	92960	43126	88547	36511	92670	45532	94357	89147	128295	134995	110919	71127
MALEIC ANHYDRIDE	50581	34454	52394	42701	69833	61589	66775	46665	59483	46643	74353	107487	82281	94324	86738	68576
PENTAERYTHRITOL	17336	17220	15853	16215	16120	18839	18727	18375	12277	10472	13720	18959	15062	18338	21792	22510
ANILINE	44482	29161	65254	58310	88317	81183	80878	53145	72702	47313	91998	113007	101381	137251	148713	182112
CHLORO METHANES	169	102	418	146	1338	940	2355	2015	2401	1955	1783	1913	1340	1550	-57	-122
ISOBUTYLBENZENE	-13430	-14854	-12341	-14384	-11740	-16320	-9703	-14146	-16156	-20894	-8541	-13709	-14280	-28274	-10772	-21596
ONCB	-134	-322	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PNCB	5072	2161	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEK	30712	16531	45312	35991	46693	40517	25266	18900	42476	32938	42353	44548	49007	60861	40383	35557
ACETALDEHYDE	90	313	78	237	-1054	-637	-1026	-518	-945	-124	-843	-315	-10	279	-120	149
ETHANOLAMINES	9970	5206	11300	1939	13505	5794	15008	5876	16310	5957	15524	13658	13256	8862	19523	11491
ETHYL ACETATE	-92035	-47159	-105508	-62047	-115765	-79812	-106227	-61327	-108584	-68240	-115152	-128010	-92817	-84909	-72387	-60304
MENTHOL	-10495	-115035	-11377	-175378	-12017	-240495	-14032	-235153	-15459	-195201	-15739	-182051	-8465	-111927	-628	-33743
ORTHO NITRO TOLUENE	-503	-503	-2383	-2055	-4215	-4144	-7220	-7112	-3682	-3318	-6853	-7332	-6162	-8463	-2508	-3636
TOTAL	2979981	671426	3202128	887256	3411634	1094540	3530809	655340	3419802	686687	3849840	1779926	4397100	1687873	4716858	1620183

PRODUCT	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
PESTICIDES & INSECTICIDES																
MALATHION	-1264	-2274	-1977	-3682	-2499	-5792	-2318	-6230	-1673	-5079	-2772	-9020	-903	-3780	-2278	-7692
DIMETHOATE	-24	-58	-24	-62	-126	-429	-199	-603	-91	-264	57	280	321	1307	116	440
D.D.V.P.	-306	-1117	-458	-1769	872	451	-12	-41	-639	-2620	-468	-1128	-22	-81	-29	-130
QUINALPHOS	-384	-1772	-382	-1645	-281	-1439	-323	-1525	-522	-2909	-811	-5809	-540	-3954	-573	-3069
CYPERMETHRIN	-9416	-45742	-9698	-62666	-13604	-112328	-15029	-94613	-18939	-106285	-19817	-126572	-15185	-95416	-16895	-75345
FENTHION	-10	-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER PESTICIDES	-44384	-117007	-41413	-76519	-37306	-69483	-2882	102820	-702	192717	-4967	119079	-4139	39560	-4572	-16391
OTHER INSECTICIDES	-23404	-102447	-32701	-153948	-45526	-340235	-92827	-572515	-95231	-490199	-108649	-697520	-103258	-825540	-93796	-541863
COPPER-OXYCHLORIDE	-871	-1920	-723	-1731	-806	-2425	-2240	-5896	-1603	-5135	-1727	-7897	-1492	-6858	-1394	-6526
2, 4-D	-20661	-27469	-22301	-33341	-19423	-40412	-17241	-28613	-18685	-29541	-32469	-78259	-39279	-99690	-31767	-47318
ISOPROTURON	-356	-1295	0	0	3	4	0	0	0	0	0	0	0	0	0	0
ALUMINIUM PHOSPHIDE	-127	-515	-505	-1703	-476	-2045	-425	-1882	-757	-2984	-1029	-3240	-599	-2980	-302	1709
METHYL BROMIDE	-1732	-6159	-1982	-7185	-2206	-8370	-1600	-6541	-2077	-9903	-2184	-10918	-1967	-13376	-1827	-12653
OTHER HERBICIDES-ANTI SPROUTING PRODUCTS	-34571	-257415	-51791	-324726	-56014	-472915	-65202	-612583	-71419	-668392	-115950	-983653	-115917	-1242261	-78692	-1003362
OTHER FUNGICIDES	-162230	-259237	-150381	-230668	-178158	-316124	-155191	-323997	-192259	-350950	-217158	-489157	-189358	-583426	-244629	-534129
TOTAL	-299740	-824445	-314336	-899645	-355550	-1371542	-355489	-1552219	-404597	-1481544	-507944	-2293814	-472338	-2836495	-476638	-2246329
DYES & PIGMENTS																
AZO DYES	-59760	-158947	-69482	-178051	-72562	-221017	-68046	-206217	-63827	-175287	-76240	-241772	-61797	-217502	-63475	-188074
ACID DIRECT DYES(OTHER THAN AZO)	-4246	-18341	-4850	-19713	-4781	-23506	-5468	-27371	-5729	-28511	-6871	-38643	-6065	-33846	-7345	-36158
BASIC DYES	-8669	-22003	-10110	-26777	-11530	-37717	-12201	-40674	-12850	-41304	-13277	-51754	-13294	-54610	-16533	-55114
DISPERSE DYES	-11108	-36294	-10409	-32942	-18821	-88352	-21040	-110032	-16207	-73021	-22070	-99942	-14649	-70649	-13045	-48274
FAST COLOUR BASES	-1748	-13452	-1663	-7613	-2483	-13244	-5099	-44780	-3407	-19402	-3963	-27500	-2078	-15902	-2067	-10100
OIL SOLUBLE (SOLVENT DYES)	-7940	-33993	-8149	-36492	-9485	-58996	-10501	-70321	-8581	-59218	-9762	-77668	-8108	-69645	-7758	-61028
OPTICAL WHITENING AGENTS	-26345	-40785	-29531	-42529	-29694	-59880	-25346	-73978	-20870	-37889	-22706	-54502	-16135	-44991	-16104	-39600
ORGANIC PIGMENT	29	385	3	86	123	373	48	-61	40	417	64	360	259	807	75	819
PIGMENT EMULSION	-81895	-344941	-93790	-388574	-102541	-437326	-103366	-479674	-110537	-527807	-123291	-692263	-89876	-556022	-94134	-511817
REACTIVE DYES	-124957	-350606	-144077	-388438	-155413	-484986	-165987	-474352	-149617	-404531	-177179	-562409	-131895	-461029	-140935	-437262
SULPHUR DYES (SULPHUR BLACK)	-740	-44	-4215	-2878	-4604	-4017	-3469	-2105	-2364	-821	-3755	-2435	49	4393	1244	5727
VAT DYES	22123	30802	24661	32527	17096	31354	11876	-553	9667	-23324	13466	8104	8339	1301	10305	8128
SOLUBILISED VAT DYES	306	491	273	235	295	500	99	-375	25	-296	-52	-782	-43	-600	-31	-500
FOOD COLOURS	-27318	-74633	-29948	-82072	-27643	-100597	-24132	-101091	-29896	-112026	-34638	-136797	-30635	-141122	-32017	-140670
NAPHTHOLS	-969	-1003	-1043	-1279	-2021	-3074	-2795	-4908	-3517	-5137	-1698	-232	-1096	-503	-2180	-2163
OTHER DYES	-12528	-23444	-13223	-23988	-11284	-24045	-12953	-27316	-15141	-26847	-15491	-30243	-13910	-28487	-14752	-25421
INORGANIC PIGMENTS	-17639	-5825	-27217	-9409	-33370	2271	-31334	16829	-36245	17289	-39438	-1366	-39335	-5626	-44297	-15778
TOTAL	-363404	-1092633	-422770	-1207907	-468718	-1522259	-479714	-1646979	-469056	-1517715	-536901	-2009844	-420269	-1694033	-443049	-1557285
NET IMPORTS OF MAJOR CHEMICALS	3916214	-946277	4441327	-835736	4799936	-1309067	4859068	-2165343	4078152	-2044488	4045912	-2414968	4564423	-2796203	4691369	-2158961

Source: DGCI, Kolkata, M/o Commerce and Industry

Table 19: Top Five Export Destinations of selected Chemicals during 2023-24

PRODUCTS	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
SODA ASH	BANGLADESH PR	165474.83	38920.86
	PHILIPPINES	39284.76	9366.02
	INDONESIA	30982.10	6606.08
	SAUDI ARAB	21934.29	5654.44
	THAILAND	21516.61	5524.70
	Product Total	279192.58	66072.09
CAUSTIC SODA	SOUTH AFRICA	62289.39	20994.69
	INDONESIA	56832.54	18443.81
	KENYA	40824.50	14567.14
	TANZANIA REP	38741.25	14549.41
	SAUDI ARAB	30795.08	10379.45
	Product Total	229482.76	78934.49
LIQUID CHLORINE	SRI LANKA DSR	2000.95	378.03
	KENYA	1071.00	323.90
	NIGERIA	581.40	322.64
	U ARAB EMTS	524.35	118.34
	NEPAL	477.46	29.92
	Product Total	4655.15	1172.82
ALUMINIUM FLUORIDE	TURKEY	1724.66	299.03
	U ARAB EMTS	300.00	87.46
	JAPAN	90.00	119.53
	U S A	0.25	2.97
	GERMANY	0.05	0.21
	Product Total	2114.96	509.19
CALCIUM CARBIDE	BANGLADESH PR	398.60	369.76
	NEPAL	26.02	10.85
	BHUTAN	25.10	24.74
	QATAR	0.30	0.58
	MALDIVES	0.00	0.02
	Product Total	450.03	405.95
CARBON BLACK	THAILAND	38008.47	38435.63
	VIETNAM SOC REP	36658.35	34521.91
	SRI LANKA DSR	34563.19	36064.06
	U S A	27651.65	35460.19
	U ARAB EMTS	22774.99	28801.31
	Product Total	159656.64	173283.10
POTASSIUM CHLORATE	KENYA	927.00	1012.96
	THAILAND	360.00	385.64
	VIETNAM SOC REP	324.00	316.35
	SRI LANKA DSR	253.00	302.98
	PHILIPPINES	231.00	290.17
	Product Total	2095.00	2308.11
SODIUM CHLORATE	NEPAL	8.05	2.83
	GERMANY	0.26	111.52
	ZAMBIA	0.01	0.27
	RUSSIA	0.00	0.18
	PERU	0.00	0.18
	Product Total	8.32	114.98
TITANIUM DIOXIDE	U S A	1863.12	3962.81
	JAPAN	926.43	1714.87
	ITALY	461.30	1014.02
	U ARAB EMTS	439.49	826.57
	NEPAL	163.54	404.06

PRODUCTS	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
	Product Total	3853.86	7922.32
RED PHOSPHORUS	U S A	186.16	1080.84
	U ARAB EMTS	143.30	846.36
	BRAZIL	55.80	341.10
	SOUTH AFRICA	28.80	187.80
	KENYA	18.00	96.91
	Product Total	432.06	2553.01
HYDROGEN PEROXIDE	RUSSIA	12168.00	5040.32
	GHANA	4745.60	1772.73
	SOUTH AFRICA	3853.00	1303.67
	LITHUANIA	3480.00	1268.60
	U ARAB EMTS	3479.43	1207.82
	Product Total	27726.03	10593.14
CALCIUM CARBONATE	NEPAL	18287.62	3739.92
	SOUTH AFRICA	7041.53	2495.15
	SRI LANKA DSR	5190.31	1053.14
	BANGLADESH PR	3930.25	4548.71
	U S A	2353.53	1807.06
	Product Total	36803.24	13643.99
ACETIC ACID	U ARAB EMTS	5468.58	2525.10
	BANGLADESH PR	2421.60	1489.68
	BELGIUM	1635.19	977.21
	SRI LANKA DSR	1128.56	645.24
	SOUTH AFRICA	1012.59	639.95
	Product Total	11666.51	6277.18
ACETIC ANHYDRIDE	BELGIUM	36440.93	27543.92
	NETHERLAND	1920.00	1618.46
	KOREA RP	1293.61	831.54
	TURKEY	1179.52	1261.35
	VIETNAM SOC REP	831.22	794.68
	Product Total	41665.28	32049.94
ACETONE	U S A	11571.56	9579.71
	U ARAB EMTS	4664.10	4302.04
	KENYA	1254.42	1133.45
	TANZANIA REP	778.09	724.38
	SRI LANKA DSR	580.33	533.42
	Product Total	18848.50	16273.00
PHENOL	U ARAB EMTS	7512.12	7310.61
	IRAN	4442.00	4382.43
	TAIWAN	2697.94	2419.53
	NEPAL	2352.54	2175.69
	EGYPT A RP	1906.31	2009.38
	Product Total	18910.91	18297.63
METHANOL	BANGLADESH PR	18545.10	6142.69
	SRI LANKA DSR	11270.66	3042.77
	NIGERIA	6462.91	2460.84
	U ARAB EMTS	5263.41	1263.81
	KENYA	3958.92	1507.51
	Product Total	45501.01	14417.62
FORMALDEHYDE	NEPAL	20517.83	3223.20
	BHUTAN	1058.76	181.16
	CHILE	796.20	506.65
	KENYA	590.05	159.47
	NIGERIA	550.64	156.28
	Product Total	23513.47	23513.47
	JAPAN	60.01	63.89

PRODUCTS	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
NITROBENZENE	INDONESIA	40.01	44.16
	CAMBODIA	28.28	44.89
	U ARAB EMTS	25.00	20.68
	NEPAL	13.87	30.90
	Product Total	167.17	204.53
CITRIC ACID	U S A	5376.17	6373.53
	SPAIN	200.00	169.26
	NEPAL	146.81	122.78
	BRAZIL	124.55	394.56
	BANGLADESH PR	75.70	117.34
	Product Total	5923.23	7177.46
MALEIC ANHYDRIDE	SAUDI ARAB	178.00	222.65
	QATAR	55.00	55.01
	U ARAB EMTS	53.00	51.51
	BANGLADESH PR	32.80	54.02
	KENYA	11.00	24.29
	Product Total	329.80	407.46
PENTAERYTHRITOL	U S A	1314.66	3141.55
	NETHERLAND	252.00	458.09
	COLOMBIA	180.00	317.11
	SWEDEN	76.00	176.58
	BANGLADESH PR	30.00	51.05
	Product Total	1852.66	4144.38
ANILINE	TURKEY	16.01	35.52
	MEXICO	4.60	10.58
	THAILAND	3.20	6.12
	EGYPT A RP	1.00	2.56
	BELGIUM	0.55	7.99
	Product Total	25.36	62.76
CHLORO METHANES	SAUDI ARAB	31.41	69.23
	U S A	24.06	53.72
	NEPAL	0.83	0.29
	TANZANIA REP	0.28	0.14
	IRAQ	0.06	0.31
	Product Total	56.63	123.70
ISOBUTYLBENZENE	CHINA P RP	7161.94	15193.13
	U S A	3244.00	5677.01
	JAPAN	360.00	685.88
	KOREA RP	6.30	35.02
	CANADA	0.00	4.79
	Product Total	10772.24	21595.83
MEK	U ARAB EMTS	1050.00	979.67
	NIGERIA	24.42	27.35
	JAPAN	9.51	4.46
	NEPAL	1.39	4.20
	GERMANY	0.43	7.45
	Product Total	1085.75	1023.12
ACETALDEHYDE	TURKEY	288.46	275.79
	BELGIUM	17.60	36.32
	NEPAL	0.71	0.41
	UGANDA	0.23	0.36
	BANGLADESH PR	0.06	0.31
	Product Total	307.06	313.19
ETHANOLAMINES	TURKEY	679.83	527.08
	KOREA RP	408.82	2683.71
	CHINA P RP	402.81	1468.39

PRODUCTS	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
	U S A	318.65	497.54
	U ARAB EMTS	289.51	960.33
	Product Total	2099.62	6137.06
ETHYL ACETATE	NIGERIA	17910.61	15225.68
	KENYA	6200.84	5390.48
	ITALY	5782.48	4504.89
	BANGLADESH PR	5756.44	4914.44
	U ARAB EMTS	4817.39	3805.06
	Product Total	40467.75	33840.54
MENTHOL	CHINA P RP	6386.67	69751.12
	U S A	1179.40	15611.85
	SINGAPORE	716.92	7981.63
	JAPAN	646.20	8425.81
	NETHERLAND	490.95	6632.74
	Product Total	9420.13	108403.15
ORTHO NITRO TOLUENE	GERMANY	1148.00	1524.02
	JAPAN	732.36	1169.97
	KOREA RP	378.88	595.91
	NETHERLAND	249.14	346.22
	Product Total	2508.38	3636.11
MALATHION	MEXICO	920.00	3049.37
	TURKEY	820.00	2779.95
	MALAYSIA	172.00	609.41
	PHILIPPINES	120.00	431.56
	GUATEMALA	59.00	195.44
	Product Total	2091.00	7065.73
DIMETHOATE	U ARAB EMTS	66.45	261.83
	DJIBOUTI	27.30	96.53
	BANGLADESH PR	12.60	37.06
	TANZANIA REP	8.4	41.777
	PAKISTAN IR	3.27	10.164
	Product Total	118.02	447.36
D.D.V.P.	TANZANIA REP	29.24	130.32
	Product Total	29.24	130.32
QUINALPHOS	VIETNAM SOC REP	430.88	2587.61
	INDONESIA	93.26	288.02
	BANGLADESH PR	47.08	179.36
	SOUTH AFRICA	0.68	10.23
	JORDAN	0.54	3.07
	Product Total	572.43	3068.28
CYPERMETHRIN	CHINA P RP	3200.60	16657.96
	THAILAND	1561.24	7424.58
	NIGERIA	1501.85	3010.59
	U ARAB EMTS	1228.74	5359.23
	BRAZIL	802.00	4252.38
	Product Total	8294.44	36704.73
OTHER PESTICIDES	BRAZIL	1155.28	4155.33
	NEPAL	549.22	1663.04
	BANGLADESH PR	485.58	1251.70
	TANZANIA REP	450.58	1060.93
	U S A	260.26	3126.72
	Product Total	2900.91	11257.70
OTHER INSECTICIDES	BRAZIL	40130.54	414554.65
	BANGLADESH PR	7975.11	20930.99
	U S A	5133.52	86583.40
	VIETNAM SOC REP	3877.81	25951.43

PRODUCTS	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
	NIGERIA	3635.66	10991.23
	Product Total	60752.65	559011.71
COPPER-OXYCHLORIDE	SPAIN	208.00	992.33
	MOROCCO	163.00	768.37
	VIETNAM SOC REP	120.01	610.42
	THAILAND	115.00	497.07
	EGYPT A RP	100.00	420.17
	Product Total	706.01	3288.37
2, 4-D	BRAZIL	10117.11	14563.61
	U S A	7752.89	12262.22
	ETHIOPIA	1571.72	2906.45
	ARGENTINA	1530.00	2270.47
	THAILAND	1297.80	1749.83
	Product Total	22269.51	33752.59
ALUMINIUM PHOSPHIDE	NIGERIA	90.36	347.30
	TURKEY	86.20	491.62
	ZAMBIA	57.60	375.38
	BANGLADESH PR	57.00	288.37
	MALAWI	24.00	134.78
	Product Total	315.16	1637.46
METHYL BROMIDE	U ARAB EMTS	390.62	2784.06
	VIETNAM SOC REP	388.76	2383.30
	EGYPT A RP	272.00	1868.33
	AUSTRALIA	180.00	963.16
	EL SALVADOR	137.30	925.97
	Product Total	1368.69	8924.82
OTHER HERBICIDES-ANTI SPROUTING PRODUCTS	U S A	30818.99	517782.28
	BRAZIL	10764.38	84205.51
	ARGENTINA	7269.26	59641.76
	FRANCE	6200.11	61318.10
	CHINA P RP	4106.21	27508.10
	Product Total	59158.95	750455.74
OTHER FUNGICIDE NES	BRAZIL	63699.21	181933.87
	BANGLADESH PR	29267.54	22935.21
	U S A	13061.12	101730.31
	COLOMBIA	11650.99	31767.61
	U ARAB EMTS	10504.31	7560.53
	Product Total	128183.16	345927.53
AZO DYES	ITALY	9747.74	35394.84
	CHINA P RP	9057.14	27277.08
	NETHERLAND	4462.33	12704.95
	SPAIN	4438.58	15684.19
	BRAZIL	3304.89	11363.98
	Product Total	31010.68	102425.03
ACID DIRECT DYES(OTHER THAN AZO)	U S A	2032.36	8257.69
	CHINA P RP	853.77	4768.76
	MEXICO	509.00	1909.93
	MALAYSIA	424.82	1412.28
	ITALY	417.69	2880.42
	Product Total	4237.64	19229.08
BASIC DYES	CHINA P RP	4212.40	11986.05
	THAILAND	1361.50	2848.26
	NETHERLAND	1032.70	2972.33
	U S A	1011.75	5311.86
	BRAZIL	913.84	2904.26
	Product Total	8532.19	26022.76

PRODUCTS	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
DISPERSE DYES	TURKEY	3705.64	10700.89
	HONDURAS	1607.23	8029.48
	CHINA P RP	1168.36	7697.76
	EGYPT A RP	820.75	2216.86
	BRAZIL	767.43	3035.43
	Product Total	8069.41	31680.42
FAST COLOUR BASES	NETHERLAND	413.45	1776.42
	MEXICO	269.50	1171.45
	JAPAN	242.11	1364.21
	CHINA P RP	208.20	1257.76
	U S A	179.50	914.51
	Product Total	1312.76	6484.34
OIL SOLUBLE (SOLVENT DYES)	U K	1247.27	6650.44
	U S A	910.83	10402.80
	CHINA P RP	621.36	7570.38
	U ARAB EMTS	595.10	4641.87
	SINGAPORE	485.78	2291.22
	Product Total	3860.34	31556.70
OPTICAL WHITENING AGENTS	SOUTH AFRICA	1830.26	3431.23
	TURKEY	1485.77	2967.83
	U ARAB EMTS	1426.85	2106.53
	BANGLADESH PR	1384.62	2157.69
	JAPAN	1293.42	1003.00
	Product Total	7420.91	11666.28
ORGANIC PIGMENT	NIGERIA	92.71	103.97
	BANGLADESH PR	7.04	77.95
	SAUDI ARAB	1.65	8.39
	SRI LANKA DSR	1.61	3.98
	OMAN	1.20	7.04
	Product Total	104.20	201.31
PIGMENT EMULSION	U S A	10751.19	74014.86
	CHINA P RP	7634.18	37113.62
	NETHERLAND	5997.96	39101.16
	VIETNAM SOC REP	5333.08	23468.37
	BRAZIL	4506.56	24798.60
	Product Total	34222.97	198496.59
REACTIVE DYES	BANGLADESH PR	39837.51	102690.59
	TURKEY	32479.41	89349.27
	BRAZIL	7343.95	22203.77
	INDONESIA	6835.06	22900.06
	HONDURAS	6561.86	23803.72
	Product Total	93057.78	260947.41
SULPHUR DYES (SULPHUR BLACK)	BANGLADESH PR	746.22	909.20
	TURKEY	524.39	621.64
	EGYPT A RP	493.60	503.61
	ITALY	347.05	432.81
	INDONESIA	136.20	123.17
	Product Total	2247.46	2590.42
VAT DYES	U S A	273.63	4507.45
	CHINA P RP	249.15	7639.70
	MAURITANIA	217.48	3471.12
	BRAZIL	196.26	2990.93
	BANGLADESH PR	179.81	2481.45
	Product Total	1116.31	21090.65
	INDONESIA	34.06	648.94
	BANGLADESH PR	6.78	56.89

PRODUCTS	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
SOLUBILISED VAT DYES	THAILAND	4.36	18.62
	MALAYSIA	2.35	36.67
	ARGENTINA	2.30	37.88
	Product Total	49.85	798.99
FOOD COLOURS	CHINA P RP	3169.04	13366.77
	U S A	2270.17	13967.33
	MEXICO	1716.99	8357.40
	INDONESIA	1672.07	8757.56
	U ARAB EMTS	1496.50	5596.98
	Product Total	10324.77	50046.04
NAPTHOLS	U S A	1062.85	2650.22
	SOUTH AFRICA	596.38	665.26
	TURKEY	497.42	643.38
	RUSSIA	369.76	567.65
	POLAND	279.41	361.80
	Product Total	2805.81	4888.32
OTHER DYES	NETHERLAND	2752.09	4097.88
	CHINA P RP	1543.03	4102.98
	TAIWAN	1118.33	1528.32
	U K	1091.78	1449.37
	POLAND	995.78	1204.22
	Product Total	7501.00	12382.76
INORGANIC PIGMENTS	KENYA	6995.62	4781.82
	ECUADOR	5124.30	3155.09
	ALGERIA	3000.86	5571.95
	COLOMBIA	2794.75	1546.19
	TANZANIA REP	2701.67	2259.75
	Product Total	20617.19	17314.80

Source: DGCIS, Kolkata, M/o Commerce and Industry

Table 20: Top Five Import Destinations of selected Chemicals during 2023-24			
PRODUCTS	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
SODA ASH	TURKEY	367288.76	79119.24
	U S A	209921.35	49520.56
	RUSSIA	134150.05	31264.01
	KENYA	90379.52	23420.12
	U ARAB EMTS	90048.34	21611.03
	Product Total	891788.02	204934.95
CAUSTIC SODA	JAPAN	90024.06	32567.41
	IRAN	67815.40	21614.26
	OMAN	29211.84	8224.27
	KOREA RP	16782.48	6900.50
	BANGLADESH PR	14337.00	5521.97
	Product Total	218170.78	74828.41
LIQUID CHLORINE	KOREA RP	13.09	124.79
	FRANCE	0.30	6.46
	GERMANY	0.00	0.05
	CHINA P RP	0.00	3.25
	ITALY	0.00	0.00
	Product Total	13.40	134.55
ALUMINIUM FLUORIDE	ITALY	22275.00	24409.90
	CHINA P RP	10609.00	12201.85
	BAHARAIN IS	6680.02	1684.50
	INDONESIA	3780.00	3718.31
	MEXICO	2350.00	2328.76
	Product Total	45694.02	44343.32
CALCIUM CARBIDE	CHINA P RP	24361.95	13034.65
	INDONESIA	861.00	312.69
	Product Total	25222.95	13347.34
CARBON BLACK	CHINA P RP	42694.24	40026.49
	KOREA RP	26244.11	31372.30
	TURKEY	23420.61	20352.86
	U ARAB EMTS	21694.08	17641.07
	SAUDI ARAB	8742.99	7898.49
	Product Total	122796.03	117291.21
POTASSIUM CHLORATE	BRUNEI	173.00	8.62
	U K	0.02	0.69
	BELGIUM	0.01	0.29
	GERMANY	0.00	0.16
	U S A	0.00	0.19
	Product Total	173.04	9.95
SODIUM CHLORATE	U S A	6578.76	5140.13
	FINLAND	5977.50	5152.30
	CHINA P RP	3861.00	2717.84
	SWEDEN	3402.50	2459.42
	URUGUAY	300.00	276.54
	Product Total	20119.76	15746.23
TITANIUM DIOXIDE	KOREA RP	6150.00	12314.13
	CHINA P RP	4789.32	10368.27
	JAPAN	1868.80	4488.36
	BELGIUM	1774.59	7488.74

PRODUCTS	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
	GERMANY	1157.84	5232.91
	Product Total	15740.56	39892.40
HYDROGEN PEROXIDE	BANGLADESH PR	44616.78	11395.15
	BELGIUM	43.23	88.35
	GERMANY	0.59	14.26
	FRANCE	0.16	32.74
	BRAZIL	0.00	0.01
	Product Total	44660.76	11530.50
CALCIUM CARBONATE	VIETNAM SOC REP	269878.08	20512.96
	EGYPT A RP	228786.84	14176.14
	MALAYSIA	84574.58	9671.40
	JORDAN	23016.68	2161.00
	TURKEY	2861.00	635.29
	Product Total	609117.17	47156.79
ACETIC ACID	CHINA P RP	510621.31	191413.75
	MALAYSIA	214610.61	79864.25
	SINGAPORE	154335.19	56558.70
	TAIWAN	100739.96	39633.26
	SAUDI ARAB	83042.28	31199.27
	Product Total	1063349.35	398669.23
ACETIC ANHYDRIDE	SAUDI ARAB	15665.20	11337.32
	CHINA P RP	2024.19	1333.97
	Product Total	17689.39	12671.30
ACETONE	THAILAND	47417.39	34420.71
	TAIWAN	36657.54	25995.78
	SAUDI ARAB	19286.90	13173.53
	KOREA RP	15551.15	12082.41
	SINGAPORE	3529.32	2535.88
	Product Total	122442.29	88208.31
PHENOL	THAILAND	87981.36	73573.98
	SAUDI ARAB	47193.30	38254.82
	U S A	27986.47	24009.87
	SOUTH AFRICA	21583.39	17690.78
	CHINA P RP	13390.42	11651.47
	Product Total	198134.93	165180.92
METHANOL	OMAN	1079192.75	256800.94
	SAUDI ARAB	590090.41	145780.03
	IRAN	531406.70	126885.92
	QATAR	306407.68	73441.44
	BAHARAIN IS	221753.83	55185.09
	Product Total	2728851.36	658093.42
FORMALDEHYDE	SPAIN	1.95	12.10
	GERMANY	1.18	21.12
	CHINA P RP	0.50	23.91
	U K	0.03	0.64
	U S A	0.03	0.73
	Product Total	3.68	58.50
NITROBENZENE	KOREA RP	304.20	275.20
	GERMANY	0.01	0.17
	U S A	0.00	0.04
	Product Total	304.21	275.41

PRODUCTS	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
CITRIC ACID	CHINA P RP	112096.09	69216.16
	TURKEY	3370.17	7077.77
	U ARAB EMTS	1004.03	569.84
	BELGIUM	640.04	1660.09
	THAILAND	376.00	341.55
	Product Total	117486.33	78865.42
MALEIC ANHYDRIDE	CHINA P RP	52759.69	40662.29
	TAIWAN	11006.60	8508.18
	MALAYSIA	7620.32	6898.95
	KOREA RP	7415.48	6635.43
	RUSSIA	6014.25	4476.86
	Product Total	84816.34	67181.70
PENTAERYTHRITOL	SAUDI ARAB	8160.00	9120.80
	CHINA P RP	4460.30	4933.68
	TAIWAN	3468.50	3828.24
	SWEDEN	3221.00	3675.89
	RUSSIA	2258.00	2203.76
	Product Total	21567.80	23762.36
ANILINE	CHINA P RP	53584.81	64892.33
	U S A	43807.09	52490.03
	NETHERLAND	26591.61	33899.36
	BELGIUM	22052.34	27727.86
	CZECH REPUBLIC	1419.54	1636.99
	Product Total	147455.39	180646.57
MEK	CHINA P RP	14566.61	12507.29
	SOUTH AFRICA	9380.00	8199.30
	KOREA RP	8994.95	7964.74
	TAIWAN	3866.28	3987.02
	NETHERLAND	2571.20	2033.79
	Product Total	39379.05	34692.12
ACETALDEHYDE	BELGIUM	113.16	213.26
	NETHERLAND	69.56	131.57
	U S A	2.54	46.69
	U K	1.24	65.18
	FRANCE	0.06	5.78
	Product Total	186.55	462.48
ETHANOLAMINES	U ARAB EMTS	5332.09	5298.71
	MALAYSIA	4269.04	4064.18
	SAUDI ARAB	4240.84	4127.55
	THAILAND	4109.40	3964.93
	BELGIUM	1407.81	1418.38
	Product Total	19359.18	18873.75
ETHYL ACETATE	SAUDI ARAB	2060.43	1404.43
	KENYA	84.00	126.02
	U S A	64.04	862.84
	KOREA RP	27.41	30.32
	SWITZERLAND	9.60	201.96
	Product Total	2245.48	2625.56

PRODUCTS	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
MENTHOL	MALAYSIA	4233.60	42518.26
	CHINA P RP	4224.08	38151.12
	U S A	1086.43	10675.47
	SINGAPORE	980.54	9799.66
	GERMANY	410.96	4590.64
	Product Total	10935.60	105735.15
DIMETHOATE	BELGIUM	91.35	339.12
	DENMARK	73.08	271.30
	CHINA P RP	72.00	330.27
	Product Total	236.43	940.69
OTHER PESTICIDES	CHINA P RP	776.20	4745.11
	RUSSIA	95.00	742.73
	JAPAN	70.00	553.95
	U S A	48.29	3376.87
	U ARAB EMTS	5.00	34.12
	Product Total	994.49	9452.78
OTHER INSECTICIDES	CHINA P RP	10246.92	99464.40
	ISRAEL	1104.73	14280.90
	NETHERLAND	755.04	38441.61
	JAPAN	752.42	52621.44
	U S A	648.11	110218.09
	Product Total	13507.22	315026.43
2, 4-D	CHINA P RP	198.00	307.51
	TURKEY	66.00	195.34
	GERMANY	0.16	5.76
	Product Total	264.16	508.61
ALUMINIUM PHOSPHIDE	JAPAN	82.80	3750.43
	U S A	0.02	0.11
	ISRAEL	0.01	0.71
	INDONESIA	0.00	0.01
	MALAYSIA	0.00	0.02
	Product Total	82.83	3751.28
OTHER HERBICIDES-ANTI SPROUTING PRODUCTS	U S A	12732.72	47223.05
	CHINA P RP	8652.76	47571.77
	ISRAEL	6157.54	45577.48
	TAIWAN	3220.80	6135.36
	JAPAN	688.33	33753.14
	Product Total	31452.14	180260.81
OTHER FUNGICIDE NES	CHINA P RP	3045.38	41372.40
	THAILAND	1859.15	9592.71
	NETHERLAND	1181.35	52272.37
	U K	1174.63	18435.63
	BELGIUM	1054.19	21678.16
	Product Total	8314.71	143351.27
AZO DYES	SPAIN	74.47	4904.95
	CHINA P RP	67.84	584.85
	ITALY	31.66	289.24
	THAILAND	30.87	253.41
	MALAYSIA	27.00	109.12
	Product Total	231.83	6141.56

PRODUCTS	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
ACID DIRECT DYES(OTHER THAN AZO)	ITALY	23.70	215.11
	CHINA P RP	22.41	235.85
	GERMANY	15.29	248.43
	THAILAND	12.86	149.80
	U S A	11.82	245.50
	Product Total	86.08	1094.69
BASIC DYES	CHINA P RP	282.81	3229.17
	SWITZERLAND	9.14	144.33
	GERMANY	7.18	138.48
	ITALY	3.69	328.49
	JAPAN	0.86	10.71
	Product Total	303.68	3851.19
DISPERSE DYES	CHINA P RP	1577.92	12115.46
	KOREA RP	75.51	614.25
	INDONESIA	64.97	1081.43
	MEXICO	49.23	1061.27
	GERMANY	39.15	806.90
	Product Total	1806.78	15679.31
FAST COLOUR BASES	CHINA P RP	146.66	743.97
	NETHERLAND	3.52	122.28
	BELGIUM	2.29	111.24
	GERMANY	1.92	9.16
	FRANCE	0.95	6.89
	Product Total	155.33	993.53
OIL SOLUBLE (SOLVENT DYES)	CHINA P RP	302.97	5189.04
	KOREA RP	177.36	1114.88
	U ARAB EMTS	142.54	944.38
	TAIWAN	16.50	95.15
	BELGIUM	15.83	278.19
	Product Total	655.20	7621.63
OPTICAL WHITENING AGENTS	CHINA P RP	179.63	2020.24
	NETHERLAND	153.04	1118.54
	BELGIUM	151.50	1763.68
	GERMANY	28.37	251.16
	PORTUGAL	22.25	31.11
	Product Total	534.78	5184.73
ORGANIC PIGMENT	CHINA P RP	82.60	448.54
	U S A	62.38	287.55
	POLAND	21.00	29.93
	SPAIN	10.95	58.23
	ITALY	1.62	111.35
	Product Total	178.54	935.60
PIGMENT EMULSION	CHINA P RP	4401.25	28960.64
	BELGIUM	547.34	9746.31
	GERMANY	427.10	9739.05
	KOREA RP	377.00	3498.25
	SPAIN	313.35	1743.12
	Product Total	6066.04	53687.37

PRODUCTS	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
REACTIVE DYES	THAILAND	1276.03	10991.50
	KOREA RP	1070.23	5445.69
	CHINA P RP	439.71	5149.08
	TURKEY	337.01	2151.12
	SINGAPORE	48.84	567.45
	Product Total	3171.83	24304.84
SULPHUR DYES (SULPHUR BLACK)	CHINA P RP	3914.53	8367.61
	SPAIN	150.76	550.85
	HONG KONG	27.00	30.26
	KOREA RP	7.86	374.21
	SWEDEN	6.00	39.33
	Product Total	4106.15	9362.25
VAT DYES	SINGAPORE	6594.60	15488.28
	CHINA P RP	5938.54	35551.52
	SLOVENIA	84.00	418.32
	GERMANY	25.99	214.43
	SWITZERLAND	6.13	141.99
	Product Total	12649.26	51814.55
SOLUBILISED VAT DYES	CHINA P RP	13.06	76.40
	SWITZERLAND	5.04	225.18
	ITALY	4.65	53.50
	TURKEY	0.29	0.87
	JAPAN	0.25	1.41
	Product Total	23.28	357.35
FOOD COLOURS	U S A	156.05	3266.94
	KOREA RP	84.71	505.36
	CHINA P RP	41.40	2171.83
	NETHERLAND	40.06	37.68
	JAPAN	19.52	1413.45
	Product Total	341.73	7395.25
NAPTHOLS	CHINA P RP	1764.43	6199.37
	MALAYSIA	270.00	393.70
	JAPAN	6.23	181.03
	GERMANY	2.52	7.33
	U S A	2.20	33.04
	Product Total	2045.37	6814.47
OTHER DYES	U K	1997.00	6407.64
	U S A	201.46	2933.80
	CHINA P RP	47.69	107.41
	ITALY	18.80	168.79
	THAILAND	12.75	70.86
	Product Total	2277.69	9688.50
INORGANIC PIGMENTS	VIETNAM SOC REP	3188.61	1004.10
	CHINA P RP	2269.97	7811.39
	U ARAB EMTS	1165.84	2416.19
	INDONESIA	1151.60	1810.80
	BELGIUM	673.75	3837.21
	Product Total	8449.75	16879.69

Source: DGCIS, Kolkata, M/o Commerce and Industry

Table 21: Exports of Major Petrochemicals (Group-wise) during 2016-17 to 2023-24

[QTY in MT & VAL in Rs. Lakh]

GROUP	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
SYNTHETIC FIBRES	1025740	922018	1001053	977982	1015666	1172008	1059348	1054987	878619	787040	1202246	1438887	759004	1026104	683488	889562
FIBRE INTERMEDIATES	323096	153574	351358	181069	456955	275919	234372	123612	475165	162929	127582	86540	56213	60804	35761	38224
POLYMERS	912124	667432	1188233	891771	1934155	1558391	1615451	1095332	1488512	968069	921155	942517	586351	622514	705293	689804
SYNTHETIC RUBBER (ELASTOMERS)	38204	46387	51889	54589	63550	70696	74036	73065	95037	79421	89936	111822	70431	97450	92441	103915
SYNTHETIC DETERGENT INTERMEDIATES	7058	5941	1413	1468	1048	1534	1044	1479	1876	1939	7491	8701	2523	3107	3686	5704
PERFORMANCE PLASTICS	972750	636450	1050548	747271	1080286	1018773	968791	739010	217142	198743	283722	353686	181928	287567	157418	231371
OLEFINS	117365	101742	260597	179804	368714	276701	336140	188100	284988	136102	255597	173883	161748	117262	189106	127559
AROMATICS	1749173	885136	3303041	1754998	4550911	2880299	4271477	2337408	4660796	1854685	4434556	2998035	2660009	2132705	1774952	1346591
OTHER PETRO-BASED CHEMICALS	144135	116773	193342	138613	147298	139759	237571	194934	171468	169127	212298	249815	189073	224161	208633	212881
TOTAL EXPORT OF MAJOR PETROCHEMICALS	5289645	3535453	7401474	4927565	9618583	7394080	8798230	5807927	8273603	4358055	7534583	6363886	4667280	4571674	3850778	3645611

Source: DGCIS, Kolkata, M/o Commerce and Industry

Table 22: Imports of Major Petrochemicals (Group-wise) during 2016-17 to 2023-24

[QTY in MT & VAL in Rs. Lakh]

GROUP	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
SYNTHETIC FIBRES	279993	342993	259632	363079	275617	453356	346600	460883	403273	410701	460377	678520	670250	864661	610796	704902
FIBRE INTERMEDIATES	1842229	943136	1808425	1072331	1454656	1056882	1919655	1059484	1441326	649525	2626726	1713284	3355729	2176204	2929291	1771593
POLYMERS	4452258	3267230	4751478	3549286	4479129	3684829	3430180	2639363	2641372	2142272	2941493	3267215	4789378	4956650	5312985	4757153
SYNTHETIC RUBBER (ELASTOMERS)	559919	628042	607867	741750	618500	851418	574832	709547	747278	718860	635138	1144125	673480	1320567	723837	1112058
SYNTHETIC DETERGENT INTERMEDIATES	228229	179003	205984	164533	227136	210428	264058	237426	265406	216258	277828	336160	342892	523554	251536	338928
PERFORMANCE PLASTICS	417442	472270	582692	621047	683851	891721	740577	782460	298958	293817	282523	394910	292316	414336	417879	470823
OLEFINS	83453	60651	50791	43283	69700	57846	75857	51011	43875	33958	91880	76193	94231	102839	68159	57346
AROMATICS	1614652	864845	1321018	708548	1320424	910212	1327535	772834	1300486	542096	1124365	742531	1245729	1123727	1509211	1327413
OTHER PETRO-BASED CHEMICALS	2650608	1764933	3255244	2232102	3227017	2709229	3543017	2388328	3068899	2152067	3291372	3656404	3425800	3404342	3326576	2852163
TOTAL IMPORT OF MAJOR PETROCHEMICALS	12128783	8523103	12843131	9495959	12356030	10825921	12222311	9101336	10210873	7159554	11731702	12009342	14889805	14886880	15150270	13392379

Source: DGCIS, Kolkata, M/o Commerce and Industry

Table 23: Net Imports of Major Petrochemicals (Group Wise) during 2016-17 to 2023-24

[QTY in MT & VAL in Rs. Lakh]

GROUP	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
SYNTHETIC FIBRES	-745747	-579025	-741421	-614903	-740049	-718652	-712748	-594104	-475346	-376339	-741869	-760367	-88754	-161443	-72692	-184660
FIBRE INTERMEDIATES	1519133	789562	1457067	891262	997701	780963	1685283	935872	966161	486596	2499144	1626744	3299516	2115400	2893530	1733369
POLYMERS	3540134	2599798	3563245	2657515	2544974	2126438	1814729	1544031	1152860	1174203	2020338	2324698	4203027	4334136	4607692	4067349
SYNTHETIC RUBBER (ELASTOMERS)	521715	581655	555978	687161	554950	780722	500796	636482	652241	639439	545202	1032303	603049	1223117	631396	1008143
SYNTHETIC DETERGENT INTERMEDIATES	221171	173062	204571	163065	226088	208894	263014	235947	263530	214319	270337	327459	340369	520447	247850	333224
PERFORMANCE PLASTICS	-555308	-164180	-467856	-126224	-396435	-127052	-228214	43450	81816	95074	-1199	41224	110388	126769	260461	239452
OLEFINS	-33912	-41091	-209806	-136521	-299014	-218855	-260283	-137089	-241113	-102144	-163717	-97690	-67517	-14423	-120947	-70213
AROMATICS	-134521	-20291	-1982023	-1046450	-3230487	-1970087	-2943942	-1564574	-3360310	-1312589	-3310191	-2255504	-1414280	-1008978	-265741	-19178
OTHER PETRO-BASED CHEMICALS	2506473	1648160	3061902	2093489	3079719	2569470	3305446	2193394	2897431	1982940	3079074	3406589	3236727	3180181	3117943	2639282
TOTAL NET IMPORT OF MAJOR PETROCHEMICALS	6839138	4987650	5441657	4568394	2737447	3431841	3424081	3293409	1937270	2801499	4197119	5645456	10222525	10315206	11299492	9746768

Table 24: Exports of Major Petrochemicals (Product Wise) 2016-17 to 2023-24

[QTY in MT & VAL in Rs. Lakh]

PRODUCT	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
SYNTHETIC FIBRES																
ACRYLIC FIBRE	48332	60060	39213	52227	45932	71700	40505	59726	25569	33923	23743	43557	28587	61652	20908	45729
NYLON FILAMENT YARN	1857	6462	4014	12111	5794	18888	7748	22360	6098	15495	9363	29452	8708	28857	9387	29703
NYLON INDUSTRIAL YARN/TYRE CORD	1474	1872	1620	2239	1895	2827	3624	5116	4296	5939	5312	9033	6586	12303	8696	14032
POLYESTER FILAMENT YARN	748037	690836	717714	730282	696668	839555	711319	750466	540650	545550	762473	966876	472031	665983	417895	572320
POLYESTER STAPLE FIBRE	213903	150316	227441	169364	255455	225045	285157	204876	291399	172242	383703	329736	227366	228194	207111	185686
POLYPROPYLENE FILAMENT YARN	2077	2690	869	1117	494	713	720	965	729	1005	798	1297	1015	1629	1187	1813
POLYPROPYLENE STAPLE FIBRE	9755	8767	9497	8663	7892	8446	9509	9103	8212	7668	10896	14033	12126	16028	9897	12607
Elastomeric/Spandex Filament Yarn	305	1015	685	1979	1536	4834	766	2375	1666	5218	5958	44903	2585	11458	8407	27672
TOTAL	1025740	922018	1001053	977982	1015666	1172008	1059348	1054987	878619	787040	1202246	1438887	759004	1026104	683488	889562
FIBRE INTERMEDIATES																
ACRYLONITRILE	6	39	1514	1900	1872	3059	2988	3262	8533	8178	1956	3401	12005	15568	4013	4241
CAPROLACTUM	1010	867	53	93	77	129	258	327	6225	4672	25	554	62	130	109	185
DIMETHYL TEREPHTHALATE	1	1	0	0	1	2	0	1	0	0	0	0	58	113	17	29
MONO EHYLENE GLYCOL	62199	45932	137462	90499	292583	175325	151301	81361	325429	105684	71204	48936	39649	37248	29635	29487
PURIFIED TEREPHTHALIC ACID	259880	106735	212329	88577	162422	97404	79825	38661	134978	44395	54397	33649	4439	7745	1987	4282
TOTAL	323096	153574	351358	181069	456955	275919	234372	123612	475165	162929	127582	86540	56213	60804	35761	38224
POLYMERS																
LOW DENSITY POLYETHYLENE	26909	27321	108257	88430	164142	132765	140022	98135	39442	35801	49187	66522	72626	100016	66552	81472
HIGH DENSITY POLYTHYLENE	148142	117815	205797	155550	457416	365235	486892	315945	398659	247524	198169	192824	70053	95448	178419	173281
POLYSTYRENE	82542	75483	69814	67452	63990	64060	49611	43139	36502	27805	44494	52518	39224	46728	59050	62781
POLYPROPYLENE (INC. CO-POLYMER)	574234	382678	552002	397646	718053	596611	539045	386684	861712	561818	546609	547136	351751	324200	349110	324624
EXPANDABLE POLYSTYRENE	3697	3548	3119	3272	3064	3818	2745	2762	894	895	944	1279	2403	3127	2615	2721
POLY VINYL CHLORIDE	6484	6127	6662	6015	2133	1788	2060	1471	16985	8467	2537	2894	967	1337	1929	1614
LINEAR LOW DENSITY POLYTHYLENE	53215	41558	228952	163632	508135	380841	395076	247196	134318	85759	66494	65425	39851	40881	47341	43068
PVC COMPOUND	16901	12902	13630	9774	17222	13273	0	0	0	0	12721	13919	9476	10777	277	243
TOTAL	912124	667432	1188233	891771	1934155	1558391	1615451	1095332	1488512	968069	921155	942517	586351	622514	705293	689804
SYNTHETIC RUBBER (ELASTOMERS)																
STYRENE BUTADIENE RUBBER	27139	27423	40704	36382	46179	43572	44929	37838	39757	28768	35715	38037	36863	42498	48685	48453
POLY BUTADIENE RUBBER	5114	4942	7012	7376	13175	15311	20323	19289	23329	15059	22558	28190	2556	3863	4594	6238
ETHYL PROPYLENE DIMERS	3282	9531	2517	7696	2463	7958	2292	7284	1371	3275	1429	3438	1067	3222	831	2316
ETHYL VINYL ACETATE	1494	1751	901	1314	530	1251	999	1614	1042	1650	1381	3351	4906	8986	1722	2996
NITRILE BUTADIENE RUBBER	451	1092	427	1128	507	1316	719	1316	3823	4326	7134	9282	8097	8482	14873	10650
BUTYL RUBBER	724	1648	328	693	696	1288	4774	5724	25715	26343	21719	29524	16942	30399	21736	33262
TOTAL	38204	46387	51889	54589	63550	70696	74036	73065	95037	79421	89936	111822	70431	97450	92441	103915
SYNTHETIC DETERGENT INTERMEDIATES																
LINEAR ALKYL BENZENE	6440	4816	930	809	323	367	193	253	926	956	6402	7462	1135	1096	2328	3804

PRODUCT	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
ETHYLENE OXIDE	618	1125	483	659	725	1167	851	1226	950	983	1089	1239	1388	2011	1358	1900
TOTAL	7058	5941	1413	1468	1048	1534	1044	1479	1876	1939	7491	8701	2523	3107	3686	5704
PERFORMANCE PLASTICS																
ABS RESIN	294	473	273	445	449	622	328	598	407	673	1744	2197	393	879	499	955
NYLON-6	17656	29593	21353	34774	19744	38965	21214	40855	0	0	0	0	0	0	0	0
POLYMETHYL METHACRYLATE	8557	10230	3563	3584	4323	5218	4632	5586	3296	4774	4104	6781	3381	5101	3201	5080
STYRENE ACRYLONITRILE	671	450	1179	682	387	380	460	362	230	212	817	990	2606	2616	7541	6256
POLYESTER CHIPS/PET CHIPS	937251	557185	1014588	655326	1043386	889691	930982	618181	202297	117960	262129	221810	163189	156350	135681	117466
POLYTETRAFLUOROETHYLENE(PTFE)	8321	38519	9592	52460	11997	83897	11175	73428	10912	75124	14928	121908	12359	122621	10496	101614
TOTAL	972750	636450	1050548	747271	1080286	1018773	968791	739010	217142	198743	283722	353686	181928	287567	157418	231371
OLEFINS																
BUTADIENE	106838	97268	103426	73371	136191	113889	174252	103916	166809	72272	144095	89886	121316	86424	153080	101981
ETHYLENE	27	23	136426	97327	193233	140672	152230	79955	102895	57712	111502	83997	40432	30837	36026	25578
PROPYLENE	10500	4451	20745	9106	39290	22140	9658	4229	15284	6118	0	0	0	1	0	0
TOTAL	117365	101742	260597	179804	368714	276701	336140	188100	284988	136102	255597	173883	161748	117262	189106	127559
AROMATICS																
BENZENE	789425	366822	1286323	662408	1651123	822052	1408477	635303	1507626	559554	1922951	1388168	1451638	1156971	1473996	1093052
MIXED XYLENE	66	110	418	278	981	668	410	297	535	330	46	57	127	167	254	302
ORTHO-XYLENE	154347	74761	185675	86881	225703	122734	177267	100950	309550	127934	234328	148221	121303	108059	11698	11119
TOLUENE	5843	3764	4103	2772	13601	9501	8124	5564	17834	9791	17804	13832	14714	15295	29372	26908
PARAXYLENE	799492	439679	1826522	1002659	2659503	1925344	2677199	1595294	2825251	1157076	2259427	1447757	1072227	852213	259632	215210
TOTAL	1749173	885136	3303041	1754998	4550911	2880299	4271477	2337408	4660796	1854685	4434556	2998035	2660009	2132705	1774952	1346591
OTHER PETRO-BASED CHEMICALS																
ETHYLENE DICHLORIDE	16	8	44861	6510	19181	4478	80857	20134	37412	8605	5902	3221	450	358	117	125
BUTANOL	2292	1189	863	703	452	655	282	287	1032	1288	577	887	627	781	3285	3550
OXO ALCOHOL	1271	731	890	682	2935	1505	1328	1146	740	2021	988	5590	1293	7097	1293	5882
2-ETHYL HEXANOL	2055	1437	2636	1701	3175	2781	46	54	1408	1412	3463	5010	754	1104	545	647
VINYL CHLORIDE MONOMER	0	0	0	0	0	3	0	0	0	1	6	8	25	52	0	1
EPICHLHYDRINE	54	55	49	76	48	90	106	183	58	306	28	275	5248	10478	7201	8143
ISO BUTYLENE	1	3	0	2	0	1	18085	9028	6048	2593	18588	12966	14076	12958	16763	15508
METAXYLENE	64	217	4	263	15	282	35	587	18	857	20	676	41	711	9	452
METHYL ISOBUTYL KETONE	918	788	940	878	2038	1817	2165	1525	667	882	1350	2681	809	1271	1652	2412
PIB	2237	2448	2620	2711	4297	4788	5828	5839	9729	8097	6327	7754	11191	15029	16147	21298
POLYCARBONATE	3990	3284	4926	5370	3432	4605	3331	3621	4447	5685	4603	6563	2980	6280	3257	4833
PROPYLENE OXIDE	0	1	0	0	0	0	0	1	0	1	0	3	0	1	0	0
PROPYLENE GLYCOL	865	1113	1117	1713	1697	2419	5934	6573	3254	3931	1706	5187	3175	7345	5850	7934
POLYVINYL ACETATE RESIN	8767	8927	6958	6522	8510	8622	9048	7767	8175	7358	9527	15019	9247	18218	11799	18262
UNSATURATED POLYESTER RESIN	16263	18552	14436	18212	14667	21668	15498	22694	17443	27544	22071	42671	23605	47919	28603	43137
ETHYL BENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CELLULOSE ACETATE BUTYRATE	8	30	1	18	1	15	0	0	9	39	0	2	0	0	0	0
CELLULOSE ACETATE SHEET	85	178	59	145	22	79	33	106	25	102	13	39	4	15	1	7

PRODUCT	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
CELLULOSE NITRATE SHEET	19	14	2	5	7	24	5	9	4	31	2	13	2	11	1	3
MELAMINE MOULDING POWDER	10124	3072	14754	3747	16578	4758	21691	6495	21800	6695	32531	11571	42319	17085	53985	21947
POLYACETAL RESIN	387	439	141	279	276	402	334	540	590	1081	1636	3556	1547	4220	1749	4679
PHTHALIC ANHYDRIDE	42033	25960	37869	25156	26495	18956	28898	17976	23296	12668	32492	25529	20742	20677	31074	28547
STYRENE	5088	4176	4524	3842	6531	6690	4366	3326	17361	7081	41340	42223	38041	38529	9853	10065
VINYL ACTATE MONOMER	11755	6285	21261	13220	8344	6623	3434	2260	1834	1231	4545	6316	2117	2775	7743	6225
ISOPROPANOL	7385	5106	11004	7850	6281	5336	10442	7773	8298	9567	11100	11539	10780	11247	7706	9224
POLYOL	28458	32760	23427	39008	22316	43162	25825	77010	7820	60051	13483	40516	0	0	0	0
TOTAL	144135	116773	193342	138613	147298	139759	237571	194934	171468	169127	212298	249815	189073	224161	208633	212881
TOTAL EXPORT OF MAJOR PETRO-CHEMICALS	5289645	3535453	7401474	4927565	9618583	7394080	8798230	5807927	8273603	4358055	7534583	6363886	4667280	4571674	3850778	3645611

Source: DGCIS, Kolkata, M/o Commerce and Industry

Table 25: Imports of Major Petrochemicals (Product Wise) 2016-17 to 2023-24

[QTY in MT & VAL in Rs. Lakh]

PRODUCT	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
SYNTHETIC FIBRES																
ACRYLIC FIBRE	36771	44394	32184	46549	40475	71158	56316	84841	41928	53586	35164	76074	26049	57635	15921	26370
NYLON FILAMENT YARN	31063	53352	22731	43317	23259	52088	24476	49669	17058	34533	25307	60951	38680	82278	28859	60294
NYLON INDUSTRIAL YARN/TYRE CORD	7741	10247	6566	10070	8108	16323	6893	11802	9459	15174	11445	31261	8720	20790	4002	8643
POLYESTER FILAMENT YARN	84367	92492	82784	100756	83954	118045	115170	129162	238680	197017	295709	343248	487693	540875	493203	508672
POLYESTER STAPLE FIBRE	99809	70113	88990	71053	91775	89685	118176	94729	84273	64616	78310	78489	95480	95660	54707	54635
POLYPROPYLENE FILAMENT YARN	695	850	1343	1715	1362	2007	670	954	755	1418	315	975	164	1092	263	391
POLYPROPYLENE STAPLE FIBRE	2016	2181	3281	3378	3333	3863	2778	3097	2164	2316	2986	4218	4706	5998	7045	7636
Elastomeric/Spandex Filament Yarn	17531	69364	21753	86241	23351	100187	22121	86629	8956	42041	11141	83304	8758	60333	6796	38261
TOTAL	279993	342993	259632	363079	275617	453356	346600	460883	403273	410701	460377	678520	670250	864661	610796	704902
FIBRE INTERMEDIATES																
ACRYLONITRILE	139709	108192	159778	172707	182234	244043	175867	200713	135230	121075	175763	298158	233759	302358	180891	183030
CAPROLACTUM	52906	50601	58413	75965	66497	99336	68049	75256	57649	55553	60061	94382	22757	36652	20987	29435
DIMETHYL TEREPHTHALATE	1761	1051	2256	1520	1455	1137	1807	1199	1766	982	1973	1567	1934	2217	1510	1953
MONO EHYLENE GLYCOL	1235385	604838	1066477	584695	634714	371592	787574	312149	621221	226286	917787	471777	1500812	666600	1102661	462698
PURIFIED TEREPHTHALIC ACID	412468	178454	521501	237444	569756	340774	886358	470167	625460	245629	1471142	847400	1596467	1168377	1623242	1094477
TOTAL	1842229	943136	1808425	1072331	1454656	1056882	1919655	1059484	1441326	649525	2626726	1713284	3355729	2176204	2929291	1771593
POLYMERS																
LOW DENSITY POLYETHYLENE	391501	330125	464591	398992	341063	310441	352372	282510	256287	208489	222431	268779	278393	331845	307929	307019
HIGH DENSITY POLYTHYLENE	1000457	824364	993072	840665	902265	872720	787964	634354	810467	648402	827307	863139	1628435	1690936	2055552	1882968
POLYESTYRENE	44374	54225	52790	64224	56312	69827	54371	62759	69916	81878	65664	121494	112718	178082	107697	147992
POLYPROPYLENE (INC. CO-POLYMER)	781188	611882	938998	762085	854828	837001	994615	853958	854399	746492	1136898	1290866	1701271	1778886	1718627	1587887
EXPANDABLE POLYESTYRENE	3779	3554	2644	2744	1241	1611	1037	1184	4684	4308	5511	6709	1822	2705	1327	1920
POLY VINYL CHLORIDE	1702852	1015835	1846296	1123738	2037570	1354121	928376	587544	419309	300980	460352	508138	590624	534672	688297	471250
LINEAR LOW DENSITY POLYTHYLENE	469075	381387	425112	335698	276313	228745	311445	217054	226310	151723	223153	208037	476089	439494	433524	358058
PVC COMPOUND	59032	45858	27975	21140	9537	10363	0	0	0	0	177	53	26	30	32	59
TOTAL	4452258	3267230	4751478	3549286	4479129	3684829	3430180	2639363	2641372	2142272	2941493	3267215	4789378	4956650	5312985	4757153
SYNTHETIC RUBBER (ELASTOMERS)																
STYRENE BUTADIENE RUBBER	149559	155436	132989	161301	123010	156987	102738	118659	152373	149081	169618	256501	166616	287301	180487	267764
POLY BUTADIENE RUBBER	84910	93064	94772	122673	104671	138315	97712	107321	114961	113497	109987	167151	134822	233641	124579	173138
ETHYL PROPYLENE DIMERS	43411	54947	45099	59035	52800	80061	45465	59429	41810	52572	48943	101663	54585	130656	65697	121152
ETHYL VINYL ACETATE	144604	141686	183348	184503	178684	202884	193671	212988	189581	212461	182004	383881	206182	406974	235318	317919
NITRILE BUTADIENE RUBBER	36451	45999	40310	63203	38519	73014	41179	60140	158510	52408	38508	78806	46436	108043	54323	97486
BUTYL RUBBER	100984	136910	111349	151035	120816	200157	94067	151010	90043	138841	86078	156123	64839	153952	63433	134599
TOTAL	559919	628042	607867	741750	618500	851418	574832	709547	747278	718860	635138	1144125	673480	1320567	723837	1112058
SYNTHETIC DETERGENT INTERMEDIATES																
LINEAR ALKYL BENZENE	228092	177675	205910	163748	227111	210012	264026	236771	265392	215927	277724	333278	342695	521880	251354	337041
ETHYLENE OXIDE	137	1328	74	785	25	416	32	655	14	331	104	2882	197	1674	182	1887
TOTAL	228229	179003	205984	164533	227136	210428	264058	237426	265406	216258	277828	336160	342892	523554	251536	338928
PERFORMANCE PLASTICS																
ABS RESIN	102685	114201	98026	131230	119398	173631	104643	126833	98848	129553	112791	210059	115165	195968	128502	176444
NYLON-6	158810	233711	175945	299915	215718	430268	217382	345202	0	0	0	0	0	0	0	0
POLYMETHYL METHACRYLATE	27175	35588	29994	47445	29540	55142	29331	45525	31774	44980	25928	51293	33196	65329	35529	62843
STYRENE ACRYLONITRILE	8542	8299	9430	10630	9188	11431	10452	11103	13347	14631	20468	29048	23791	32202	25262	28956
POLYESTER CHIPS/PET CHIPS	117996	68960	266358	113614	307111	199059	375865	233917	151926	85030	120110	80693	116151	87603	223870	167835
POLYTETRAFLUOROETHYLENE(PTFE)	2234	11511	2939	18213	2896	22190	2904	19880	3063	19623	3226	23817	4013	33234	4716	34745

PRODUCT (1)	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY (2)	VAL (3)	QTY (4)	VAL (5)	QTY (6)	VAL (7)	QTY (8)	VAL (9)	QTY (10)	VAL (11)	QTY (12)	VAL (13)	QTY (14)	VAL (15)	QTY (16)	VAL (17)
TOTAL	417442	472270	582692	621047	683851	891721	740577	782460	298958	293817	282523	394910	292316	414336	417879	470823
OLEFINS																
BUTADIENE	2105	1657	2859	3104	1048	1363	14	82	29	108	24	138	8803	9232	17	40
ETHYLENE	80917	57116	39119	32795	60583	50604	64816	43283	39902	28526	62387	49807	76690	85887	61766	52224
PROPYLENE	431	1878	8813	7384	8069	5879	11027	7646	3944	5324	29469	26248	8738	7720	6376	5082
TOTAL	83453	60651	50791	43283	69700	57846	75857	51011	43875	33958	91880	76193	94231	102839	68159	57346
AROMATICS																
BENZENE	0	8	60	66	22264	12820	11153	5330	19212	8254	4195	2724	11073	7764	4861	2679
MIXED XYLENE	113	125	2424	1200	641	433	122	139	524	293	40	60	2077	1865	22	53
ORTHO-XYLENE	26275	14609	15730	8337	22974	15464	16382	9962	25136	11309	16390	11452	50955	49532	64537	59079
TOLUENE	392749	183101	414144	194854	438055	235492	464497	238119	601835	238357	500323	315330	584524	514839	594852	503148
PARAXYLENE	1195515	667002	888660	504091	836490	646003	835381	519284	653779	283883	603417	412965	597100	549727	844939	762454
TOTAL	1614652	864845	1321018	708548	1320424	910212	1327535	772834	1300486	542096	1124365	742531	1245729	1123727	1509211	1327413
OTHER PETRO-BASED CHEMICALS																
ETHYLENE DICHLORIDE	503987	86304	713334	108450	581677	141440	780433	182591	632881	150504	625955	379706	663234	262323	577528	164090
BUTANOL	57959	26234	53679	30719	48955	35342	58865	33488	43270	27054	29060	35970	39170	35136	60184	46646
OXO ALCOHOL	3186	6713	2272	6324	2696	7376	2873	6210	2798	4355	3088	5707	2283	7831	4435	9652
2-ETHYL HEXANOL	66867	37312	58129	39652	54107	44522	81656	56216	56250	38505	13840	19050	54665	63018	32236	33549
VINYL CHLORIDE MONOMER	344423	177368	484390	247256	457532	252913	511166	280807	479876	315306	581809	552782	537183	410677	508296	304495
EPICHLOHYDRINE	48112	34563	56024	51446	65013	83311	61163	72337	55202	58174	66405	118899	71546	121208	65402	65780
ISO BUTYLENE	20051	14133	48702	36009	44558	40254	10787	7475	1806	1231	54	143	13	81	58	112
METAXYLENE	2667	2600	2078	2064	2943	3306	1910	1991	2711	2492	4726	4208	3033	4713	4575	6107
METHYL ISOBUTYL KETONE	22487	17388	34684	31270	33932	29589	29977	18245	30744	31945	37198	62842	31195	36790	45652	61990
PIB	16034	16949	15041	16964	16287	20089	16125	19857	16396	18107	18485	24889	19902	33102	18736	29218
POLYCARBONATE	138365	204195	158944	256209	190435	369272	175692	263317	179111	267899	211794	475954	224233	503033	280334	506948
PROPYLENE OXIDE	23064	21699	23446	23594	26800	30694	20160	20127	17361	22038	20504	32293	24821	34135	28267	33184
PROPYLENE GLYCOL	51339	39956	57333	49579	66498	69089	67372	54615	59532	55321	62175	129778	69814	105480	82296	87130
POLYVINYL ACETATE RESIN	3043	3829	3448	5059	2713	3894	3578	4955	3818	4871	4451	7998	5402	11596	2218	4788
UNSATURATED POLYSTER RESIN	39975	42255	49888	53751	42954	59992	48616	58735	49482	58712	48099	98713	54046	114548	69758	107589
ETHYL BENZENE	308	267	351	320	719	806	463	471	500	490	947	1247	666	1050	867	1184
CELLULOSE ACETATE BUTYRATE	3	18	3	10	0	0	12	18	19	14	57	106	4	254	10	20
CELLULOSE ACETATE SHEET	1066	564	1346	921	1516	1122	1356	1013	1311	1059	1645	1632	1572	1649	1204	1661
CELLULOSE NITRATE SHEET	75	250	99	327	106	396	75	270	1243	538	521	366	134	276	103	453
MELAMINE MOULDING POWDER	12997	15304	14699	16993	15280	20127	14945	18772	11992	15425	13559	23132	15827	28395	18512	28405
POLYACETAL RESIN	37883	37829	43672	43617	48759	59046	47673	53004	49011	56158	48878	72046	61732	121350	63872	107068
PHTHALIC ANHYDRIDE	92058	53567	130440	86282	144801	107477	174482	110039	140781	80887	121211	91699	94250	88182	79821	72552
STYRENE	729627	557571	789273	654655	817779	744118	876922	610879	738149	459419	888499	799875	1093429	1015028	1064752	931586
VINYL ACTATE MONOMER	162004	87159	184964	117193	171353	135851	162866	98977	138364	88247	178958	252872	211731	281602	208704	153405
ISOPROPANOL	97262	55519	110464	71816	141113	98531	154095	83539	186792	164736	135446	112481	145915	122885	108756	94551
POLYOL	175766	225387	218541	281622	248491	350672	239755	330380	169499	228580	174008	352016	0	0	0	0
TOTAL	2650608	1764933	3255244	2232102	3227017	2709229	3543017	2388328	3068899	2152067	3291372	3656404	3425800	3404342	3326576	2852163
TOTAL IMPORT OF MAJOR PETRO-CHEMICALS	12128783	8523103	12843131	9495959	12356030	10825921	12222311	9101336	10210873	7159554	11731702	12009342	14889805	14886880	15150270	13392379

Source: DGCIS, Kolkata, M/o Commerce and Industry

Table 26: Net Imports of Major Petrochemicals (Product-wise) 2016-17 to 2023-24

[QTY in MT & VAL in Rs. Lakh]

PRODUCT	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
SYNTHETIC FIBRES																
ACRYLIC FIBRE	-11561	-15666	-7029	-5678	-5457	-542	15811	25115	16359	19663	11421	32517	-2538	-4017	-4987	-19359
NYLON FILAMENT YARN	29206	46890	18717	31206	17465	33200	16728	27309	10960	19038	15944	31499	29972	53421	19472	30591
NYLON INDUSTRIAL YARN/TYRE CORD	6267	8375	4946	7831	6213	13496	3269	6686	5163	9235	6133	22228	2134	8487	-4694	-5389
POLYESTER FILAMENT YARN	-663670	-598344	-634930	-629526	-612714	-721510	-596149	-621304	-301970	-348533	-466764	-623628	15662	-125108	75308	-63648
POLYESTER STAPLE FIBRE	-114094	-80203	-138451	-98311	-163680	-135360	-166981	-110147	-207126	-107626	-305393	-251247	-131886	-132534	-152404	-131051
POLYPROPYLENE FILAMENT YARN	-1382	-1840	474	598	868	1294	-50	-11	26	413	-483	-322	-851	-537	-924	-1422
POLYPROPYLENE STAPLE FIBRE	-7739	-6586	-6216	-5285	-4559	-4583	-6731	-6006	-6048	-5352	-7910	-9815	-7420	-10030	-2852	-4971
Elastomeric/Spandex Filament Yarn	17226	68349	21068	84262	21815	95353	21355	84254	7290	36823	5183	38401	6173	48875	-1611	10589
TOTAL	-745747	-579025	-741421	-614903	-740049	-718652	-712748	-594104	-475346	-376339	-741869	-760367	-88754	-161443	-72692	-184660
FIBRE INTERMEDIATES																
ACRYLONITRILE	139703	108153	158264	170807	180362	240984	172879	197451	126697	112897	173807	294757	221754	286790	176878	178789
CAPROLACTUM	51896	49734	58360	75872	66420	99207	67791	74929	51424	50881	60036	93828	22695	36522	20878	29250
DIMETHYL TEREPHTHALATE	1760	1050	2256	1520	1454	1135	1807	1198	1766	982	1973	1567	1876	2104	1493	1924
MONO EHYLENE GLYCOL	1173186	558906	929015	494196	342131	196267	636273	230788	295792	120602	846583	422841	1461163	629352	1073026	433211
PURIFIED TEREPHTHALIC ACID	152588	71719	309172	148867	407334	243370	806533	431506	490482	201234	1416745	813751	1592028	1160632	1621255	1090195
TOTAL	1519133	789562	1457067	891262	997701	780963	1685283	935872	966161	486596	2499144	1626744	3299516	2115400	2893530	1733369
POLYMERS																
LOW DENSITY POLYETHYLENE	364592	302804	356334	310562	176921	177676	212350	184375	216845	172688	173244	202257	205767	231829	241377	225547
HIGH DENSITY POLYTHYLENE	852315	706549	787275	685115	444849	507485	301072	318409	411808	400878	629138	670315	1558382	1595488	1877133	1709687
POLYESTYRENE	-38168	-21258	-17024	-3228	-7678	5767	4760	19620	33414	54073	21170	68976	73494	131354	48647	85211
POLYPROPYLENE (INC. CO-POLYMER)	206954	229204	386996	364439	136775	240390	455570	467274	-7313	184674	590289	743730	1349520	1454686	1369517	1263263
EXPANDABLE POLYSTYRENE	82	6	-475	-528	-1823	-2207	-1708	-1578	3790	3413	4567	5430	-581	-422	-1288	-801
POLY VINYL CHLORIDE	1696368	1009708	1839634	1117723	2035437	1352333	926316	586073	402324	292513	457815	505244	589657	533335	686368	469636
LINEAR LOW DENSITY POLYTHYLENE	415860	339829	196160	172066	-231822	-152096	-83631	-30142	91992	65964	156659	142612	436238	398613	386183	314990
PVC COMPOUND	42131	32956	14345	11366	-7685	-2910	0	0	0	0	-12544	-13866	-9450	-10747	-245	-184
TOTAL	3540134	2599798	3563245	2657515	2544974	2126438	1814729	1544031	1152860	1174203	2020338	2324698	4203027	4334136	4607692	4067349
SYNTHETIC RUBBER (ELASTOMERS)																
STYRENE BUTADIENE RUBBER	122420	128013	92285	124919	76831	113415	57809	80821	112616	120313	133903	218464	129753	244803	131802	219311
POLY BUTADIENE RUBBER	79796	88122	87760	115297	91496	123004	77389	88032	91632	98438	87429	138961	132266	229778	119985	166900
ETHYL PROPYLENE DIMERS	40129	45416	42582	51339	50337	72103	43173	52145	40439	49297	47514	98225	53518	127434	64866	118836
ETHYL VINYL ACETATE	143110	139935	182447	183189	178154	201633	192672	211374	188539	210811	180623	380530	201276	397988	233596	314923
NITRILE BUTADIENE RUBBER	36000	44907	39883	62075	38012	71698	40460	58824	154687	48082	31374	69524	38339	99561	39450	86836
BUTYL RUBBER	100260	135262	111021	150342	120120	198869	89293	145286	64328	112498	64359	126599	47897	123553	41697	101337
TOTAL	521715	581655	555978	687161	554950	780722	500796	636482	652241	639439	545202	1032303	603049	1223117	631396	1008143
SYNTHETIC DETERGENT INTERMEDIATES																
LINEAR ALKYL BENZENE	221652	172859	204980	162939	226788	209645	263833	236518	264466	214971	271322	325816	341560	520784	249026	333237
ETHYLENE OXIDE	-481	203	-409	126	-700	-751	-819	-571	-936	-652	-985	1643	-1191	-337	-1176	-13
TOTAL	221171	173062	204571	163065	226088	208894	263014	235947	263530	214319	270337	327459	340369	520447	247850	333224
PERFORMANCE PLASTICS																
ABS RESIN	102391	113728	97753	130785	118949	173009	104315	126235	98441	128880	111047	207862	114772	195089	128003	175489
NYLON-6	141154	204118	154592	265141	195974	391303	196168	304347	0	0	0	0	0	0	0	0
POLYMETHYL METHACRYLATE	18618	25358	26431	43861	25217	49924	24699	39939	28478	40206	21824	44512	29815	60228	32328	57763
STYRENE ACRYLONITRILE	7871	7849	8251	9948	8801	11051	9992	10741	13117	14419	19651	28058	21185	29586	17721	22700
POLYESTER CHIPS/PET CHIPS	-819255	-488225	-748230	-541712	-736275	-690632	-555117	-384264	-50371	-32930	-142019	-141117	-47038	-68747	88189	50369
POLYTETRAFLUOROETHYLENE(PTFE)	-6087	-27008	-6653	-34247	-9101	-61707	-8271	-53548	-7849	-55501	-11702	-98091	-8346	-89387	-5780	-66869

PRODUCT	2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24	
	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL	QTY	VAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
TOTAL	-555308	-164180	-467856	-126224	-396435	-127052	-228214	43450	81816	95074	-1199	41224	110388	126769	260461	239452
OLEFINS																
BUTADIENE	-104733	-95611	-100567	-70267	-135143	-112526	-174238	-103834	-166780	-72164	-144071	-89748	-112513	-77192	-153063	-101941
ETHYLENE	80890	57093	-97307	-64532	-132650	-90068	-87414	-36672	-62993	-29186	-49115	-34190	36258	55050	25740	26646
PROPYLENE	-10069	-2573	-11932	-1722	-31221	-16261	1369	3417	-11340	-794	29469	26248	8738	7719	6376	5082
TOTAL	-33912	-41091	-209806	-136521	-299014	-218855	-260283	-137089	-241113	-102144	-163717	-97690	-67517	-14423	-120947	-70213
AROMATICS																
BENZENE	-789425	-366814	-1286263	-662342	-1628859	-809232	-1397324	-629973	-1488414	-551300	-1918756	-1385444	-1440565	-1149207	-1469135	-1090373
MIXED XYLENE	47	15	2006	922	-340	-235	-288	-158	-11	-37	-6	3	1950	1698	-232	-249
ORTHO-XYLENE	-128072	-60152	-169945	-78544	-202729	-107270	-160885	-90988	-284414	-116625	-217938	-136769	-70348	-58527	52839	47960
TOLUENE	386906	179337	410041	192082	424454	225991	456373	232555	584001	228566	482519	301498	569810	499544	565480	476240
PARAXYLENE	396023	227323	-937862	-498568	-1823013	-1279341	-1841818	-1076010	-2171472	-873193	-1656010	-1034792	-475127	-302486	585307	547244
TOTAL	-134521	-20291	-1982023	-1046450	-3230487	-1970087	-2943942	-1564574	-3360310	-1312589	-3310191	-2255504	-1414280	-1008978	-265741	-19178
OTHER PETRO-BASED CHEMICALS																
ETHYLENE DICHLORIDE	503971	86296	668473	101940	562496	136962	699576	162457	595469	141899	620053	376485	662784	261965	577411	163965
BUTANOL	55667	25045	52816	30016	48503	34687	58583	33201	42238	25766	28483	35083	38543	34355	56899	43096
OXO ALCOHOL	1915	5982	1382	5642	-239	5871	1545	5064	2058	2334	2100	117	990	734	3142	3770
2-ETHYL HEXANOL	64812	35875	55493	37951	50932	41741	81610	56162	54842	37093	10377	14040	53911	61914	31691	32902
VINYL CHLORIDE MONOMER	344423	177368	484390	247256	457532	252910	511166	280807	479876	315305	581803	552774	537158	410625	508296	304494
EPICHLORHYDRINE	48058	34508	55975	51370	64965	83221	61057	72154	55144	57868	66377	118624	66298	110730	58201	57637
ISO BUTYLENE	20050	14130	48702	36007	44558	40253	-7298	-1553	-4242	-1362	-18534	-12823	-14063	-12877	-16705	-15396
METAXYLENE	2603	2383	2074	1801	2928	3024	1875	1404	2693	1635	4706	3532	2992	4002	4566	5655
METHYL ISOBUTYL KETONE	21569	16600	33744	30392	31894	27772	27812	16720	30077	31063	35848	60161	30386	35519	44000	59578
PIB	13797	14501	12421	14253	11990	15301	10297	14018	6667	10010	12158	17135	8711	18073	2589	7920
POLYCARBONATE	134375	200911	154018	250839	187003	364667	172361	259696	174664	262214	207191	469391	221253	496753	277077	502115
PROPYLENE OXIDE	23064	21698	23446	23594	26800	30694	20160	20126	17361	22037	20504	32290	24821	34134	28267	33184
PROPYLENE GLYCOL	50474	38843	56216	47866	64801	66670	61438	48042	56278	51390	60469	124591	66639	98135	76446	79196
POLYVINYL ACETATE RESIN	-5724	-5098	-3510	-1463	-5797	-4728	-5470	-2812	-4357	-2487	-5076	-7021	-3845	-6622	-9581	-13474
UNSATURATED POLYESTER RESIN	23712	23703	35452	35539	28287	38324	33118	36041	32039	31168	26028	56042	30441	66629	41155	64452
ETHYL BENZENE	308	267	351	320	719	806	463	471	500	490	947	1247	666	1050	867	1184
CELLULOSE ACETATE BUTYRATE	-5	-12	2	-8	-1	-15	12	18	10	-25	57	104	4	254	10	20
CELLULOSE ACETATE SHEET	981	386	1287	776	1494	1043	1323	907	1286	957	1632	1593	1568	1634	1203	1654
CELLULOSE NITRATE SHEET	56	236	97	322	99	372	70	261	1239	507	519	353	132	265	102	450
MELAMINE MOULDING POWDER	2873	12232	-55	13246	-1298	15369	-6746	12277	-9808	8730	-18972	11561	-26492	11310	-35473	6458
POLYACETAL RESIN	37496	37390	43531	43338	48483	58644	47339	52464	48421	55077	47242	68490	60185	117130	62123	102389
PHTHALIC ANHYDRIDE	50025	27607	92571	61126	118306	88521	145584	92063	117485	68219	88719	66170	73508	67505	48747	44005
STYRENE	724539	553395	784749	650813	811248	737428	872556	607553	720788	452338	847159	757652	1055388	976499	1054899	921521
VINYL ACTATE MONOMER	150249	80874	163703	103973	163009	129228	159432	96717	136530	87016	174413	246556	209614	278827	200961	147180
ISOPROPANOL	89877	50413	99460	63966	134832	93195	143653	75766	178494	155169	124346	100942	135135	111638	101050	85327
POLYOL	147308	192627	195114	242614	226175	307510	213930	253370	161679	168529	160525	311500	0	0	0	0
TOTAL	2506473	1648160	3061902	2093489	3079719	2569470	3305446	2193394	2897431	1982940	3079074	3406589	3236727	3180181	3117943	2639282
TOTAL NET IMPORT OF MAJOR PETRO-CHEMICALS	6839138	4987650	5441657	4568394	2737447	3431841	3424081	3293409	1937270	2801499	4197119	5645456	10222525	10315206	11299492	9746768

Source: DGCIS, Kolkata, M/o Commerce and Industry

Table 27: Top Five Export Destinations of selected Petrochemicals during 2023-24

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
ACRYLIC FIBRE	KENYA	6531.22	8796.17
	SOUTH AFRICA	2386.30	8707.40
	U ARAB EMTS	1600.30	2251.49
	U S A	1405.11	5979.71
	ETHIOPIA	1210.50	1781.25
	Product Total	13133.42	27516.02
NYLON FILAMENT YARN	U ARAB EMTS	1431.01	4064.01
	AUSTRALIA	1330.33	4155.64
	U S A	1099.41	4008.80
	BRAZIL	672.06	1951.71
	TURKEY	620.62	1562.44
	Product Total	5153.43	15742.60
NYLON INDUSTRIAL YARN/TYRE CORD	U S A	2425.69	4338.76
	SPAIN	1285.37	1963.64
	GERMANY	1006.19	1867.33
	MEXICO	387.61	600.96
	BRAZIL	369.23	495.74
	Product Total	5474.08	9266.42
POLYESTER FILAMENT YARN	TURKEY	148926.59	184720.44
	BRAZIL	50362.96	51387.63
	MOROCCO	21720.03	25548.23
	U S A	18861.27	29923.01
	EGYPT A RP	18294.34	24963.00
	Product Total	258165.19	316542.31
POLYESTER STAPLE FIBRE	U S A	48128.11	46071.49
	NEPAL	33422.31	27217.36
	TURKEY	21205.24	18418.32
	BELGIUM	11911.13	10752.85
	EGYPT A RP	11384.50	10028.85
	Product Total	126051.29	112488.87
POLYPROPYLENE FILAMENT YARN	MEXICO	183.03	277.97
	ETHIOPIA	120.00	224.51
	BANGLADESH PR	116.27	152.00
	NEPAL	100.31	159.52
	CROATIA	68.46	94.76
	Product Total	588.07	908.76
POLYPROPYLENE STAPLE FIBRE	U S A	8527.40	10820.67
	SLOVENIA	442.47	499.31
	NETHERLAND	287.03	296.39
	NEPAL	175.69	290.16
	SAUDI ARAB	145.24	248.28
	Product Total	9577.84	12154.81
Elastomeric/Spandex Filament Yarn	TURKEY	3137.14	10207.47
	KOREA RP	1373.64	4783.65
	VIETNAM SOC REP	824.77	2501.48
	COLOMBIA	649.74	1843.10

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
	BANGLADESH PR	433.78	1488.51
	Product Total	6419.08	20824.21
ACRYLONITRILE	OMAN	2010.00	1792.46
	U ARAB EMTS	1999.85	2440.36
	BANGLADESH PR	3.04	2.85
	BELGIUM	0.50	4.97
	UKRAINE	0.00	0.01
	Product Total	4013.39	4240.63
CAPROLACTUM	SPAIN	40.00	60.23
	INDONESIA	21.00	38.45
	NETHERLAND	20.00	27.63
	U S A	19.00	40.96
	MEXICO	3.50	7.60
	Product Total	103.50	174.86
DIMETHYL TEREPHTHALATE	NETHERLAND	15.30	28.65
	TAIWAN	2.04	0.22
	GERMANY	0.01	0.20
	U S A	0.00	0.01
	Product Total	17.35	29.08
MONO EHYLENE GLYCOL	INDONESIA	8778.00	10750.03
	KOREA RP	5301.16	6662.99
	SAUDI ARAB	4634.02	2099.52
	TAIWAN	2794.46	3662.08
	SOUTH AFRICA	2603.32	1275.52
	Product Total	24110.96	24450.13
PURIFIED TEREPHTHALIC ACID	U S A	1781.16	4228.40
	TURKEY	104.09	20.14
	CHINA P RP	100.30	29.98
	BANGLADESH PR	0.85	0.88
	BELGIUM	0.50	0.87
	Product Total	1986.90	4280.28
LOW DENSITY POLYETHYLENE	U ARAB EMTS	19555.25	16599.52
	EGYPT A RP	10425.71	15609.25
	ALGERIA	4622.15	6527.02
	TURKEY	4616.24	6417.54
	SAUDI ARAB	4604.91	6467.43
	Product Total	43824.26	51620.76
HIGH DENSITY POLYTHYLENE	CHINA P RP	55696.27	43276.25
	NEPAL	32031.02	29694.80
	VIETNAM SOC REP	25773.59	20735.13
	U ARAB EMTS	16606.93	18068.89
	BANGLADESH PR	6536.37	6066.42
	Product Total	136644.17	117841.47
POLYESTYRENE	BANGLADESH PR	6316.51	5889.19
	EGYPT A RP	6044.03	6368.96
	TURKEY	5524.38	5424.38
	U ARAB EMTS	3869.07	3820.19

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
	NIGERIA	3721.72	2585.81
	Product Total	25475.71	24088.53
POLYPROPYLENE (INC. CO-POLYMER)	NEPAL	42957.24	35891.07
	TURKEY	37431.81	31156.86
	VIETNAM SOC REP	35917.07	27151.19
	BANGLADESH PR	29429.51	23621.17
	CHINA P RP	24582.55	18259.53
	Product Total	170318.18	136079.81
EXPANDABLE POLYSTYRENE	U ARAB EMTS	990.30	960.59
	KUWAIT	658.00	668.40
	SAUDI ARAB	252.00	265.30
	QATAR	198.00	205.07
	VIETNAM SOC REP	152.97	217.59
	Product Total	2251.27	2316.95
POLY VINYL CHLORIDE	U ARAB EMTS	576.09	390.80
	SRI LANKA DSR	485.90	479.23
	DJIBOUTI	225.90	159.32
	NEPAL	155.56	140.70
	KENYA	154.48	90.92
	Product Total	1597.92	1260.97
LINEAR LOW DENSITY POLYTHYLENE	KENYA	11540.25	10415.69
	CHINA P RP	5627.68	4232.56
	SOUTH AFRICA	4055.24	3456.10
	U ARAB EMTS	3860.07	3353.48
	TANZANIA REP	3611.56	3255.06
	Product Total	28694.79	24712.89
PVC COMPOUND	NEPAL	114.19	91.76
	BANGLADESH PR	68.00	70.08
	SRI LANKA DSR	38.00	36.54
	DJIBOUTI	28.00	12.94
	U ARAB EMTS	15.63	17.88
	Product Total	263.82	229.20
STYRENE BUTADIENE RUBBER	U ARAB EMTS	8220.48	6724.34
	EGYPT A RP	5140.33	3718.75
	TURKEY	4138.38	3668.12
	VIETNAM SOC REP	3621.11	3276.24
	BANGLADESH PR	2991.21	4649.19
	Product Total	24111.50	22036.64
POLY BUTADIENE RUBBER	SRI LANKA DSR	2916.55	3946.80
	BANGLADESH PR	426.50	555.14
	ARGENTINA	328.89	458.49
	KOREA RP	285.53	448.02
	PERU	233.28	312.64
	Product Total	4190.75	5721.08
ETHYL PROPYLENE DIMERS	INDONESIA	251.09	816.40
	U ARAB EMTS	181.90	381.45
	TURKEY	109.55	191.65

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
	VIETNAM SOC REP	53.99	204.74
	U K	27.51	103.75
	Product Total	624.04	1697.99
ETHYL VINYL ACETATE	NEPAL	645.46	998.55
	RUSSIA	453.80	674.83
	BANGLADESH PR	289.82	635.50
	CHINA P RP	74.25	84.87
	U ARAB EMTS	59.02	131.04
	Product Total	1522.35	2524.78
NITRILE BUTADIENE RUBBER	SRI LANKA DSR	4446.15	2959.93
	MALAYSIA	3154.20	1720.79
	THAILAND	2916.42	1782.42
	TURKEY	2133.64	1229.90
	INDONESIA	598.00	338.51
	Product Total	13248.41	8031.55
BUTYL RUBBER	CHINA P RP	6719.61	9869.71
	U S A	3196.97	5642.99
	THAILAND	2970.51	4460.11
	KOREA RP	1440.53	1986.39
	VIETNAM SOC REP	1415.21	1862.51
	Product Total	15742.83	23821.71
LINEAR ALKYL BENZENE	CHINA P RP	479.28	515.23
	GERMANY	400.20	519.96
	SINGAPORE	377.71	1097.00
	YEMEN REPUBLC	280.29	374.47
	U ARAB EMTS	240.21	363.33
	Product Total	1777.69	2870.00
ETHYLENE OXIDE	THAILAND	463.72	899.13
	MALAYSIA	415.36	432.48
	VIETNAM SOC REP	296.59	306.44
	INDONESIA	143.56	139.56
	SAUDI ARAB	13.23	44.71
	Product Total	1332.46	1822.32
ABS RESIN	CHINA P RP	145.75	230.86
	U ARAB EMTS	131.69	248.28
	MEXICO	55.20	137.24
	NEPAL	54.38	73.61
	BANGLADESH PR	25.08	20.12
	Product Total	412.09	710.11
POLYMETHYL METHACRYLATE	NEPAL	1437.36	1257.49
	BANGLADESH PR	436.79	521.81
	SRI LANKA DSR	212.12	302.17
	TAIWAN	199.95	175.47
	U S A	196.29	724.60
	Product Total	2482.50	2981.54
	NIGERIA	7238.40	5844.99
	DJIBOUTI	200.00	215.66

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
STYRENE ACRYLONITRILE	PHILIPPINES	25.00	40.29
	U ARAB EMTS	25.00	73.37
	OMAN	19.00	23.92
	Product Total	7507.40	6198.22
POLYESTER CHIPS/PET CHIPS	U ARAB EMTS	29513.22	24942.47
	MEXICO	25762.00	23411.41
	U S A	16467.60	14213.57
	BAHARAIN IS	10028.00	8382.35
	ITALY	8176.95	6415.76
	Product Total	89947.77	77365.54
POLYTETRAFLUOROETHYLENE(PTFE)	GERMANY	2824.09	29364.87
	U S A	2727.01	26491.37
	ITALY	1799.75	14159.61
	U K	453.20	5327.29
	TURKEY	449.16	4057.16
	Product Total	8253.21	79400.30
BUTADIENE	KOREA RP	57090.73	38233.32
	MALAYSIA	52022.70	35485.79
	INDONESIA	32360.82	21202.89
	TAIWAN	5184.62	3161.00
	THAILAND	4200.00	2069.60
	Product Total	150858.87	100152.60
ETHYLENE	QATAR	18900.00	13601.85
	INDONESIA	17115.00	11944.50
	VIETNAM SOC REP	8.55	24.10
	U ARAB EMTS	2.12	5.76
	PERU	0.44	1.36
	Product Total	36026.11	25577.56
BENZENE	SAUDI ARAB	811283.37	589201.63
	KUWAIT	134663.63	105846.12
	TAIWAN	131531.08	104505.31
	CHINA P RP	108456.26	82776.19
	U S A	96249.42	71197.77
	Product Total	1282183.76	953527.03
MIXED XYLENE	JORDAN	175.00	187.57
	QATAR	31.09	32.74
	SAUDI ARAB	20.00	15.94
	KENYA	11.00	11.43
	NEPAL	7.49	25.32
	Product Total	244.58	272.99
ORTHO-XYLENE	ITALY	5815.40	5408.46
	BELGIUM	3134.59	2770.04
	NETHERLAND	2474.40	2625.96
	MALAYSIA	202.33	217.57
	VIETNAM SOC REP	32.68	42.04
	Product Total	11659.40	11064.07
	U S A	8941.11	7269.29

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
TOLUENE	NIGERIA	4193.67	4038.71
	SOUTH AFRICA	3690.01	3299.88
	KENYA	2357.70	2442.25
	U ARAB EMTS	2233.46	1888.23
	Product Total	21415.94	18938.35
PARAXYLENE	MALAYSIA	126185.06	103977.83
	CHINA P RP	58859.57	48891.75
	INDONESIA	25359.15	20987.35
	PORTUGAL	17156.78	14248.09
	BRAZIL	16214.53	13515.39
	Product Total	243775.09	201620.42
ETHYLENE DICHLORIDE	SAUDI ARAB	68.00	34.42
	THAILAND	38.65	43.88
	CHINA P RP	5.00	38.66
	BRAZIL	3.01	2.97
	NEPAL	1.60	0.67
	Product Total	116.26	120.59
BUTANOL	U ARAB EMTS	1199.13	1113.20
	GHANA	382.79	399.98
	NIGERIA	344.93	341.68
	EGYPT A RP	233.75	223.77
	NEPAL	179.80	179.81
	Product Total	2340.40	2258.43
OXO ALCOHOL	CHINA P RP	546.57	523.32
	NETHERLAND	294.79	630.49
	U S A	286.32	1770.83
	KOREA RP	57.20	81.51
	JAPAN	41.15	70.97
	Product Total	1226.03	3077.11
2-ETHYL HEXANOL	U ARAB EMTS	472.67	516.25
	SAUDI ARAB	39.70	49.07
	EGYPT A RP	13.65	26.26
	NEPAL	10.42	13.72
	COLOMBIA	6.60	9.79
	Product Total	543.04	615.09
VINYL CHLORIDE MONOMER	U ARAB EMTS	0.15	0.34
	BHUTAN	0.01	0.12
	U S A	0.00	0.02
	HONG KONG	0.00	0.66
	Product Total	0.15	0.34
EPICHLHYDRINE	BELGIUM	2422.60	2760.22
	U S A	1901.04	2298.44
	U ARAB EMTS	1672.70	1698.90
	TURKEY	657.61	763.10
	KOREA RP	162.80	163.74
	Product Total	6816.75	7684.40
	SAUDI ARAB	12807.70	11988.79

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
ISO BUTYLENE	THAILAND	2025.00	1961.86
	MALAYSIA	1930.51	1556.39
	NEPAL	0.00	1.16
	Product Total	16763.20	15508.20
METAXYLENE	DENMARK	4.00	447.19
	NEPAL	2.70	2.82
	BANGLADESH PR	1.69	0.79
	NIGER	0.54	0.66
	RUSSIA	0.02	0.24
	Product Total	8.95	451.70
METHYL ISOBUTYL KETONE	U ARAB EMTS	739.78	1016.82
	NIGERIA	452.45	647.92
	NEPAL	121.85	188.06
	COSTA RICA	74.50	108.72
	BANGLADESH PR	69.98	102.41
	Product Total	1458.56	2063.93
PIB	SINGAPORE	6219.22	7232.90
	CHINA P RP	4434.93	5380.97
	U ARAB EMTS	1292.31	2330.08
	THAILAND	1122.66	1536.24
	RUSSIA	1001.27	1500.61
	Product Total	14070.38	17980.81
POLYCARBONATE	KOREA RP	1597.86	2038.34
	ITALY	612.43	741.58
	TAIWAN	209.51	222.25
	NEPAL	166.00	247.81
	CHINA P RP	133.50	207.52
	Product Total	2719.29	3457.51
PROPYLENE GLYCOL	U ARAB EMTS	2116.27	2036.91
	BELGIUM	1600.36	303.38
	IRAN	345.08	489.25
	U S A	293.98	333.14
	IRELAND	262.08	2398.77
	Product Total	4617.76	5561.45
POLYVINYL ACETATE RESIN	U S A	3364.30	7334.14
	TURKEY	1559.20	2746.70
	BELGIUM	912.50	1366.72
	NIGERIA	677.80	405.05
	EGYPT A RP	499.81	601.71
	Product Total	7013.61	12454.32
UNSATURATED POLYSTER RESIN	SPAIN	4690.21	5405.37
	U S A	3153.43	4228.91
	NEPAL	2063.79	2483.55
	BANGLADESH PR	1798.40	2595.05
	QATAR	1761.42	2317.83
	Product Total	13467.25	17030.70
	OMAN	0.01	0.15

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
ETHYL BENZENE	RUSSIA	0.00	0.12
	Product Total	0.01	0.27
CELLULOSE ACETATE SHEET	U ARAB EMTS	0.81	2.71
	NEPAL	0.58	2.96
	SAUDI ARAB	0.02	0.96
	AUSTRALIA	0.00	0.05
	MALDIVES	0.00	0.02
	Product Total	1.41	6.70
CELLULOSE NITRATE SHEET	TANZANIA REP	0.40	1.69
	NEPAL	0.28	1.08
	INDONESIA	0.11	0.01
	MALI	0.00	0.00
	AUSTRALIA	0.00	0.01
	Product Total	0.78	2.78
MELAMINE MOULDING POWDER	NEPAL	46397.42	8830.45
	GHANA	1379.91	1018.64
	COTE D' IVOIRE	1100.75	746.37
	U S A	915.78	1567.42
	GABON	847.05	1029.03
	Product Total	50640.90	13191.91
POLYACETAL RESIN	U ARAB EMTS	568.48	834.80
	INDONESIA	318.15	1096.33
	THAILAND	290.50	1001.94
	MALAYSIA	166.20	538.25
	CANADA	86.15	267.29
	Product Total	1429.48	3738.60
PHTHALIC ANHYDRIDE	U ARAB EMTS	11220.04	10041.96
	SAUDI ARAB	9040.00	8360.62
	EGYPT A RP	4673.00	4413.51
	TUNISIA	2356.01	2274.07
	BANGLADESH PR	976.00	886.76
	Product Total	28265.04	25976.92
STYRENE	TURKEY	4100.00	4235.56
	U ARAB EMTS	2212.10	2129.03
	SRI LANKA DSR	1188.73	1219.10
	SAUDI ARAB	699.03	673.87
	NIGERIA	625.00	698.41
	Product Total	8824.86	8955.96
VINYL ACTATE MONOMER	U ARAB EMTS	2638.70	2118.74
	NIGERIA	1400.59	1105.73
	SRI LANKA DSR	837.35	691.83
	ETHIOPIA	698.41	602.00
	BANGLADESH PR	653.69	495.27
	KENYA	298.90	313.21
ISOPROPANOL	U ARAB EMTS	2062.85	2129.17
	BAHARAIN IS	549.49	678.32
	EGYPT A RP	463.50	583.38

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
	JORDAN	450.39	477.68
	SRI LANKA DSR	411.63	421.60
	Product Total	3937.85	4290.15

Source: DGCIS, Kolkata, M/o Commerce and Industry

Table 28: Top Five Import Destinations of selected Petrochemicals during 2023-24

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
ACRYLIC FIBRE	CHINA P RP	6179.20	10630.89
	NEPAL	2352.20	5353.07
	THAILAND	2087.05	3382.65
	TURKEY	1543.48	2584.18
	PERU	1455.19	1495.65
	Product Total	13617.12	23446.44
NYLON FILAMENT YARN	CHINA P RP	24566.34	45794.59
	TAIWAN	1193.08	5171.55
	VIETNAM SOC REP	1142.93	1935.98
	U ARAB EMTS	391.18	1002.44
	KOREA RP	337.43	1546.42
	Product Total	27630.96	55450.96
NYLON INDUSTRIAL YARN/TYRE CORD	CHINA P RP	2512.22	4606.56
	RUSSIA	355.67	574.62
	U K	296.49	860.38
	KOREA RP	275.63	219.30
	TURKEY	236.55	587.81
	Product Total	3676.57	6848.67
POLYESTER FILAMENT YARN	CHINA P RP	421374.05	417216.79
	INDONESIA	25258.76	29670.11
	VIETNAM SOC REP	13042.47	16934.84
	THAILAND	10713.59	11287.53
	TAIWAN	7899.82	8231.62
	Product Total	478288.68	483340.88
POLYESTER STAPLE FIBRE	KOREA RP	14426.46	14567.74
	CHINA P RP	14094.04	13743.93
	INDONESIA	13675.79	13124.02
	THAILAND	5957.80	5252.82
	MALAYSIA	3209.54	3853.70
	Product Total	51363.62	50542.21
POLYPROPYLENE FILAMENT YARN	TURKEY	167.25	264.52
	U S A	38.44	17.52
	SAUDI ARAB	30.43	42.23
	SINGAPORE	19.03	5.00
	PORTUGAL	6.67	27.70
	Product Total	261.82	356.97
POLYPROPYLENE STAPLE FIBRE	CHINA P RP	4667.80	4977.62
	SAUDI ARAB	2242.25	2388.24
	KOREA RP	52.69	65.76
	BRAZIL	27.40	65.16
	U ARAB EMTS	20.00	22.17
	Product Total	7010.13	7518.95
Elastomeric/Spandex Filament Yarn	CHINA P RP	3361.60	15847.29
	SINGAPORE	984.65	8567.91
	KOREA RP	822.06	3557.30
	THAILAND	761.23	6131.00

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
	JAPAN	270.68	2051.55
	Product Total	6200.21	36155.04
ACRYLONITRILE	TAIWAN	86680.83	85522.25
	KOREA RP	41296.83	42830.93
	CHINA P RP	33318.29	33691.09
	NETHERLAND	14604.07	15246.42
	BRAZIL	3058.16	3211.49
	Product Total	178958.19	180502.16
CAPROLACTUM	CHINA P RP	14450.30	19230.08
	U S A	2712.00	3407.14
	THAILAND	2100.00	3181.21
	RUSSIA	1225.00	2218.47
	KOREA RP	500.00	704.55
	Product Total	20987.30	28741.45
DIMETHYL TEREPHTHALATE	KOREA RP	846.00	1134.27
	U ARAB EMTS	480.00	564.44
	TURKEY	183.50	249.52
	CANADA	0.70	4.13
	SINGAPORE	0.00	0.15
	Product Total	1510.21	1952.51
MONO EHYLENE GLYCOL	KUWAIT	721481.89	300512.90
	SAUDI ARAB	320540.94	135985.60
	SINGAPORE	43806.49	19057.26
	U S A	10627.04	4399.86
	IRAN	4978.22	2163.89
	Product Total	1101434.59	462119.51
PURIFIED TEREPHTHALIC ACID	CHINA P RP	533557.53	355946.16
	TAIWAN	393402.00	264898.16
	THAILAND	338427.48	229373.11
	KOREA RP	210124.10	145035.41
	INDONESIA	140059.67	94798.43
	Product Total	1615570.78	1090051.27
LOW DENSITY POLYETHYLENE	SAUDI ARAB	54244.34	46161.03
	U S A	47940.09	40321.44
	U ARAB EMTS	46531.85	38801.82
	THAILAND	26617.47	28219.89
	BELGIUM	23048.31	29990.28
	Product Total	198382.06	183494.46
HIGH DENSITY POLYTHYLENE	U ARAB EMTS	768947.01	677663.95
	SAUDI ARAB	231179.68	199388.69
	U S A	182923.94	139947.45
	OMAN	162708.34	133917.28
	QATAR	157907.79	143995.15
	Product Total	1503666.75	1294912.52
POLYSTYRENE	KOREA RP	24688.68	41633.03
	THAILAND	22140.02	23407.09
	U ARAB EMTS	20082.34	17555.73

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
	TAIWAN	11052.54	13592.78
	CHINA P RP	8285.87	12734.11
	Product Total	86249.45	108922.75
POLYPROPYLENE (INC. CO-POLYMER)	U ARAB EMTS	490590.35	402150.26
	SAUDI ARAB	335775.50	276714.13
	SINGAPORE	321008.58	336967.56
	THAILAND	121123.16	123471.54
	CHINA P RP	90666.45	85432.73
	Product Total	1359164.04	1224736.21
EXPANDABLE POLYSTYRENE	CHINA P RP	684.08	731.41
	TAIWAN	386.66	430.78
	GERMANY	114.26	398.46
	KOREA RP	58.08	133.73
	AUSTRIA	47.50	131.95
	Product Total	1290.57	1826.34
POLY VINYL CHLORIDE	CHINA P RP	251671.60	172954.73
	THAILAND	87328.18	63532.30
	JAPAN	84129.22	54958.98
	TAIWAN	64701.59	47760.57
	KOREA RP	56389.61	39690.11
	Product Total	544220.20	378896.69
LINEAR LOW DENSITY POLYTHYLENE	SAUDI ARAB	89595.48	76227.72
	OMAN	70663.61	57133.88
	MALAYSIA	54233.18	44688.61
	U ARAB EMTS	45967.90	35251.14
	U S A	42313.42	31526.18
	Product Total	302773.59	244827.53
PVC COMPOUND	SINGAPORE	16.08	22.37
	TAIWAN	13.50	28.66
	BANGLADESH PR	1.67	2.11
	U S A	0.43	4.73
	CHINA P RP	0.12	0.77
	Product Total	31.80	58.64
STYRENE BUTADIENE RUBBER	KOREA RP	46906.75	68436.21
	POLAND	23285.91	32204.27
	CHINA P RP	20638.11	27566.05
	THAILAND	17640.52	31293.85
	SINGAPORE	10488.74	23178.23
	Product Total	118960.03	182678.62
POLY BUTADIENE RUBBER	KOREA RP	45456.91	64627.39
	SAUDI ARAB	18044.96	22763.68
	GERMANY	11318.06	16054.16
	U ARAB EMTS	10987.31	11308.17
	CHINA P RP	7476.17	10285.48
	Product Total	93283.39	125038.87
	KOREA RP	20308.87	38113.89
	SAUDI ARAB	12144.85	19957.94

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
ETHYL PROPYLENE DIMERS	U S A	11860.45	21545.16
	JAPAN	9144.04	19566.25
	CHINA P RP	3031.61	6211.85
	Product Total	56489.82	105395.09
ETHYL VINYL ACETATE	KOREA RP	100385.81	137224.35
	SAUDI ARAB	71854.70	81459.59
	JAPAN	11065.74	19503.25
	TAIWAN	10022.33	14176.19
	U S A	9667.81	12253.65
	Product Total	202996.38	264617.04
NITRILE BUTADIENE RUBBER	KOREA RP	24025.39	37148.05
	CHINA P RP	10764.28	14734.87
	JAPAN	5584.38	11386.24
	THAILAND	3831.51	7360.21
	TAIWAN	3662.78	7370.40
	Product Total	47868.34	77999.76
BUTYL RUBBER	SINGAPORE	33258.08	73220.18
	CHINA P RP	14042.20	23547.42
	JAPAN	4738.44	11439.56
	U ARAB EMTS	3606.17	6907.13
	U K	2224.96	7046.18
	Product Total	57869.85	122160.46
LINEAR ALKYL BENZENE	SAUDI ARAB	125240.08	174396.30
	QATAR	53892.45	66705.66
	THAILAND	44633.22	58497.25
	SPAIN	16145.94	21190.25
	JAPAN	4993.12	6359.29
	Product Total	244904.81	327148.75
ETHYLENE OXIDE	CHINA P RP	166.25	861.58
	U S A	14.62	978.87
	ARGENTINA	0.67	42.29
	BELGIUM	0.23	4.72
	Product Total	181.76	1887.46
ABS RESIN	KOREA RP	91962.38	130887.33
	TAIWAN	26902.59	30721.23
	MALAYSIA	3545.83	4912.71
	THAILAND	3331.02	4420.99
	U S A	416.09	662.97
	Product Total	126157.90	171605.24
POLYMETHYL METHACRYLATE	KOREA RP	14220.59	27234.17
	SAUDI ARAB	9747.05	12536.02
	SINGAPORE	6547.21	11033.94
	CHINA P RP	1615.17	3521.28
	NETHERLAND	911.86	2603.99
	Product Total	33041.87	56929.39
	KOREA RP	10002.18	12450.87
	THAILAND	5374.75	5286.12

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
STYRENE ACRYLONITRILE	CHINA P RP	2924.83	3514.99
	JAPAN	2786.50	3233.66
	SAUDI ARAB	1700.46	1246.26
	Product Total	22788.72	25731.89
POLYESTER CHIPS/PET CHIPS	CHINA P RP	138483.68	114266.53
	TAIWAN	16890.00	14334.96
	VIETNAM SOC REP	13439.30	10748.33
	U S A	7669.61	3601.28
	THAILAND	6101.20	4965.05
	Product Total	182583.79	147916.14
POLYTETRAFLUOROETHYLENE(PTFE)	CHINA P RP	2275.39	14765.00
	RUSSIA	943.61	4335.41
	KOREA RP	551.08	2582.10
	U S A	297.97	4927.64
	ITALY	235.24	1660.09
	Product Total	4303.29	28270.23
BUTADIENE	KOREA RP	14.97	19.67
	GERMANY	1.72	19.87
	Product Total	16.69	39.54
ETHYLENE	SINGAPORE	10489.73	10058.34
	MALAYSIA	10325.52	8963.36
	CHINA P RP	6691.26	6606.47
	SAUDI ARAB	6656.02	4421.09
	ITALY	6551.26	5018.85
	Product Total	40713.78	35068.11
PROPYLENE	SAUDI ARAB	6248.87	4721.52
	CHINA P RP	67.33	230.54
	JAPAN	36.00	95.49
	TAIWAN	18.31	22.25
	ITALY	5.99	11.81
	Product Total	6376.49	5081.61
BENZENE	OMAN	4860.65	2665.49
	BELGIUM	0.21	3.83
	GERMANY	0.11	3.90
	NETHERLAND	0.03	1.16
	SINGAPORE	0.01	0.81
	Product Total	4861.01	2675.19
MIXED XYLENE	KOREA RP	21.89	39.32
	JAPAN	0.38	9.59
	HONG KONG	0.02	3.46
	GERMANY	0.01	0.22
	U S A	0.01	0.08
	Product Total	22.30	52.67
ORTHO-XYLENE	SINGAPORE	45493.29	41099.87
	THAILAND	10046.97	9658.76
	KOREA RP	7475.07	6971.69
	TURKEY	1151.92	966.24

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
	TAIWAN	369.48	367.34
	Product Total	64536.73	59063.89
TOLUENE	KOREA RP	266496.21	222005.69
	THAILAND	98741.17	84890.47
	CHINA P RP	74888.58	65270.56
	PHILIPPINES	59726.70	50785.75
	TAIWAN	23238.81	20343.68
	Product Total	523091.47	443296.14
PARAXYLENE	JAPAN	422841.61	384194.93
	SINGAPORE	254099.76	230876.80
	KUWAIT	82055.53	71126.65
	OMAN	39456.49	35256.09
	BRUNEI	31435.38	28434.42
	Product Total	829888.77	749888.89
ETHYLENE DICHLORIDE	SAUDI ARAB	208384.39	58878.06
	U S A	134793.56	37692.42
	QATAR	107007.83	28874.07
	INDONESIA	41746.41	13536.28
	GERMANY	26185.85	6893.83
	Product Total	518118.05	145874.66
BUTANOL	U S A	20078.78	15248.02
	MALAYSIA	17760.57	14407.77
	SAUDI ARAB	14754.02	10490.13
	SOUTH AFRICA	4117.77	3279.45
	TAIWAN	2498.96	2078.09
	Product Total	59210.09	45503.45
OXO ALCOHOL	INDONESIA	1674.73	3589.51
	THAILAND	977.45	1932.99
	SINGAPORE	922.25	1938.85
	MALAYSIA	468.46	880.28
	CHINA P RP	196.52	655.17
	Product Total	4239.41	8996.80
2-ETHYL HEXANOL	MALAYSIA	12062.90	13054.21
	U S A	7886.44	7833.53
	SAUDI ARAB	5079.85	4590.32
	TAIWAN	1576.18	1721.93
	FRANCE	1078.76	1250.70
	Product Total	27684.13	28450.69
VINYL CHLORIDE MONOMER	QATAR	329822.98	189725.10
	JAPAN	107967.87	70735.59
	FRANCE	42134.07	25203.08
	INDONESIA	20424.36	13666.97
	CHINA P RP	7946.66	5163.67
	Product Total	508295.94	304494.41
EPICHLHYDRINE	THAILAND	57392.44	57913.29
	CHINA P RP	2203.12	2674.69
	TAIWAN	2069.60	2093.29

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
	KOREA RP	1600.80	1773.30
	U S A	1319.92	482.56
	Product Total	64585.88	64937.13
ISO BUTYLENE	CHINA P RP	57.67	111.67
	ITALY	0.00	0.01
	KOREA RP	0.00	0.24
	Product Total	57.68	111.92
METAXYLENE	CHINA P RP	1956.40	2397.01
	U S A	1214.12	1582.53
	TAIWAN	836.03	1098.11
	JAPAN	471.72	879.39
	THAILAND	75.79	120.12
	Product Total	4554.06	6077.15
METHYL ISOBUTYL KETONE	KOREA RP	34522.13	47143.07
	SOUTH AFRICA	7672.45	10016.39
	U S A	2662.61	3548.43
	BRAZIL	596.80	922.78
	NETHERLAND	76.22	94.78
	Product Total	45530.20	61725.45
PIB	KOREA RP	14335.77	20278.16
	MALAYSIA	2086.57	3287.18
	FRANCE	643.71	1342.40
	BRAZIL	435.62	473.73
	JAPAN	416.24	1402.99
	Product Total	17917.90	26784.45
POLYCARBONATE	THAILAND	94000.37	168561.76
	KOREA RP	89471.91	160958.58
	CHINA P RP	36315.93	58432.57
	U S A	24934.55	46682.71
	SAUDI ARAB	11590.61	17461.03
	Product Total	256313.38	452096.65
PROPYLENE OXIDE	SAUDI ARAB	9201.33	9982.61
	SINGAPORE	8723.10	10635.91
	THAILAND	4779.86	5593.27
	KOREA RP	2528.54	2923.84
	CHINA P RP	2488.67	3305.69
	Product Total	27721.51	32441.32
PROPYLENE GLYCOL	SINGAPORE	24306.56	28167.46
	CHINA P RP	20275.72	19276.67
	SAUDI ARAB	15406.59	12363.81
	KOREA RP	9481.71	11510.37
	THAILAND	8291.43	10248.88
	Product Total	77762.00	81567.18
POLYVINYL ACETATE RESIN	GERMANY	840.21	1684.47
	BELGIUM	700.30	1363.20
	CHINA P RP	256.06	760.96
	NETHERLAND	135.62	284.44

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
	INDONESIA	128.95	159.50
	Product Total	2061.14	4252.56
UNSATURATED POLYSTER RESIN	CHINA P RP	45223.11	51040.46
	TAIWAN	9247.63	14302.79
	MALAYSIA	4818.55	9864.29
	KOREA RP	3468.36	9014.42
	GERMANY	1007.25	5306.38
	Product Total	63764.89	89528.35
ETHYL BENZENE	CHINA P RP	592.66	792.76
	U S A	198.02	247.84
	NETHERLAND	39.82	73.86
	GERMANY	20.03	34.60
	BELGIUM	16.00	31.68
	Product Total	866.52	1180.74
CELLULOSE ACETATE BUTYRATE	FRANCE	9.50	18.67
	ITALY	0.00	1.02
	Product Total	9.50	18.67
CELLULOSE ACETATE SHEET	CHINA P RP	686.38	1225.65
	ITALY	487.79	264.81
	HONG KONG	18.85	104.60
	TAIWAN	5.88	49.40
	THAILAND	4.63	14.26
	Product Total	1203.52	1658.71
CELLULOSE NITRATE SHEET	CHINA P RP	100.99	297.86
	FRANCE	1.50	154.52
	SWITZERLAND	0.02	0.39
	NETHERLAND	0.01	0.18
	Product Total	102.52	452.94
MELAMINE MOULDING POWDER	CHINA P RP	8994.30	10548.68
	THAILAND	4897.68	6618.38
	JAPAN	906.33	1748.10
	INDONESIA	781.01	1649.66
	NETHERLAND	633.02	1732.90
	Product Total	16212.34	22297.72
POLYACETAL RESIN	KOREA RP	19136.88	31975.30
	MALAYSIA	16611.44	28847.17
	THAILAND	8600.86	12753.77
	U S A	5245.86	9997.44
	TAIWAN	2910.21	3735.74
	Product Total	52505.24	87309.43
PHTHALIC ANHYDRIDE	CHINA P RP	32318.36	29172.20
	TAIWAN	26154.60	23295.38
	THAILAND	9574.00	9020.41
	RUSSIA	4239.30	3961.91
	KOREA RP	3940.50	3783.85
	Product Total	76226.76	69233.75
	KUWAIT	338360.60	301496.22

PRODUCT	COUNTRY	QUANTITY (MT)	VALUE (RS. LAKHS)
(1)	(2)	(3)	(4)
STYRENE	SINGAPORE	289730.48	234869.42
	SAUDI ARAB	224789.76	194503.70
	KOREA RP	150908.44	144424.74
	TAIWAN	40290.11	36698.68
	Product Total	1044079.40	911992.75
VINYL ACTATE MONOMER	SINGAPORE	110152.91	83934.78
	SAUDI ARAB	82926.43	56510.21
	CHINA P RP	7876.92	7503.76
	BELGIUM	4019.12	2639.69
	KOREA RP	2300.59	1855.16
	Product Total	207275.96	152443.60
ISOPROPANOL	CHINA P RP	31937.10	28731.49
	TAIWAN	22028.67	18627.50
	U S A	21447.06	16449.78
	KOREA RP	19841.56	16651.22
	SOUTH AFRICA	7335.94	5442.48
	Product Total	102590.32	85902.46

Source: DGCIS, Kolkata, M/o Commerce and Industry

Table 29: Exchange Rates of Indian Rupee vis-a-vis US\$

MONTH	RS./US\$
(1)	(2)
March 2024	83.00
February 2024	82.96
January 2024	83.12
December 2023	83.28
November 2023	83.30
October 2023	83.24
September 2023	83.05
August 2023	82.79
July 2023	82.15
Jun 2023	82.23
May 2023	82.34
April 2023	82.02
March 2023	82.29
February 2023	82.61
January 2023	81.90
December 2022	82.46
November 2022	81.81
October 2022	82.34
September 2022	80.23
August 2022	79.55
July 2022	79.60
Jun 2022	78.07
May 2022	77.32
April 2022	76.41
March 2022	76.24
February 2022	75.00
January 2022	74.44
December 2021	75.37
November 2021	74.50
October 2021	74.92
September 2021	73.56
August 2021	74.18
July 2021	74.53
June 2021	73.56
May 2021	73.27
April 2021	74.47

Note: Worked out on the basis of average daily exchange rates, as notified by RBI.

Source: 1. <https://www.rbi.org.in/scripts/ReferenceRateArchive.aspx>

2. <https://www.fbil.org.in>

Table 30: World Exports of Chemicals by top 10 countries - 2023

Trade value in Million US\$													
Exports			Rank										World Export
			1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
HS Code	28	Country	China	USA	Germany	Chile	Japan	Australia	Netherlands	Canada	France	Kazakhstan	Total 28
		Trade Value	34280	15011	13134	9554	8845	6255	5969	5652	4931	4347	167061
	29	Country	China	USA	Ireland	Switzerland	Germany	Netherlands	India	Belgium	France	Japan	
		Trade Value	77911	51731	44594	40302	27855	20167	19475	15307	14950	14774	449414
	30	Country	Germany	Switzerland	USA	Ireland	Belgium	Italy	France	Netherlands	United Kingdom	Spain	
		Trade Value	120989	99011	90308	71564	60469	50321	37337	34196	27504	21861	806901
	31	Country	China	Canada	USA	Morocco	Saudi Arabia	Germany	Netherlands	Egypt	Israel	Belgium	
		Trade Value	9706	9547	5484	5459	4736	2937	2585	2458	1947	1912	69106
	32	Country	Germany	China	USA	Netherlands	Japan	Italy	France	Spain	United Kingdom	India	
		Trade Value	12674	9477	7977	4940	3898	3638	3369	3182	3163	3005	81576
	38	Country	USA	Germany	China	Netherlands	France	Japan	Italy	United Kingdom	Belgium	Spain	
		Trade Value	38636	36238	32619	18788	14415	12533	8133	7542	7438	7191	269191
	39	Country	China	USA	Germany	Netherlands	Italy	Japan	France	Belgium	Other Asia, nes	Saudi Arabia	
		Trade Value	131451	77796	66629	27057	24673	23626	23176	20089	17603	17426	662026
	4002	Country	Thailand	USA	Japan	China	Germany	Other Asia, nes	France	Singapore	Malaysia	Saudi Arabia	
		Trade Value	2639	2488	2037	1768	1496	950	837	770	682	588	18319
	54	Country	China	Other Asia, nes	Italy	Japan	India	Türkiye	USA	Germany	Netherlands	Spain	
		Trade Value	28632	1993	1849	1831	1794	1783	1533	1363	1041	769	50918
	55	Country	China	USA	Indonesia	India	Türkiye	Thailand	Germany	Austria	Italy	Japan	
		Trade Value	13211	2211	1797	1678	1656	1261	1200	1106	973	954	33326
All Chemicals@	Country	China	USA	Germany	Switzerland	Ireland	Netherlands	Belgium	Italy	France	Japan		
	Trade Value	350339	293174	284514	149856	127344	115513	113803	101210	100524	76262	2607837	
All Chemicals excluding Pharmaceuticals	Country	China	USA	Germany	Netherlands	Japan	France	Ireland	Belgium	Italy	Switzerland		
	Trade Value	339056	202866	163525	81317	68635	63187	55780	53334	50889	50845	1800936	

@-Includes all products covered under the HS code 28, 29, 30, 31, 32, 38, 39, 4002, 54 and

Chapter 28: Inorganic Chemicals; Organic or Inorganic Compounds of Precious Metals, of Rare-Earth Metals, of Radioactive Elements or of Isotopes;

Chapter 29: Organic Chemicals; **Chapter 30:** Pharmaceutical products; **Chapter 31:** Fertilizers ;

Chapter 32: Tanning or Dyeing Extracts; Tannins and their Derivatives; Dyes, Pigments and Other Colouring Matter; Paints and Varnishes; Putty and other Mastics Inks;

Chapter 38: Miscellaneous Chemical Products; **Chapter 39:** Plastics and articles thereof;

4002: Synthetic rubber and factice derived from oils, in primary forms or in plates, sheets or strip; mixtures of any pro;

Chapter 54: Man-made Filaments and **Chapter 55:** Man-made staple fibres

Source: <http://comtrade.un.org/> (UN Comtrade Database)

Table 31: World Imports of Chemicals by top 10 countries - 2023													
Imports			Rank										Trade value in Million US\$
			1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	World Import
HS Code	28	Country	China	USA	India	Japan	Germany	France	Poland	Canada	Netherlands	United Kingdom	Total 28
		Trade Value	26119	17310	9983	9521	9181	6059	5799	4935	4841	4174	169991
	29	Country	USA	China	Germany	India	Belgium	Italy	Ireland	Netherlands	Japan	France	Total 29
		Trade Value	66589	48586	45282	27259	26327	26247	21697	15837	15348	14557	496957
	30	Country	USA	Germany	Switzerland	Belgium	China	France	Italy	Japan	Netherlands	United Kingdom	Total 30
		Trade Value	177848	74719	58466	53726	43077	36151	32731	30825	28869	27348	836348
	31	Country	Brazil	India	USA	China	France	Australia	Canada	Mexico	Türkiye	Thailand	Total 31
		Trade Value	16007	10423	9817	5614	2834	2669	2495	2459	2387	2265	97687
	32	Country	Germany	USA	China	France	India	Netherlands	Italy	Mexico	Canada	Türkiye	Total 32
		Trade Value	6204	4922	4823	4088	3601	3108	3105	2900	2649	2608	79492
	38	Country	USA	China	Germany	Netherlands	France	Mexico	Italy	Canada	United Kingdom	India	Total 38
		Trade Value	26911	25169	22188	14786	12597	10393	9146	7709	7668	7601	276820
	39	Country	USA	China	Germany	Mexico	France	Italy	India	United Kingdom	Canada	Poland	Total 39
		Trade Value	72347	61965	49798	30715	27616	25835	22585	19655	19305	18323	658413
	4002	Country	China	USA	Thailand	India	Germany	Türkiye	Italy	Indonesia	Malaysia	Mexico	Total 4002
		Trade Value	8122	1428	1175	1166	1152	831	700	665	660	626	24479
	54	Country	Türkiye	China	USA	India	Indonesia	Italy	Germany	Brazil	Egypt	Mexico	Total 54
		Trade Value	2179	2093	2022	1806	1751	1604	1462	1444	1301	1237	36233
	55	Country	USA	Türkiye	Germany	China	Indonesia	Italy	Cambodia	Morocco	India	Brazil	Total 55
		Trade Value	1713	1661	1572	1453	1164	1147	1099	1016	982	866	28290
All Chemicals@		Country	USA	China	Germany	Belgium	France	Italy	Netherlands	India	Japan	Switzerland	
		Trade Value	380907	227021	213372	106835	105858	105127	88207	88009	82821	79779	2704712
All Chemicals excluding Pharmaceuticals		Country	USA	China	Germany	India	Italy	France	Mexico	Netherlands	Brazil	Belgium	
		Trade Value	203059	183945	138653	85407	72396	69707	63711	59338	54741	53109	1868364

@-Includes all products covered under the HS code 28, 29, 30, 31, 32, 38, 39, 4002, 54 and 55

Chapter 28: Inorganic Chemicals; Organic or Inorganic Compounds of Precious Metals, of Rare-Earth Metals, of Radioactive Elements or of Isotopes;

Chapter 29: Organic Chemicals; **Chapter 30:** Pharmaceutical products; **Chapter 31:** Fertilizers ;

Chapter 32: Tanning or Dyeing Extracts; Tannins and their Derivatives; Dyes, Pigments and Other Colouring Matter; Paints and Varnishes; Putty and other Mastics Inks;

Chapter 38: Miscellaneous Chemical Products; **Chapter 39:** Plastics and articles thereof;

4002: Synthetic rubber and factice derived from oils, in primary forms or in plates, sheets or strip; mixtures of any pro;

Chapter 54: Man-made Filaments and **Chapter 55:** Man-made staple fibres

Source: <http://comtrade.un.org/> (UN Comtrade Database)

Table 32: India's share in World Exports and Imports of Chemicals - 2023

Value in Million US\$

HS Code	Commodity	Export				Import			
		Trade Value		% of World Export	Rank in the World	Trade Value		% of World Import	Rank in the World
		India	World			India	World		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
28	INORGANIC CHEMICALS	3245	167061	1.9	14	9983	169991	5.9	3
29	ORGANIC CHEMICALS	19475	449414	4.3	7	27259	496957	5.5	4
30	PHARMACEUTICAL PRODUCTS	21301	806901	2.6	11	2602	836348	0.3	38
31	FERTILISERS.	123	69106	0.2	49	10423	97687	10.7	2
32	TANNING OR DYEING	3005	81576	3.7	10	3601	79492	4.5	5
38	MISCELLANEOUS CHEMICAL PRODUCTS.	6637	269191	2.5	12	7601	276820	2.7	10
39	PLASTIC AND ARTICLES THEREOF	7118	662026	1.1	23	22585	658413	3.4	7
4002	SYNTHETIC RUBBER AND FACTICE	123	18319	0.7	23	1166	24479	4.8	4
54	MAN-MADE FILAMENTS	1794	50918	3.5	5	1806	36233	5.0	4
55	MAN-MADE STAPLE FIBRES	1678	33326	5.0	4	982	28290	3.5	9
All Chemicals @		64499	2607837	2.5	14	88009	2704712	3.3	8
Chemicals (excluding Pharmaceutical Products)		43198	1800936	2.4	11	85407	1868364	4.6	4
Total of All HS Code Commodities		431412	21473367	2.0	15	672140	22011993	3.1	7

@-Includes all products covered under the HS code 28, 29, 30, 31, 32, 38, 39, 4002, 54 and 55

Chapter 28: Inorganic Chemicals; Organic or Inorganic Compounds of Precious Metals, of Rare-Earth Metals, of Radioactive Elements or of Isotopes;**Chapter 29:** Organic Chemicals; **Chapter 30:** Pharmaceutical products; **Chapter 31:** Fertilizers ;**Chapter 32:** Tanning or Dyeing Extracts; Tannins and their Derivatives; Dyes, Pigments and Other Colouring Matter; Paints and Varnishes; Putty and other Mastics Inks;**Chapter 38:** Miscellaneous Chemical Products; **Chapter 39:** Plastics and articles thereof;**4002:** Synthetic rubber and factice derived from oils, in primary forms or in plates, sheets or strip; mixtures of any pro;**Chapter 54:** Man-made Filaments and **Chapter 55:** Man-made staple fibres**Source:** <http://comtrade.un.org/> (UN Comtrade Database)

Section - IV

Foreign Direct Investment (FDI)

Table 33: Sectors Attracting Highest FDI Equity Inflows during 2021-22 to 2023-24

Amount in Rupees Crores/ in USD Million

Ranks	Sector	Amt. in Rupees Crores/ Amt. in USD Million	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)
1	SERVICES SECTOR **	Rupees Crores	53,165	69,852	54,894
		USD Million	7,131	8,707	6,640
2	COMPUTER SOFTWARE & HARDWARE	Rupees Crores	107,762	74,718	66,090
		USD Million	14,461	9,394	7,973
3	TRADING	Rupees Crores	33,779	38,060	32,080
		USD Million	4,538	4,792	3,865
4	TELECOMMUNICATIONS	Rupees Crores	4,980	5,469	2,318
		USD Million	668	713	282
5	AUTOMOBILE INDUSTRY	Rupees Crores	51,624	15,184	12,622
		USD Million	6,994	1,902	1,524
6	CONSTRUCTION (INFRASTRUCTURE) ACTIVITIES	Rupees Crores	24,178	13,588	35,076
		USD Million	3,248	1,703	4,232
7	CONSTRUCTION DEVELOPMENT: Townships, housing, built-up infrastructure and construction-development projects	Rupees Crores	932	1,196	2,113
		USD Million	125	146	255
8	DRUGS & PHARMACEUTICALS	Rupees Crores	10,552	16,654	8,844
		USD Million	1,414	2,058	1,064
9	CHEMICALS (OTHER THAN FERTILIZEINR)	Rupees Crores	7,202	14,662	6,985
		USD Million	966	1,850	844
10	POWER	Rupees Crores	3,904	5,483	14,141
		USD Million	526	698	1,701

*Note:(i) ** Services sector includes Financial, Banking, Insurance, Non-Financial / Business, Outsourcing, R&D, Courier, Tech. Testing and Analysis, Other*

(ii) %age worked out in USD terms & FDI inflow received through Government Route + Automatic Route + acquisition of existing shares only.

(iii) FDI Sectoral data has been revalidated / reconciled in line with the RBI, which may reflect minor changes in the FDI figures (increase/decrease) as compared to the earlier published sectoral data.

(iv) Figures are provisional.

(v) Source: <https://dpiit.gov.in/publications/fdi-statistics>

Section - V

Index of Industrial Production (IIP)

Table 34: Monthly Production Growth in 'Chemicals and Chemical Products' vis-a-vis Manufacturing Sector during April 2023 to March 2024 (Based on Index of Industrial Production with Base year: 2011-12)

Period	Chemicals and chemical products	Manufacturing	General
Weight	7.87	77.63	100.00
Index of Industrial Production (Base Year : 2011-12=100)			
Apr / 2023	126.6	138.8	140.7
May / 2023	133.8	143.1	145.6
Jun / 2023	130.5	141.6	143.9
Jul / 2023	128.6	142.1	142.7
Aug / 2023	126.8	144.4	145.8
Sep / 2023	123.6	141.5	142.3
Oct / 2023	126.5	142.1	144.9
Nov / 2023	119.5	139.3	141.1
Dec / 2023	127.5	151.6	152.3
Jan / 2024	127.6	150.8	153.6
Feb / 2024	125.4	144.4	147.1
Mar / 2024	132.3	156.2	160.0
Production Growth (%)			
Apr / 2023	2.7	5.5	4.6
May / 2023	-1.3	6.3	5.7
Jun / 2023	-2.2	3.5	4.0
Jul / 2023	-6.3	5.3	6.2
Aug / 2023	-3.9	10.0	10.9
Sep / 2023	-5.8	5.1	6.4
Oct / 2023	3.6	10.6	11.9
Nov / 2023	-4.1	1.3	2.5
Dec / 2023	-1.5	4.6	4.4
Jan / 2024	-2.0	3.6	4.2
Feb / 2024	2.1	4.9	5.6
Mar / 2024	1.7	5.9	5.5

Source: Ministry of Statistics and Programme Implementation(MoSPI)

Table 35: Annual Production Growth in Chemicals and Chemical Products Vis -a-Vis Manufacturing Sector during 2017-18 to 2023-24 (Based on Index on Industrial Production with Base year: 2011-12)

Years	Chemicals and Chemical Products	Manufacturing	General
Weight	7.87	77.63	100.00
Index of Industrial Production (Base Year: 2011-12=100)			
2016-17	116.5	121.0	120.0
2017-18	116.1	126.6	125.3
2018-19	119.0	131.5	130.1
2019-20	118.5	129.6	129.0
2020-21	116.0	117.2	118.1
2021-22	121.0	131.0	131.6
2022-23	129.3	137.1	138.5
2023-24	127.4	144.7	146.7
Production Growth (%)			
2017-18	-0.3	4.6	4.4
2018-19	2.5	3.9	3.8
2019-20	-0.4	-1.4	-0.8
2020-21	-2.1	-9.6	-8.4
2021-22	4.3	11.8	11.4
2022-23	6.9	4.7	5.2
2023-24	-1.5	5.5	5.9

Source: Ministry of Statistics and Programme Implementation

Table 36: Weights of Products Covered Under Chemical and Chemical Products (Industry Division 20 of NIC- 2008) in the Index of Industrial Production for Manufacturing Sector.

NIC 2008, 5- Digit	Item groups	Weights (in %)	Name of Source Agencies
(1)	(2)	(3)	(4)
20111	Oxygen	0.0423	DPIIT
20112	Acetic Acid	0.0191	DCPC
20112	Phosphoric acid	0.0157	DPIIT
20112	Purified Terephthalic Acid (PTA)	0.3512	DCPC
20112	Sulphuric Acid	0.0479	DPIIT
20114	Dyes and pigments	0.2355	DCPC
20115	ABS resin	0.0188	DCPC
20116	Calcium Carbonate	0.0572	DCPC
20116	Caustic soda (sodium hydroxide)	0.1638	DCPC
20116	Ethyl acetate	0.0571	DCPC
20116	Isopropyl alcohol	0.0178	DCPC
20116	Monoethylene glycol, MEG	0.0413	DCPC
20116	Soda ash/ washing soda	0.1200	DCPC
20116	Titanium dioxide	0.0362	DCPC
20116	Zinc sulphate	0.0150	DPIIT
20118	Aromatic Chemicals	0.0806	DPIIT
20119	Aniline	0.0154	DCPC
20119	Butadiene	0.0335	DCPC
20119	Catalyst, chemical	0.0415	DPIIT
20119	Expandable Polystyrene , EPS (thermocol)	0.0521	DCPC
20119	Fatty Acid	0.0254	DPIIT
20119	Linear Alkyl Benzene	0.0563	DCPC
20119	Liquid chlorine	0.0595	DCPC
20119	Phthalic anhydride, PAN	0.0353	DCPC
20119	Polyol	0.0636	DCPC
20119	Sodium Silicate	0.0204	DPIIT
20121	Urea	0.5590	D/o Fertilizers
20122	NPK fertilizers	0.3897	D/o Fertilizers
20123	Ammonia	0.2101	DPIIT
20123	Ammonium nitrate	0.0118	DPIIT
20123	Ammonium sulphate	0.0261	DPIIT
20123	Formaldehyde	0.0121	DCPC
20123	Nitric Acid	0.0181	DPIIT
20129	Diammonium Phosphate (DAP)	0.0761	D/o Fertilizers
20129	Superphosphate	0.0332	D/o Fertilizers
20131	Polyester chips or Polyethylene terephthalate(PET) chips	0.1108	DCPC
20131	Polymers (incl. Polyethylene, PVC, Poly propylene)	0.5954	DCPC
20131	PTFE (TEFLON)	0.0244	DCPC
20132	Caprolactam	0.0457	DCPC
20132	Synthetic rubber (incl. PBR, SBR)	0.0295	DCPC
20211	Detergent powder and washing powder	0.2578	DPIIT
20211	Pesticides-technical grade	0.2116	DCPC
20221	Paints (all types)	0.3874	DPIIT
20221	Varnish (all types)	0.0209	DPIIT
20223	Printing ink	0.0795	DPIIT
20229	Thinner	0.0110	DPIIT
20231	Toilet soap (excl. baby soap)- incl. liquid soap and foam	0.6078	DPIIT
20232	Organic surface active agents/ surfactants, except soap (incl. dishwashing soaps, wetting and cleansing agents)	0.1378	DPIIT
20233	Detergent cake, washing soap cake/ bar	0.4607	DPIIT
20235	Tooth paste	0.3223	DPIIT
20236	Hair dye	0.0468	DPIIT
20236	Hair oil	0.0556	DPIIT
20236	Hair shampoo	0.0929	DPIIT
20237	Creams and lotions for topical application	0.1255	DPIIT

NIC 2008, 5- Digit	Item groups	Weights (in %)	Name of Source Agencies
(1)	(2)	(3)	(4)
20238	Agarbatti	0.1706	DPIIT
20291	Safety matches (match box)	0.0638	DPIIT
20292	Fire works/pyrotechnic articles	0.0366	DPIIT
20292	Gun powder, detonators/ prepared explosives	0.0397	DPIIT
20293	Fragrances & Oil essentials	0.1967	DPIIT
20295	Adhesive formulations other than natural gum	0.3985	DPIIT
20295	Gelatin	0.0233	DPIIT
20297	Methanol	0.0291	DCPC
20299	Hydrogen Peroxide	0.0500	DCPC
20299	Mosquito coil	0.0215	DPIIT
20302	Man-made fibres (incl. Viscose and Artificial Fibres)	0.1614	DCPC & O/o Textile Commissioner

Source: Ministry of Statistics and Programme Implementation

DPIIT: Department for Promotion of Industry and Internal Trade

DCPC: Department of Chemicals and Petrochemicals

Section - VI

Inflation Based on Wholesale Price Index (WPI)

Table 37: Annual Inflation of Chemicals & Chemical products vis-à-vis other commodities during 2017-18 to 2023-24 (Based on Wholesale Price Index with base year: 2011-12)

Year	All Commodities	Food Articles	Manufactured Products	Chemicals & Chemical Products
Weight (%)	100.00	15.26	64.23	6.47
Wholesale Price Index (Base Year: 2011-12=100)				
2016-17	111.60	140.30	110.70	111.00
2017-18	114.90	143.20	113.80	112.50
2018-19	119.80	143.70	117.90	119.10
2019-20	121.80	155.80	118.30	117.50
2020-21	123.40	160.70	121.50	118.20
2021-22	139.40	167.30	135.00	133.50
2022-23	152.50	179.50	142.60	145.40
2023-24	151.40	191.30	140.20	136.90
Inflation (%)				
2017-18	2.96	2.07	2.80	1.35
2018-19	4.26	0.35	3.60	5.87
2019-20	1.67	8.42	0.34	-1.34
2020-21	1.31	3.15	2.70	0.60
2021-22	12.97	4.11	11.11	12.94
2022-23	9.40	7.29	5.63	8.91
2023-24	-0.72	6.57	-1.68	-5.85

Source: Office of the Economic Advisor (<http://eaindstry.nic.in>)

Table 38:- Monthly Inflation of Chemicals & Chemical Products vis-a-vis Other Commodities during April-2023 to March-2024 (Based on Wholesale Price Index with base year: 2011-12)

Month	All Commodities	Food Articles	Manufactured Products	Chemicals & Chemical Products
Weight (%)	100.00	15.26	64.23	6.47
Wholesale Price Index (Base Year: 2011-12)				
Apr / 2023	151.1	182.1	141.4	141.1
May / 2023	149.4	181.3	140.6	139.6
Jun / 2023	148.9	184.9	139.9	137.9
Jul / 2023	152.1	205.9	139.5	136.6
Aug / 2023	152.5	202.8	139.9	136.3
Sep / 2023	151.8	189.1	140.4	136.3
Oct / 2023	152.5	192.0	140.4	136.6
Nov / 2023	153.1	197.0	140.2	136.0
Dec / 2023	151.8	191.2	140.0	135.7
Jan / 2024	151.2	188.8	139.7	135.4
Feb / 2024	151.2	189.4	139.8	135.4
Mar / 2024	151.4	191.4	140.1	135.6
Inflation (%)				
Apr / 2023	0.1	1.8	0.1	-0.8
May / 2023	-1.1	-0.4	-0.6	-1.1
Jun / 2023	-0.3	2.0	-0.5	-1.2
Jul / 2023	2.1	11.4	-0.3	-0.9
Aug / 2023	0.3	-1.5	0.3	-0.2
Sep / 2023	-0.5	-6.8	0.4	0.0
Oct / 2023	0.5	1.5	0.0	0.2
Nov / 2023	0.4	2.6	-0.1	-0.4
Dec / 2023	-0.8	-2.9	-0.1	-0.2
Jan / 2024	-0.4	-1.3	-0.2	-0.2
Feb / 2024	0.0	0.3	0.1	0.0
Mar / 2024	0.1	1.1	0.2	0.1

Source: Office of the Economic Advisor (<http://eaindustry.nic.in>)

Table 39 :- WPI (Base year 2011-12) of Chemicals & Chemical Products (Group Wise) during 2017-18 to 2023-24

Description	Weight	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(8)
Chemicals and Chemical Products	6.47	112.50	119.10	117.50	118.20	133.50	145.40	136.90
(a) Basic Chemicals	1.43	111.20	125.00	119.90	118.60	143.80	159.20	139.90
(b) Fertilizers and Nitrogen Compounds	1.48	117.10	121.10	123.10	123.60	129.60	144.80	142.80
(c) plastic and synthetic rubber in primary form	1.00	113.00	117.60	112.40	116.70	140.30	143.20	132.30
(d) Pesticides and Other Agrochemical Products	0.45	115.30	120.20	122.60	124.40	132.10	143.40	132.80
(e.) paints, Varnishes and Similar Coatings, Printing Ink and Mastics	0.49	108.60	112.70	114.70	114.90	130.40	145.00	143.70
(f) Soap and Detergents, Cleaning and Polishing Preparations, Perfumes and Toilet Preparations	0.61	115.20	116.80	118.60	120.60	128.10	140.80	139.70
(g) Other Chemical Products	0.69	110.10	116.60	114.20	115.10	130.30	142.10	134.40
(h) Man-Made Fibres	0.30	97.50	104.00	97.90	93.70	106.60	110.70	103.60

Source: Office of the Economic Advisor (<http://eaindustry.nic.in>)

Section - VII

Miscellaneous

Tab 40: Growth Rates of Core Industries from 2018-19 to 2023-24 (Base Year: 2011-12)

Sector	Weight (%)	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Coal (%)	10.33	7.4	-0.4	-1.9	8.5	14.8	11.8
Crude Oil (%)	8.98	-4.1	-5.9	-5.2	-2.6	-1.7	0.6
Natural Gas (%)	6.88	0.8	-5.6	-8.2	19.2	1.6	6.1
Refinery Products (%)	28.04	3.1	0.2	-11.2	8.9	4.8	3.6
Fertilizers (%)	2.63	0.3	2.7	1.7	0.7	11.3	3.7
Steel (%)	17.92	5.1	3.4	-8.7	16.9	9.3	12.5
Cement (%)	5.37	13.3	-0.9	-10.8	20.8	8.7	8.9
Electricity (%)	19.85	5.2	0.9	-0.5	8.0	8.9	7.1
Overall Index	100.00	4.4	0.4	-6.4	10.4	7.8	7.6

Source: Office of the Economic Advisor (<http://eaindustry.nic.in>)

Table 41: Index of Core Industries from 2018-19 to 2023-24 (Base year 2011-12)

Sector	Weight (%)	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Coal	10.33	134.1	133.6	131.1	142.3	163.5	182.7
Crude Oil	8.98	89.8	84.5	80.1	77.9	76.6	77.1
Natural Gas	6.88	69.0	65.1	59.8	71.3	72.4	76.8
Refinery Products	28.04	129.1	129.4	114.9	125.1	131.2	135.9
Fertilizers	2.63	107.0	109.8	111.6	112.4	125.1	129.8
Steel	17.92	147.7	152.6	139.4	163.0	178.1	200.4
Cement	5.37	147.0	145.7	130.0	156.9	170.6	185.7
Electricity	19.85	156.9	158.4	157.6	170.1	185.2	198.3
Overall Index	100.00	131.2	131.6	123.2	136.1	146.7	157.8

Source: Office of the Economic Advisor (<http://eaindstry.nic.in>)

Table 42: Consumption of Naphtha, Natural Gas and Fuel Oil from 2019-20 to 2023-24

Name of Product	Description	Unit	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)
Naphtha	Production	K Tonnes	20679	19403	19994	17036	18736
	Import	K Tonnes	1662	1199	237	897	1211
		Value in Rs. Crore	6678	3844	1499	4781	6627
	Export	K Tonnes	8897	6509	6861	5714	5275
		Value in Rs. Crore	31509	18643	37231	33357	27019
	Availability	K Tonnes	13444	14093	13370	12219	14671
	Consumption	K Tonnes	14268	14100	13246	12127	13812
Natural Gas¹	Gross Production	MMSCM	31184	28673	34024	34450	36438
	Net Production	MMSCM	30257	27784	33116	33648	35677
	Import \$	MMSCM	32352	33198	31028	26304	31795
		Value in Rs. Crore	68467	58329	100521	137210	110994
	Availability	MMSCM	62609	60981	64159	59969	67512
	Consumption **	MMSCM	56492	56117	61491	58702	68761
Fuel Oil	Production	K Tonnes	8609	7242	8327	9242	9021
	Import	K Tonnes	4583	6454	8980	8563	9053
		Value in Rs. Crore	11791	14312	32815	33474	33669
	Export	K Tonnes	1527	1177	1757	1841	2103
		Value in Rs. Crore	3811	2318	6633	7834	7961
	Availability	K Tonnes	11665	12519	15550	15964	15970
	Consumption	K Tonnes	6302	5586	6262	6958	6520
Naphtha	Fertilizers Sector	K Tonnes	150	66	0	0	0
	Petrochemical Sector	K Tonnes	10874	11339	11904	10402	10424
Natural Gas²	Fertilizer Industries	MMSCM	16115	17781	18079	19400	21046
	Petrochemicals Industry	MMSCM	3569	3072	2864	1959	2667
Fuel Oil (Furnace Oil + LSHS)	Chemicals & allied	K Tonnes	253	237	239	205	120

**.Sectorial Consumption

Source: Oil & Gas CPSEs and PPAC, Ministry of Petroleum and Natural Gas(M/o PNG)

Table 43: Important indicators of Industry Division 20 & 21 (Unincorporated Sector) in 2015-16 (July 2015 - June 2016)

Description	Rural	Urban	Rural + Urban
(1)	(2)	(3)	(4)
Estimated number of workers in Industry Division 20 (Unincorporated) of NIC 2008	204480	167540	372020
Estimated number of workers in Industry Division 21 (Unincorporated) of NIC 2008	12692	9454	22146
Estimated number of workers in Unincorporated Manufacturing sector	18655607	17385712	36041319
Estimated number of workers in Unincorporated sector (All activities) #	49867273	61403553	111270826
Estimated number of enterprises in Industry Division 20 (Unincorporated) of NIC 2008	105985	66721	172706
Estimated number of enterprises in Industry Division 21 (Unincorporated) of NIC 2008	2935	3410	6345
Estimated number of enterprises in Unincorporated manufacturing sector	11414431	8250444	19664875
Estimated number of enterprises in Unincorporated sector (All activities) #	32489670	30902305	63391974
Estimated GVA of Industry Division 20 (Unincorporated) (in Rs. Crore)	780	1552	2332
Estimated GVA of Industry Division 21 (Unincorporated) (in Rs. Crore)	130	143	273
Estimated GVA of Manufacturing Sector (Unincorporated) (in Rs. Crore)	89829	178233	268062
Estimated GVA of Unincorporated sector (All activities) (in Rs. Crore)	344872	807437	1152309
Share of GVA from Industry Division 20 (Unincorporated) in GVA Unincorporated sector (All activities) (in %)	0.2	0.2	0.2
Share of GVA from Industry Division 21 (Unincorporated) in GVA Unincorporated sector (All activities) (in %)	0.0	0.0	0.0
Share of GVA from Manufacturing sector (Unincorporated) in GVA Unincorporated sector (All activities) (in %)	26.0	22.1	23.3
GVA per worker of Industry Division 20 (Unincorporated) sector (in Rs.)	38146	92635	62685
GVA per worker of Industry Division 21 (Unincorporated) sector (in Rs.)	102427	151259	123273
GVA per worker of Manufacturing sector (Unincorporated) (in Rs.)	48151	102517	74376
GVA per worker of unincorporated sector (All Activities) in Rs.	69158	131497	103559
GVA per enterprise of Industry Division 20 (Unincorporated) sector (in Rs.)	73595	232610	135027
GVA per enterprise of Industry Division 21 (Unincorporated) sector (in Rs.)	442930	419355	430260
GVA per enterprise of Manufacturing Sector (Unincorporated) (in Rs.)	78698	216028	136315
GVA per enterprise of Unincorporated Sector (All activities) (in Rs.)	106148	261287	181775

including Manufacturing activities, Noncaptive electricity generation , trading activities and other services (non agricultural enterprises excluding constructions)

Source: NSS Report (No.582: Economic Characteristics of Unincorporated Non-Agricultural Enterprises (Excluding Construction) in India) of Ministry of Statistics & Programme Implementation

Table 44: Employment in Chemicals and Chemicals products (Industry Division 20, NIC-2008) during 2017-18 to 2022-23

S.No.	Industry	Number of Persons Engaged					
		2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
(1)	(2)	(2)	(3)	(4)	(5)	(6)	(7)
1	Chemicals and Chemicals products (Industry Division 20, NIC 2008)	828315	887240	932428	958839	1026380	1058217
2	Industries Other than Chemicals and Chemicals products	14786304	14120926	15691863	15130861	16188970	17436745
3	All Industries	15614619	16280211	16624291	16089700	17215350	18494962
4	Share in Employment (%)						
	(a) Share of Chemicals and Chemicals products	5.3	5.4	5.6	6.0	6.0	5.7
	(b) Share of Other than Chemicals and Chemicals products	94.7	86.7	94.4	94.0	94.0	94.3
5	Growth in Employment (%)						
	(a) Chemicals and Chemicals products	4.8	7.1	5.1	2.8	7.0	3.1
	(b) Industries Other than Chemicals and Chemicals products	4.7	-4.5	11.1	-3.6	7.0	7.7
	(c) All Industries	4.7	4.3	2.1	-3.2	7.0	7.4

Note: As per NIC - 2008, Chemical & Chemical products are covered under the Industry Division 20.

Source: Annual Survey of Industries (ASI) Results, Ministry of Statistics & Programme Implementation

Table 45: Gross Value Added from Chemical and Chemical products (Industry Division 20: NIC 2008) and Pharmaceutical; medicinal chemicals and botanical product (Industry Division 21: NIC 2008) vis-a-vis Manufacturing sector and all Economic Activities

At Current Prices

(Rs. In Crore)

Description	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Industry Division 20: Chemical and chemical products (Corporate)	223172	247860	264075	283853	308932	343692
Industry Division 20: Chemical and chemical products (Household)	1423	2173	1673	1604	2271	2644
Industry Division 20: Chemical and chemical products (Corporate +Household)	224595	250032	265747	285458	311203	346336
Growth over previous year (%)	7.7	11.3	6.3	7.4	9.0	11.3
Industry Division 21: Pharmaceutical; medicinal chemicals and botanical products (Corporate)	165019	190831	202381	223911	256098	246251
Industry Division 21: Pharmaceutical; medicinal chemicals and botanical products (Household)	585	606	726	851	1133	1146
Total Pharmaceutical; medicinal chemicals and botanical products (Industry Division 21)	165604	191437	203107	224762	257231	247397
Total Chemical and chemical products including Pharmaceutical; medicinal chemicals and botanical products (Industry Division 20 and 21)	390199	441470	468854	510220	568434	593733
Growth over previous year (%)	6.5	13.1	6.2	8.8	11.4	4.5
Manufacturing (Corporate)	2248880	2459081	2363718	2456813	2960021	3076730
Manufacturing (Household)	317743	353479	341383	346681	432584	459732
Manufacturing (Corporate +Household)	2566623	2812560	2705101	2803495	3392605	3536461
Growth over previous year (%)	10.0	9.6	-3.8	3.6	21.0	4.2
GVA at basic prices for All Economic activities	15505665	17175128	18381117	18210997	21635584	24659041
Growth over previous year (%)	11.0	10.8	7.0	-0.9	18.8	14.0
Share of GVA of Manufacturing sector in GVA for All Economic Activities	16.6	16.4	14.7	15.4	15.7	14.3
Share of GVA of Chemical and chemical products excluding Pharmaceutical; medicinal chemicals and botanical products (Industry Division 20) in GVA for All Economic Activities	1.4	1.5	1.4	1.6	1.4	1.4
Share of GVA of Chemical and chemical products including Pharmaceutical; medicinal chemicals and botanical products (Industry Division 20 and 21) in GVA for All Economic Activities	2.5	2.6	2.6	2.8	2.6	2.4
Share of GVA of chemical and chemical products (Industry Division 20) in GVA for Manufacturing Sector	8.8	8.9	9.8	10.2	9.2	9.8
Share of GVA of chemical and chemical products including Pharmaceutical; medicinal chemicals and botanical products (Industry Division 20 and 21) in GVA for Manufacturing Sector	15.2	15.7	17.3	18.2	16.8	16.8

Source: National Accounts Statistics, Ministry of Statistics & Programme Implementation.

Table 46: Gross Value Added from Chemical and Chemical products (Industry Division 20: NIC 2008) and Pharmaceutical; medicinal chemicals and botanical product (Industry Division 21: NIC 2008) vis-a-vis Manufacturing sector and all Economic Activities

At Constant Price (2011-12)

(Rs. In Crore)

Description	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Industry Division 20: Chemical and chemical products (Corporate)	126099	145051	172538	190147	231410	236377
Industry Division 20: Chemical and chemical products (Household)	1265	1824	1424	1357	1701	1818
Industry Division 20: Chemical and chemical products (Corporate +Household)	127364	146876	173961	191504	233111	238195
Growth over previous year (%)	2.8	15.3	18.4	10.1	21.7	2.2
Industry Division 21: Pharmaceutical; medicinal chemicals and botanical products (Corporate)	136154	154519	158980	171055	188446	174770
Industry Division 21: Pharmaceutical; medicinal chemicals and botanical products (Household)	483	491	570	650	834	813
Total Pharmaceutical; medicinal chemicals and botanical products (Industry Division 21)	136637	155010	159550	171705	189280	175583
Total Chemical and chemical products including Pharmaceutical; medicinal chemicals and botanical products (Industry Division 20 and 21)	264001	301885	333511	363210	422390	413779
Growth over previous year (%)	3.2	14.4	10.5	8.9	16.3	-2.0
Manufacturing (Corporate)	1941557	2039878	1981512	2049824	2244755	2185607
Manufacturing (Household)	267871	289114	278193	279336	316278	319056
Manufacturing (Corporate +Household)	2209428	2328992	2259706	2329160	2561033	2504663
Growth over previous year (%)	7.5	5.4	-3.0	3.1	10.0	-2.2
GVA at basic prices for All Economic activities	12034171	12733798	13236100	12687345	13876840	14804901
Growth over previous year (%)	6.2	5.8	3.9	-4.1	9.4	6.7
Share of GVA of Manufacturing sector in GVA for All Economic Activities	18.4	18.3	17.1	18.4	18.5	16.9
Share of GVA of Chemical and chemical products excluding Pharmaceutical; medicinal chemicals and botanical products (Industry Division 20)in GVA for All Economic Activities	1.1	1.2	1.3	1.5	1.7	1.6
Share of GVA of Chemical and chemical products including Pharmaceutical; medicinal chemicals and botanical products (Industry Division 20 and 21) in GVA for All Economic Activities	2.2	2.4	2.5	2.9	3.0	2.8
Share of GVA of chemical and chemical products (Industry Division 20) in GVA for Manufacturing Sector	5.8	6.3	7.7	8.2	9.1	9.5
Share of GVA of chemical and chemical products, including Pharmaceutical; medicinal chemicals and botanical products (Industry Division 20 and 21)in GVA for Manufacturing Sector	11.9	13.0	14.8	15.6	16.5	16.5

Source: National Accounts Statistics, Ministry of Statistics & Programme Implementation.

Table 47: Value of Output from Chemicals and Chemical products (Industry Division 20: NIC 2008) and Pharmaceutical; medicinal chemicals and botanical products (Industry Division 21: NIC 2008) vis-a-vis Manufacturing sector

At Current prices

(Rs. In crore)

Description	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Manufacturing (Corporate)	8162260	9032405	10845743	10827558	10637200	14481692	17058996
Manufacturing (Household)	824799	936733	1058116	1028602	1056610	1290560	1390059
Manufacturing (Corporate +Household)	8987059	9969138	11903859	11856161	11693810	15772252	18449055
Chemical and chemical products (Corporate) (Industry Division 20)	662125	729330	950939	968502	953211	1285083	1563258
Chemical and chemical products (Household) (Industry Division 20)	5137	7104	10848	8352	8011	11339	13201
Total Chemical and chemical products excluding Pharmaceutical; medicinal chemicals and botanical products (Industry Division 20)	667262	736434	961786	976854	961222	1296422	1576459
Pharmaceutical; medicinal chemicals and botanical products --Corporate (Industry Division 21)	318143	325755	399906	436614	503296	606488	637128
Pharmaceutical; medicinal chemicals and botanical products --Household (Industry Division 21)	3330	2922	3026	3623	4250	5657	5722
Total Pharmaceutical; medicinal chemicals and botanical products (Industry Division 21)	321472	328677	402932	440237	507547	612145	642851
Total Chemical and chemical products including Pharmaceutical; medicinal chemicals and botanical products (Industry Division 20 and 21)	988734	1065111	1364718	1417091	1468768	1908568	2219310

Source: National Accounts Statistics, Ministry of Statistics & Programme Implementation.

Table 48: Value of Output from Chemicals and Chemical products (Industry Division 20: NIC 2008) and Pharmaceutical; medicinal chemicals and botanical products (Industry Division 21: NIC 2008) vis-a-vis Manufacturing sector

At constant prices (2011-12)

(Rs. In crore)

Description	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Manufacturing (Corporate)	7675612	8200088	9401296	9407744	9065404	10869880	11812350
Manufacturing (Household)	712666	791191	865740	836055	845787	935942	953461
Manufacturing (Corporate +Household)	8388278	8991280	10267035	10243798	9911191	11805823	12765811
Chemical and chemical products (Corporate) (Industry Division 20)	596509	648293	798437	824257	806439	962609	1075143
Chemical and chemical products (Household) (Industry Division 20)	4628	6315	9108	7108	6778	8494	9079
Total Chemical and chemical products excluding Pharmaceutical; medicinal chemicals and botanical products (Industry Division 20)	601137	654608	807545	831365	813216	971103	1084222
Pharmaceutical; medicinal chemicals and botanical products --Corporate (Industry Division 21)	265783	268775	323811	342981	384489	446275	452185
Pharmaceutical; medicinal chemicals and botanical products --Household (Industry Division 21)	2782	2411	2450	2846	3247	4163	4061
Total Pharmaceutical; medicinal chemicals and botanical products (Industry Division 21)	268565	271185	326261	345827	387736	450438	456246
Total Chemical and chemical products including Pharmaceutical; medicinal chemicals and botanical products (Industry Division 20 and 21)	869702	925793	1133806	1177192	1200953	1421541	1540469

Source: National Accounts Statistics, Ministry of Statistics & Programme Implementation.

Table 49:- All India Estimate of Selected Characteristics of Factory Sector for Chemical and Chemical products (Industry Division 20: NIC 2008) , Pharmaceutical; medicinal chemicals and botanical product (Industry Division 21: NIC 2008) and Manufacture of Magnetic and Optical Media (industry Division 268)

Description	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Industry Division 20: Chemical and chemical products						
No of factories (no.)	12568	12902	13459	13770	13522	13979
No of workers (no.)	614733	666623	693865	706478	767657	785558
Total Output (Rs. crore)	661499	821126	793096	781482	1097908	1315603
Total Inputs (Rs. crore)	517336	661207	627208	595683	875273	1099660
Gross Value Added (Rs. crore)	144163	159919	165888	185799	222636	215943
Industry Division 21: Pharmaceutical; medicinal chemicals and botanical products						
No of factories (no.)	5051	5161	5326	5319	5228	5502
No of workers (no.)	454024	483238	516095	533391	577128	599001
Total Output (Rs. crore)	285014	342227	348658	406291	486178	475705
Total Inputs (Rs. crore)	182832	224274	226275	262166	314070	314479.4
Gross Value Added (Rs. crore)	102182	117953	122382	144124	172108	161226
Industry Division 268: Manufacture of Magnetic and Optical Media						
No of factories (no.)	10	15	15	4	7	6
No of workers (no.)	529	1970	1053	740	962	556
Total Output (Rs. Lakh)	75141	375859	87974	29890	67757	65331
Total Inputs (Rs. Lakh)	61256	283135	79865	23594	44525	47886
Gross Value Added (Rs. Lakh)	13885	92724	8109	6296	23232	17445

Source : Annual Survey of Industries (ASI) Results, Ministry of Statistics & Programme Implementation

Table 50: State wise Estimate of Selected Characteristics of Factory Sector for Industry Division 20: NIC 2008: Chemicals and Chemical Products

State	No. of Factories				GVA (Rs. Lakh)				Total Output (Rs Lakh)			
	2019-20	2020-21	2021-22	2022-23	2019-20	2020-21	2021-22	2022-23	2019-20	2020-21	2021-22	2022-23
(1)	(2)	(3)	(4)	(5)	(7)	(8)	(9)	(10)	(12)	(13)	(14)	(15)
Andhra Pradesh	499	450	473	502	391354	680931	727361	1173248	2684412	2854817	3970052	5811973
Assam	173	180	137	182	337713	453712	491976	718647	857461	1138784	1158120	2189754
Bihar	52	51	51	50	27091	23409	21096	27796	128635	131254	158933	954176
Chhattisgarh	124	139	153	153	18916	32114	56648	68877	246128	187989	469208	402912
Goa	39	51	36	30	77919	98724	109356	128138	426077	490954	565023	875266
Gujarat	2861	3018	2993	3131	5583012	6430276	8020952	6605039	27084554	25990446	38331607	43888156
Haryana	431	495	405	400	397801	490844	502725	550164	1930161	2191507	2528703	3472214
Himachal Pradesh	220	215	221	207	685132	539098	470492	485712	1675243	1595976	1561608	1627160
Jammu & Kashmir	135	143	105	124	230321	528406	290756	329678	932792	1551604	972678	1133162
Jharkhand	94	84	95	87	46901	55507	67167	63839	217142	265238	402994	537860
Karnataka	657	640	641	677	629721	549464	674908	858240	3079683	2100452	3215584	3598728
Kerala	173	219	199	160	317489	227448	263483	295420	942693	892076	1111925	1454678
Madhya Pradesh	315	325	345	357	266235	208689	385407	402008	1909243	1614403	2538375	3188848
Maharashtra	1827	1892	1974	1952	2315109	2650282	3769611	3833510	11162926	12470588	17591190	20590463
Meghalaya	3	3	5	4	1124	2195	1903	342	2710	3979	4966	2141
Mizoram	4	0	0	0	15	0	0	0	30	0	0	0
Odisha	99	114	101	103	657505	312979	409146	455951	1531407	1249776	2312431	2691618
Punjab	204	191	227	201	142836	161014	258930	291142	877849	876109	1457698	1770022
Rajasthan	401	361	406	462	509303	708173	761264	800402	2875300	3354013	4211306	5859705
Sikkim	3	0	0	3	8510	0	0	17919	16984	0	0	44330
Tamil Nadu	2704	2706	2626	2718	685097	820713	1010948	1016193	4091296	3792586	6338824	6257336
Tripura	8	7	7	7	44	179	635	164	427	314	4790	2326
Uttar Pradesh	759	750	802	871	934417	1025826	1157842	911028	5448955	4704933	6931558	8969889
Uttarakhand	238	228	200	218	895746	786279	769675	843310	2319208	2145639	2316209	2612347
West Bengal	352	382	358	378	440481	639647	658515	571725	3568921	2770482	4034102	5519942
Dadra & N Haveli & Daman & Diu	315	342	342	324	536944	694297	891629	589604	3567053	3963429	5159314	4946721
Chandigarh	3	3	3	3	833	956	1107	1065	7735	9298	10401	10656
Delhi	69	86	57	76	29318	19403	19183	-68805	164725	130663	157075	51467
Puducherry	106	114	114	109	207665	226480	234201	226916	549701	557272	863531	725921
Telangana	585	576	439	485	214042	207106	227915	396882	1009569	1100171	1388628	2369779
All India	13453	13765	13515	13974	16588594	18574151	22254831	21594154	79309020	78134752	109766833	131559550

Source : Annual Survey of Industries (ASI) Results, Ministry of Statistics & Programme Implementation

Table 51: Production, Import, Export, Consumption of Major Chemicals and Petrochemicals and Export as Percentage (%) of Production and Import as Percentage (%) of Consumption

(In Thousand Tonnes)

Group	Description	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Major Chemicals	Production	10234	11069	11589	11943	11243	12743	13039	12979
Major Petrochemicals									
A. Major Petrochemicals		15510	15670	16269	19041	17938	19371	18135	19028
B. Intermediates		18743	19063	19057	22119	21903	22686	19646	20594
C. Other Petro-based Chemicals		2174	2080	2192	2364	2318	2531	2511	2538
Total Major Chemicals and Petrochemicals		46661	47882	49108	55467	53402	57332	53331	55140
Major Chemicals	Exports	1484	1496	1579	1698	1905	2339	2313	2642
Major Petrochemicals									
A. Major Petrochemicals		2956	3293	4095	3719	2681	2505	1600	1642
B. Intermediates		2190	3915	5377	4842	5421	4818	2878	2000
C. Other Petro-based Chemicals		144	193	147	238	171	212	189	209
Total Major Chemicals and Petrochemicals		6773	8897	11198	10497	10179	9874	6981	6493
Major Chemicals	Imports	5400	5937	6379	6557	5983	6385	6878	7334
Major Petrochemicals									
A. Major Petrochemicals		5938	6408	6284	5356	4356	4597	6768	7317
B. Intermediates		3540	3180	2845	3323	2786	3843	4696	4507
C. Other Petro-based Chemicals		2651	3255	3227	3543	3069	3291	3426	3327
Total Major Chemicals and Petrochemicals		17529	18780	18735	18780	16194	18117	21768	22484
Major Chemicals	Consumption\$	14150	15510	16389	16802	15321	16789	17603	17670
Major Petrochemicals									
A. Major Petrochemicals		18492	18785	18458	20678	19613	21464	23303	24703
B. Intermediates		20094	18328	16525	20600	19268	21711	21464	23101
C. Other Petro-based Chemicals		4680	5142	5272	5670	5216	5610	5747	5656
Total Major Chemicals and Petrochemicals		57416	57765	56645	63751	59418	65575	68118	71130
Major Chemicals	Exports as % of Production	14.5	13.5	13.6	14.2	16.9	18.4	17.7	20.4
Major Petrochemicals									
A. Major Petrochemicals		19.1	21.0	25.2	19.5	14.9	12.9	8.8	8.6
B. Intermediates		11.7	20.5	28.2	21.9	24.7	21.2	14.6	9.7
C. Other Petro-based Chemicals		6.6	9.3	6.7	10.0	7.4	8.4	7.5	8.2
Total Major Chemicals and Petrochemicals		14.5	18.6	22.8	18.9	19.1	17.2	13.1	11.8
Major Chemicals	Imports as % of Consumption	38.2	38.3	38.9	39.0	39.1	38.0	39.1	41.5
Major Petrochemicals									
A. Major Petrochemicals		32.1	34.1	34.0	25.9	22.2	21.4	29.0	29.6
B. Intermediates		17.6	17.4	17.2	16.1	14.5	17.7	21.9	19.5
C. Other Petro-based Chemicals		56.6	63.3	61.2	62.5	58.8	58.7	59.6	58.8
Total Major Chemicals and Petrochemicals		30.5	32.5	33.1	29.5	27.3	27.6	32.0	31.6

\$ Derived consumption as Production+ Imports-Exports

Table 52: Exports of all Chemicals as Percentage (%) of Value of output and Imports of all Chemicals as Percentage (%) of Consumption (As per HS Code)

(Rs. In Crore)

Item	Code	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(7)	(8)
Exports of Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes	HS code 28	11175	14056	12512	12301	19800	26642	26552
Exports of Organic chemicals	HS code 29	95381	127855	124195	133637	164815	172357	168922
Exports of Pharmaceutical products	HS code 30	85447	103240	115473	143738	144581	159644	183052
Exports of Fertilizers	HS code 31	685	1038	837	779	630	1057	1077
Exports of Tanning or dyeing extracts; dyes, pigments, paints, varnishes, putty and mastics	HS code 32	18951	23124	24409	22660	29513	26528	32997
Exports of Miscellaneous chemical products	HS code 38	25080	32397	35663	37886	52416	63282	54454
Exports of Plastics and articles thereof	HS code 39	40928	56079	48970	51004	67440	61518	61117
Exports of Synthetic Rubber & Factice derived form Oils,in Primary Forms or in Plates, Sheets or Strip	HS code 4002	571	739	759	821	1141	964	1097
Exports of Man-made filaments	HS code 54	13984	16018	16962	11470	18070	15731	14576
Exports of Man-made staple fibers	HS code 55	13212	13308	11824	9559	15402	14283	13569
Exports of all Chemicals (including Pharmaceutical products and Fertilizers)	HS codes 28,29,30,31,32,38,39,4002,54 and 55	305413	387853	391604	423855	513807	542007	557414
Imports of Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes	HS code 28	38927	53237	45045	50955	76356	102895	75653
Imports of Organic chemicals	HS code 29	123761	156552	140205	145830	212615	232169	221365
Imports of Pharmaceutical products	HS code 30	12241	14581	16530	18934	25603	21023	21403
Imports of Fertilizers	HS code 31	30108	46457	47397	51034	95329	123407	73885
Imports of Tanning or dyeing extracts; dyes, pigments, paints, varnishes, putty and mastics	HS code 32	12995	15460	14518	14036	19431	20490	30116
Imports of Miscellaneous chemical products	HS code 38	35521	41748	39069	45324	58634	65756	61486
Imports of Plastics and articles thereof	HS code 39	89768	106591	100607	98392	149067	185547	180725
Imports of Synthetic Rubber & Factice derived form Oils,in Primary Forms or in Plates, Sheets	HS code 4002	6687	7896	6079	6269	9154	11121	9861
Imports of Man-made filaments	HS code 54	5538	6843	7351	6727	11144	14287	13711
Imports of Man-made staple fibers	HS code 55	4658	6508	6785	6180	7714	9822	7460
Imports of all Chemicals (including Pharmaceutical products and Fertilizers)	HS codes 28,29,30,31,32,38,39,4002,54 and 55	360205	455872	423587	443683	665047	786518	695665
Value of Output of Chemicals and Chemical products (at current prices)	Industry Division 20 and 21: NIC 2008	1065111	1364718	1417091	1468768	1908568	2219310	
Consumption of Chemicals and Chemical products	Value of Output + Imports - Exports	1119903	1432737	1449075	1488597	2059807	2463822	
Exports of all Chemicals as % of Value of Output		28.7	28.4	27.6	28.9	26.9	24.4	
Imports of all Chemicals as % of Derived Consumption		32.2	31.8	29.2	29.8	32.3	31.9	

Chapter 28: Inorganic Chemicals; Organic or Inorganic Compounds of Precious Metals, of Rare-Earth Metals, of Radioactive Elements or of Isotopes; **Chapter 29:** Organic Chemicals; **Chapter 30:** Pharmaceutical products; **Chapter 31:** Fertilizers ; **Chapter 32:** Tanning or Dyeing Extracts; Tannins and their Derivatives; Dyes, Pigments and Other Colouring Matter; Paints and Varnishes; Putty and other Mastics; Inks; **Chapter 38:** Miscellaneous Chemical Products; **Chapter 39:** Plastics and articles thereof; **4002:** Synthetic rubber and factice derived from oils, in primary forms or in plates, sheets or strip; mixtures of any pro **Chapter 54:** Man-made Filaments and **Chapter 55:** Man-made staple fibres

Note: 1. Data source in recspect of Imports, Exports (Chapter-wise) is DGCIIS Portal.

2: Data Source in respect of value of output is National Account Statistics, Ministry of Statistics & Programme Implementation

Team

Ms. Nivedita Shukla Verma – Secretary (C&PC)

Sh. Ganga Kumar – Dy. DG

Sh. Gyanendra Pratap Singh – Director

Sh. Satyapal- Assistant Director

Sh. Devendra Kumar Singh – Senior Statistical Officer

Sh. Rakesh Kumar – Junior Statistical Officer

Sh. Ankur Debnath – Junior Statistical Officer

Sh. Pavan K. Jadhav- Consultant



Statistics and Monitoring Division
Department of Chemicals and Petrochemicals
Ministry of Chemicals and Fertilizers
Government of India
New Delhi
Website: www.chemicals.gov.in