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Annual Report

2023-24

Government of India
Ministry of Chemicals & Fertilizers
Department of Chemicals & Petrochemicals

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Department of Chemicals & Petrochemicals

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ANNEXURES

Chapter-1

INTRODUCTION

1.1 Department of Chemicals and Petrochemicals (DCPC) aims:

i. To formulate and implement policy and programmes for achieving growth and development of the chemical and petrochemical sectors in the country; and

ii. To foster the spirit of public-private partnership for overall development of above-mentioned sectors of the industry.

1.2 The Department has the mandate to deal with the following broad subject matters:

i. Insecticides (excluding the administration of The Insecticides Act, 1968 (46 of 1968);

ii. Dye-stuffs and Dye-Intermediates;

iii. All organic and inorganic chemicals, not specifically allotted to any other Ministry or Department;

iv. Planning, development and control of, and assistance to, all industries dealt with by the Department;

v. Bhopal Gas Leak Disaster-Special Laws relating thereto;

vi. Petrochemicals;

vii. Industries relating to production of non-cellulosic synthetic fibres (Nylon Polyesters, Acrylic etc.);

viii. Synthetic Rubber; and

ix. Plastics including fabrication of plastic and moulded goods.

1.3 The Department has five major divisions viz. Chemicals, Petrochemicals, Administration, Statistics & Monitoring (S&M) and Economic Division. The Integrated Finance Division is common to the three Departments in the Ministry of Chemicals and Fertilizers.

1.4 There are three Central Public Sector Undertakings (CPSUs) in the chemical sector namely Hindustan Organic Chemicals Ltd. (HOCL), HIL (India) Limited and Hindustan Fluorocarbons Limited (HFL), which is a subsidiary of HOCL (Note: HFL is not currently operational). Two autonomous institutes namely Central Institute of Petrochemicals Engineering & Technology (CIPET) and Institute of Pesticides Formulation Technology (IPFT) function under this Department.

1.5 Shri Jagat Prakash Nadda is the Minister for Chemicals and Fertilizers. Smt. Anupriya Patel is the Minister of State for Chemicals and Fertilizers and Ms. Nivedita Shukla Verma is Secretary of the Department.

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Chapter - 2

AN OVERVIEW OF CHEMICAL AND PETROCHEMICAL INDUSTRY

2.1 Vision of Department of Chemicals and Petrochemicals

To seize the opportunity to establish India as a leading chemicals & petrochemicals manufacturing hub,

I. With a thrust on reduction in import dependency,
II. By attracting investments for manufacturing quality products,
III. Using cutting-edge technologies,
IV. In specified clusters,
V. With focus on sustainability and contribute to manufacturing sector.

Chemical and Petrochemical Industry

2.2 The chemical and petrochemical industry is a knowledge intensive as well as capital-intensive industry. It is an integral constituent of the growing Indian Industry. It includes basic chemicals and its products, petrochemicals, fertilizers, paints, varnishes, gases, soaps, perfumes & toiletry and pharmaceuticals. The diversification within the chemical industry is large and covers more than eighty thousand commercial products. This industry occupies a pivotal position in meeting basic needs and improving quality of life. The industry is the main stay of industrial and agricultural development of the country and provides building blocks for several downstream industries, such as textiles, papers, paints, varnishes, soaps, detergents, pharmaceuticals, etc.

2.3 As per National Industrial Classification (NIC) 2008, Chemical & Chemical products are covered under the Division 20. According to National Accounts Statistics (NAS) 2023, brought out by the National Accounts Division (NAD) of National Statistical Office (NSO), Ministry of Statistics and Programme Implementation (MoSPI), Chemicals and Chemical products (industry division 20 of NIC 2008) accounted for 1.5% of the GVA for all economic activities in 2021-22 at constant (2011-12) prices. The share of this sector in the GVA of manufacturing sector was 8.2% during 2021-22 (at 2011-12 prices) as compared to 8.1% in 2020-21. The size of the Indian Chemical industry (industry division 20 of NIC 2008) in terms of value of output in the year 2021-22 was Rs.12,22,618 crores at current prices & Rs.9,15,819 crores at constant (2011-12) prices.

2.4 The production of selected Major Chemicals and Petrochemicals during the years 2018-19 to 2023-24 (up to December 2023) is given in Table-I. The production of total major chemicals and petrochemicals in 2023-24 (up to December 2023) is 40,508 thousand MT. CAGR in the production of total chemicals and petrochemicals during the period 2018-19 to 2022-23 was 2.1%.

Table I: Production of selected Major Chemicals and Petrochemicals

(Figures in 000' MT)

Groups	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	CAGR (%)	2023-2024 (up to Dec. 2023)*
Basic Major Chemicals							
Alkali chemicals	8043	8457	7776	9041	9493	4.2	6839
Inorganic chemicals	1064	1063	978	1052	1058	-0.1	808
Organic chemicals	1884	1847	1906	1953	1912	0.4	1425
Pesticides and insecticides	217	192	255	299	258	4.5	213
Dyes and pigments	382	384	327	398	318	-4.4	249
Total major chemicals	**11589**	**11943**	**11243**	**12743**	**13039**	**3.0**	**9534**
Basic Major Petrochemicals							
Synthetic fibre	3601	3893	3185	4040	3973	2.5	2899
Fibre intermediate	4657	5359	5059	5482	4988	1.7	3671
Polymers	10040	12404	12144	12471	11487	3.4	9172
Synthetic rubber	351	358	353	383	345	-0.4	294
Synthetic detergent intermediates	687	715	736	780	703	0.6	595
Performance plastics	1589	1672	1520	1698	1628	0.6	1055
Olefins	8857	11835	12039	12527	11296	6.3	9970
Aromatics	5543	4925	4805	4677	3362	-11.8	2424
Other petrochemicals	2192	2364	2318	2531	2511	3.4	1868
Total Major Petrochemicals	**37519**	**43524**	**42159**	**44589**	**40292**	**1.8**	**31046**
Total Major Chemicals and Petrochemicals	**49108**	**55467**	**53402**	**57332**	**53331**	**2.1**	**40580**

*(Note: The total basic Chemicals and Petrochemicals production is aggregated based on monthly production returns received from manufacturers of chemicals under large and medium scale units only. Product- wise and Group wise details of installed capacity and production for major Chemicals and major Petrochemicals are given in **Annexures - I & II** respectively.*Data is provisional.)*

Chemical Sector- Production Trends

2.5 The production of major chemicals in 2023-24 (up to December 2023) is 9,534 thousand MT. The CAGR in production of total major chemicals during the period 2018-19 to 2022-23 was 3.0%. The trend in the production of selected major chemicals is depicted in Chart I.

Chart I: Trend in Production of Major Chemicals

Petrochemical Sector- Production Trends

2.6 Petrochemicals, which comprise of plastic and a host of other chemicals, are downstream hydrocarbons derived from crude oil and natural gas. 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 and host of other articles of daily and specialized usage amidst other emerging areas.

2.7 The production of major petrochemicals in 2023-24 (up to December 2023) is 31,046 thousand MT. The CAGR in production of major petrochemicals during the period 2018-19 to 2022-23 was 1.8%. The trend in the production of major petrochemicals has been depicted in Chart II.

Chart II: Trend in the production of Major Petrochemicals

International trade:

2.8 Trends in exports and imports of chemicals and chemical products (excluding pharmaceutical products and Fertilizers) during 2018-19 to 2023-24 (up to December, 2023) are given in Table II & III and Charts III & IV.

Table II: Exports of Chemicals and Chemical Products (excluding Pharmaceutical Products and Fertilizers)

(Value in Rs. Crore)

HS Code	Commodity	2018-19	2019-20	2020-21	2021-22	2022-23	CAGR (%)	2023-24 (up to Dec. 2023)
Total National Exports		**2307726**	**2219854**	**2159043**	**3147021**	**3621550**	**11.9**	**2619525**
28	Inorganic Chemicals	14056	12512	12301	19800	26642	17.3	19509
29	Organic Chemicals	127855	124195	133637	164815	172357	7.8	116985
32	Tanning or Dyeing	23124	24409	22660	29513	26528	3.5	18651
38	Miscellaneous Chemical Products	32397	35663	37886	52416	63282	18.2	40087
39	Plastic and Articles Thereof	56079	48970	51004	67440	61518	2.3	44688

HS Code	Commodity	2018-19	2019-20	2020-21	2021-22	2022-23	CAGR (%)	2023-24 (up to Dec. 2023)
4002	Synthetic Rubber and Factice	739	759	821	1141	964	6.9	786
54	Man-Made Filaments	16018	16962	11470	18070	15731	-0.5	10501
55	Man-Made Staple Fibers	13308	11824	9559	15402	14283	1.8	10089
A:Total Chemicals and Chemical Products		**283575**	**275294**	**279337**	**368597**	**381306**	**7.7**	**261298**
% Share in Total Export		**12.3**	**12.4**	**12.9**	**11.7**	**10.5**		**10.0**

(Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), Kolkata)

Chart III: Trends in imports of Total Chemicals and Chemical Products

(Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), Kolkata)

Table II: Imports of Chemicals and Chemical Products (excluding Pharmaceutical Products and Fertilizers)

(Values in Rs. Crore)

HS Code	Commodity	2018-19	2019-20	2020-21	2021-22	2022-23	CAGR (%)	2023-24 (up to Dec. 2023)
	Total National Imports	3594675	3360954	2915958	4572775	5749801	12.5	4192301
28	Inorganic Chemicals	53237	45045	50955	76356	102895	17.9	59241
29	Organic Chemicals	156552	140205	145830	212615	232169	10.4	172234
32	Tanning or Dyeing	15460	14518	14036	19431	20490	7.3	24914
38	Miscellaneous Chemical Products	41748	39069	45324	58634	65756	12.0	47493
39	Plastic and Articles Thereof	106591	100607	98392	149067	185547	14.9	139587
4002	Synthetic Rubber and Factice	7896	6079	6269	9154	11121	8.9	7480
54	Man-Made Filaments	6843	7351	6727	11144	14287	20.2	10927
55	Man-Made Staple Fibres.	6508	6785	6180	7714	9822	10.8	5998
A:Total Chemicals and Chemical Products		**394834**	**359660**	**373714**	**544115**	**642088**	**12.9**	**467873**
% share in total Import		**11.0**	**10.7**	**12.8**	**11.9**	**11.2**		**11.2**

(Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), Kolkata)

Chart IV: Trends in Import of Total Chemicals and Chemical Products

(Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), Kolkata)

2.9 As per export and import figures, exports of chemicals and chemical products (excluding pharmaceutical products and fertilizers) contributed 10.5% of total export in the year 2022-23 compared to 11.7% in the year 2021-22. It contributed 10.0% of total export in the year 2023-24 (upto December 2023). Imports contributed 11.2% of total imports in 2022-23 as against 11.9% in the year 2021-22. It contributed 11.2% of total imports in 2023-24 (upto December 2023). CAGR in export of total chemicals and chemical products (excluding pharmaceutical & fertilizer products) during the period 2018-19 to 2022-23 was 7.7% while CAGR of total national export was 11.9%. CAGR in import of total chemicals and chemicals products (excluding pharmaceutical & fertilizer products) during the period 2018-19 to 2022-23 was 12.9% while CAGR of total national import was 12.5%.

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Chapter -3

SCHEMES OF THE DEPARTMENT

Table IX: Scheme wise Outlay

(Rs. In crore)

Sl. No.	Name of the Scheme	BE 2023-24	RE 2023-24	BE 2024-25
1.	**Central Sector Schemes**			
1.1	New Schemes of Petrochemicals	22.00	18.00	25.00
2.	**Other Central Expenditure (Sectt/BGLD/ABs/PSUs)**			
2.1	Secretariat-Economic-Services	22.55	28.18	31.68
2.2	Central Institute of Petrochemicals Engineering & Technology (CIPET)	92.88	7.28	36.37
2.3	Institute of Pesticides Formulation Technology (IPFT)	12.62	14.12	20.65
2.4	Hindustan Organic Chemicals Ltd.(HOCL)	0.00	0.00	0.00
2.5	HIL (India) Ltd.*	0.00	486.74	120.06
2.6	Hindustan Fluorocarbons Ltd (HFL)	0.00	0.00	0.00
2.7	Bhopal Gas Leak Disaster (BGLD)	23.40	18.31	25.35
	Total	**173.45**	**572.63**	**259.11**

*A Loan amount of Rs.104.25 crore has been waived off of HIL(INDIA) Ltd. which includes Rs.40.84 crore as Principal and Rs.63.41 crore as interest thereon. Further, MoF has allocated a fresh loan of Rs.486.74 crore to HIL(INDIA) Ltd. In RE 2023-24.

Table X: Expenditure 2022-23 & 2023-24

(₹ in crore)

Sl. No.	Schemes	BE 2022-23	RE 2022-23	Exp 2022-23	% of Exp w.r.t. RE (2022-23)	BE 2023-24	RE 2023-24	Exp as on 31.03.2024	% of Exp w.r.t. RE (2023-24)
I	**Central Sector Schemes**								
1.	New Schemes of Petrochemicals	48.50	29.00	24.22	83.52	22.00	18.00	18.00	100.00
2.	Chemical Promotion & Development Schemes (CPDS)	3.00	3.00	2.99	99.67	Merged with NSP from 01.04.2023			
	Total of I	**51.50**	**32.00**	**27.21**	**85.03**	**22.00**	**18.00**	**18.00**	**100.00**
II	**Other Central Expenditure (Sectt./BGLD/ ABs/PSUs)**								
1.	Secretariat (Revenue+ Capital)	21.35	21.00	20.84	99.24	22.55	28.18	26.96	95.67
2.	Bhopal Gas Lead Disaster (BGLD) (Revenue+ Capital)	23.08	22.83	21.07	92.29	23.40	18.31	16.41	89.62

3.	Central Institute of Plastic Engineering & Technology (CIPET)	100.24	63.81	63.81	100	92.88	7.28	0.00	0.00
4.	Institute of Pesticides Formulation Technology (IPFT)	11.50	11.05	11.05	100	12.62	14.12	14.12	100.00
	Total of II	156.17	118.69	116.77	98.38	151.45	67.89	57.49	84.68
	TOTAL (I + II)	**207.67**	**150.69**	**143.98**	**95.55**	**173.45**	**85.89**	**75.49**	**87.89**
III	**Loan to PSUs**								
1.	Hindustan Fluorocarbon Ltd.	1.33	0	0	0	0	0	0	0
2.	Hindustan Insecticides Ltd. (HIL)	0	0	0	0	0	486.74	399.18	82.01
	Grand Total (I+II+III)	**209.00**	**150.69**	**143.98**	**95.55**	**173.45**	**572.63**	**474.67**	**82.89**

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Chapter -4

PETROLEUM, CHEMICAL AND PETROCHEMICAL INVESTMENT REGIONS (PCPIRs)

Background

4.1 The concept of Petroleum, Chemical and Petrochemical Investment Regions (PCPIRs) is to promote Petroleum, Chemical and Petrochemical sectors in an integrated and environmental friendly manner on a large scale. Government of India formulated the PCPIR policy in April 2007 to give a boost to this sector. PCPIRs were envisioned to reap the benefits of co-siting, networking and greater efficiencies through use of common infrastructure and support services.

4.2 Each PCPIR is a specifically delineated investment region having an area of about 250 sq. km (with around 40% of the area earmarked for processing activities). It is not mandatory for the State Government concerned to acquire the entire area comprising the PCPIR, but they have to notify the area under the relevant area planning and zoning law. A PCPIR is a combination of production projects, public utilities, logistics, environmental protection facilities, residential areas and administrative services.

4.3 Once the proposal is approved, the State Government concerned or its agency carries out Environmental Impact Assessment based on the Terms of Reference, as approved by Ministry of Environment, Forest and Climate Change (MoEF&CC). Environmental Clearance (EC) is granted after appraisal by an Expert Appraisal Committee of the MoEF&CC.

4.4 The policy provides that each PCPIR would have a refinery / petrochemical feedstock company as an Anchor Tenant. Government of India will ensure availability of external physical infrastructure linkages to the PCPIR including connectivity through railways, roads, ports, airports and telecom. This infrastructure is created or upgraded, through Public Private Partnership projects to the extent possible. The Central Government also provides necessary funding to make such projects viable, called Viability Gap Funding (VGF), as well as budget support for creation of these linkages through respective Ministries and Ministry of Finance.

4.5 The State Government concerned plays the lead role in setting up of the PCPIR. A nodal Department or agency is notified for coordinating the linkages. A management body constituted by the State Government for each PCPIR, under the relevant legislation, is responsible for the development and management of the PCPIR. A developer or a group of co-developers is selected through a transparent mechanism to manage the internal infrastructure of the PCPIR.

PCPIRs under implementation:

Under this policy, 3 PCPIRs are being implemented as follows:

- **Gujarat –** at Dahej in Bharuch district
- **Andhra Pradesh –** this PCPIR region is spread from Vishakhapatnam to Kakinada and East Godavari Districts.
- **Odisha –** at Paradeep in Kendrapara and Jagatsingpur districts

Comparative Status of 3 PCPIRs:-

Location/ Region	Dahej, Bharuch	Vishakhapatnam–Kakinada	Paradeep
Date of Approval	Feb, 2009	Feb, 2009	Dec, 2010
Total Area (Sq. kms.)	453.00	640.00	284.15
Processing Area (Sq.kms.)	230.00	270.00	123.00
Investments made (Rs. Crore)	1,28,509	41,000	73,518
Employment generated (No.)	2,45,140	85,000	40,000
Major Production Unit	Reliance Petrochemical Complex, Petronet LNG Limited, Hindalco Industries Ltd , ABG Shipyard, BASF Styrenics Pvt. Limited, Gujarat Alkalis and Chemicals Ltd	Vizag Steel , NTPC, Sanvira Industries, Asian Paints Hetero Pharmaceuticals	Indian Oil Corporation Ltd, Paradeep Phosphate, IFFCO Fertilizers

4.6 Gujarat PCPIR

i. The Cabinet Committee on Economic Affairs (CCEA) approved setting up PCPIR in Dahej, Gujarat in February, 2009. Memorandum of Agreement (MoA) was signed between Department of Chemicals and Petrochemicals, Government of India (GoI) and Government of Gujarat in January 2010 to implement the PCPIR.

ii. Gujarat PCPIR is under implementation at Dahej in Bharuch district, over an area of 453 sq. km. The PCPIR has been notified under the Gujarat Special Investment Region (GSIR) Act, 2009. It is strategically positioned to the east of Delhi-Mumbai Industrial Corridor and near the western coastline. In the existing estate, 11,158 hectares of land is under industrial use and 656 hectare is for housing/commercial purposes.

iii. The Anchor Tenant, viz. M/s ONGC Petro additions Ltd. (OPaL) has set up a dual feed cracker complex at Dahej SEZ with a production capacity of 1.1 million ton / annum (MMTPA) of ethylene and 0.6 MMTPA of propylene, along with the matching capacities downstream polymer processing unit (polyethylene and polypropylene). The Anchor Tenant has incurred an amount of Rs.30,826 crore so far for project execution and commissioning. The project has been commissioned in 1st week of March, 2017.

iv. MoEF&CC has granted Environment and CRZ clearance for an area of 44445.18 hectare after excluding forest land i.e. 853.41 hectare for development of Gujarat PCPIR on 14.09.2017.

4.7 Andhra Pradesh PCPIR:

i. Special Development Authority (SDA) is formed by Govt. of A.P. vide G.O. No.373 dt. 24.05.2008 to develop the AP PCPIR.

ii. AP PCPIR covers 6 existing SEZs. The committed investment in AP PCPIR is around Rs.51,481 crore. Investment of Rs.1,948.61 crore approx. has been made on infrastructure development.

iii. M/s HPCL is in the process of taking up the feasibility study for establishing a Petrochemical Complex without a refinery. M/s HPCL has informed that due to lack of feasibility, the green field project for establishing a refinery has not materialized and they are in the process of taking up the feasibility study for establishing a Petrochemical Complex without a refinery.

iv. Road, rail link, water supply, effluent treatment and marine outfall projects are under different stages from study to implementation.

4.8 Odisha PCPIR:

i. Paradeep PCPIR is being developed on a 284 sq. km in Kendrapara and Jagatsingpur districts of Odisha. The master plan of Paradeep PCPIR has already been completed by the consultant. The same will be submitted to the Government after enhancement of jurisdiction of Paradeep Development Authority to Greater Paradeep Development Authority for Notification of the Master Plan. In the meantime, Odisha Industrial Infrastructure Development Corporation (IDCO) the implementing Agency has requested Government of Odisha for enhancement of the jurisdiction of the Paradeep Development Authority.

ii. Detailed Environmental Impact Assessment (EIA) is being undertaken by Environmental Protection Training and Research Institute (EPTRI), Hyderabad. After public hearing, the EIA report was submitted to EAC of MoEF&CC, Government of India for obtaining EC. The EAC has raised certain observations. The Consultant is preparing the compliances to the above observations and it is expected that the same will be submitted to the EAC soon.

iii. Indian Oil Corporation's 15 MMTPA Refinery at Paradeep was commissioned in February 2016. This Refinery is also the anchor tenant for the development of PCPIR.

iv. Existing industrial units in Odisha PCPIR include Churiwal Techno pack Pvt Ltd., Chirpal Polyfilms Ltd, Ion exchange Ltd., Dhunseri Ventures Limited, IFFCO Ltd, Numaligarh Refinary Limited, Purv Packaging, Sai Bulk Bag Private Ltd, Silox India Pvt. Ltd, Renew Effuels Pvt Ltd, Nigaz Paradeep Pvt Ltd, Dry Chem India Pvt. Limited, Aegis Logistics Ltd, IVL Dhunseri Petrochem Industries Ltd, Ion Exchange (india) Ltd, Peral Precision Products Pvt. Ltd.

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Chapter - 5

NEW SCHEME OF PETROCHEMICALS

5.1 The Department of Chemicals and Petrochemicals implements the following schemes under the New Scheme of Petrochemicals:

i. Setting up of Plastic Parks
ii. Setting up of Centres of Excellence
iii. National Petrochemicals Awards, now revised as the Petrochemicals Research & Innovation Commendation Scheme.

5.2 Setting up of Plastic Parks

i. The scheme aims at setting up need-based Plastic Parks, with state-of-the-art infrastructure and enabling common facilities through a cluster-based approach, to consolidate and synergize the capacities of the domestic downstream plastic processing industry. The larger objective of the scheme is to contribute to the economy by increasing investment, production, export and employment generation in the sector.
ii. Under the scheme, the Government of India provides grant funding up to 50% of the project cost, subject to a ceiling of Rs.40 crore per project. The remaining project cost is funded by the State Government or their agencies, beneficiary industries etc.
iii. 10 Plastic Parks have been approved so far in the States of Madhya Pradesh (two), Odisha, Jharkhand, Tamil Nadu, Uttarakhand, Chhattisgarh, Assam, Uttar Pradesh and Karnataka. These are at different levels of implementation, as outlined below:

Location	Final Approval	Land area (Acre)	Total no. of plots	Total Project Cost (Rs cr)	Total approved grant-in-aid (Rs cr)
Tamot, Madhya Pradesh	09.10.2013	122	155	108.00	40.00
Jagatsinghpur, Odisha	09.10.2013	120	80	106.78	40.00
Thiruvallur, Tamil Nadu	05.09.2019	240	65	216.92	40.00
Tinsukia, Assam	21.02.2014	173	104	93.65	40.00
Deoghar, Jharkhand	20.12.2018	93	107	67.33	33.67
Bilaua, Madhya Pradesh	20.12.2018	93	107	68.72	34.36
Sitarganj, Uttarakhand	03.12.2020	40	45	67.73	33.9

Location	Final Approval	Land area (Acre)	Total no. of plots	Total Project Cost (Rs cr)	Total approved grant-in-aid (Rs cr)
Sarora, Chhattisgarh	13.04.2021	47	55	42.09	21.04
Ganjimutt, Karnataka	21.01.2022	112	53	62.78	31.38
Gorakhpur, Uttar Pradesh	13.07.2022	88	92	69.58	34.79

5.3 Setting up of Centres of Excellence (CoE)

i. The scheme aims at improving the existing petrochemicals technology and research in the country and promoting the development of new applications of polymers and plastics. In Phase-I of the Scheme implemented up to 2017, the Government of India provided financial support to the extent of maximum 50% of the total project cost subject to an upper limit of Rs.6 crore. As per the revised Guidelines, the ceiling for Government support is Rs.5 crore.

ii. So far, 13 Centres of Excellence (CoE) have been approved, as per the following details:

Sr. No.	Centre of Excellence	Name of Institute	Approval	Total Project Cost (Rs. cr)	Approved grant-in-aid (Rs cr)
1.	Sustainable Polymer Industry to Research & Innovation (SPIRIT)	National Chemical Laboratory, Pune	2011	12.00	6.00
2.	Green Transport Network (GREET)	Central Institute of Plastics Engineering & Technology, Chennai	2011	18.98	6.00
3.	Sustainable Green Materials	Central Institute of Plastics Engineering & Technology, Bhubaneswar	2013	15.045	6.00
4.	Advanced Polymeric Materials	Indian Institute of Technology, Delhi	2013	12.00	6.00
5.	Sustainable Polymers (Sus-Pol)	Indian Institute of Technology, Guwahati	2013	14.74	6.00

Sr. No.	Centre of Excellence	Name of Institute	Approval	Total Project Cost (Rs. cr)	Approved grant-in-aid (Rs cr)
6.	Process Development, Wastewater Management in Petrochemical Industries	Indian Institute of Technology, Roorkee	2019	13.13	4.40
7.	Bio-engineered Sustainable Polymeric Systems	Central Institute of Plastics Engineering & Technology, Bhubaneswar	2019	10.01	5.00
8.	Specialty Polymers for Customized Additive Manufacturing	National Chemical Laboratory, Pune	2019	5.60	2.80
9.	Polymer Coatings for Decorative, Protective and Strategic Applications	CSIR-IICT, Hyderabad	2020	9.72	4.86
10.	Polymers, their Composites and Polymeric Membranes for Sustainable Development of Petroleum Industries	CSIR–NEIST Jorhat- Assam	2020	24.75	4.99
11.	Manufacturing of Next Generation Bio-Medical Devices	Central Institute of Plastics Engineering & Technology, Bhubaneswar	2020	10.00	5.00
12.	Design and Development for Value added Toys of Rubber and Allied Finished Products	IRMRA, Thane	2022	9.86	4.93
13.	Sustainable & innovative design and manufacturing of polymer toys	IIT, Guwahati	2022	10.59	5.00

5.4 Petrochemicals Research & Innovation Commendation Scheme (erstwhile National Petrochemicals Awards)

i. The Department has been implementing an Awards scheme to provide incentive for meritorious innovations and inventions in various fields of the petrochemicals and downstream plastics processing industry. 11 editions of the awards have been successfully organised so far.

ii. In accordance with the advice of Ministry of Home Affairs, the scheme of "National Petrochemical Awards" has been revised to the "Petrochemicals Research and Innovation Commendation Scheme", which seeks to promote research and development in the country so as to ensure better energy consumption, more efficient plastic waste management, increase in product life cycle, development of innovative new products and quality standards etc. It is expected that the Scheme would enable the Indian petrochemical industry to compete globally using eco-friendly processes and technologies.

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Chapter – 6

INTERNATIONAL CONVENTIONS AND TREATIES

6.1 Chemical Weapons Convention (CWC)

i. Chemical Weapons Convention is a universal, non-discriminatory, multilateral, disarmament treaty which bans the development, production, acquisition, transfer, use and stockpile of all chemical weapons. The treaty puts all the States Parties on an equal footing. Countries having stockpiles of chemical weapons are required to declare and destroy them in a specified time frame and those who produce and use chemicals that can be conveniently converted into chemical weapons have to be open and transparent about the use they put these chemicals into. The Convention was opened for signature on 13th January 1993 in Paris.

ii. India is a signatory and party to the Chemical Weapons Convention (CWC), of the Organization for the Prohibition of Chemical Weapons (OPCW) with Head Quarters at The Hague, Netherlands.

iii. India signed the treaty at Paris on 14th day of January 1993. Pursuant to provisions of the Convention, India enacted the Chemical Weapons Convention Act, 2000. As on date, 193 countries are parties to the Convention.

iv. The Department of Chemicals & Petrochemicals is the administrative Department of CWC Act, 2000. Chemical Weapons Convention Act, 2000 is in force in the country w.e.f. 1st July 2005.

v. The National Authority for Chemical Weapons Convention (NACWC) has been set up as an office of the Cabinet Secretariat, Government of India in 1997 to fulfill, on behalf of the Government of India, the obligations under the Chemical Weapons Convention and to act as the national focal point for effective liaison with the Organization for the Prohibition of Chemical Weapons (OPCW) and other State Parties on matters relating to the Convention.

vi. Three Schedules of the chemicals which have been annexed to the Convention, which are required to be declared and are given as follows:

   a. Schedule-1 Chemicals (16 Chemicals) (i.e. Chemical Weapons);
   b. Schedule-2 Chemicals (14 Chemicals) (i.e. precursors to Chemical Weapons);
   c. Schedule-3 Chemicals (17 Chemicals) (i.e. dual use Chemicals).

6.2 Rotterdam Convention

i. Rotterdam Convention is a multilateral treaty to promote shared responsibilities in relation to importation of certain hazardous chemicals.

ii. The convention promotes open exchange of information and calls on exporters of hazardous chemicals to use proper labelling, include directions on safe handling and inform purchasers of any known restrictions or bans.

iii. Signatory nations can decide whether to allow or ban the importation of chemicals listed in the treaty.
iv. To achieve its objectives, the Convention has following two key provisions:-

6.2 (A) The Prior Informed Consent (PIC) Procedure

I. The PIC procedure is a mechanism for obtaining the decisions of importing Parties as to whether they wish to receive future shipments of those chemicals listed in Annex III of the Convention.
II. All Parties are required to take a decision as to whether or not they will allow future import of each of the chemicals in Annex III of the Convention. These decisions are known as import responses.
III. A listing of the import responses given for each chemical subject to the PIC procedure is circulated by the Secretariat to all Designated National Authority every six months via the PIC Circular and all import responses are available on the Convention's website.
IV. The different Annexures in the PIC Regulation of the Convention are given as below:
V. **Annex- I:** It contains all information requirements for notifications.
VI. **Annex- II:** It requires a risk evaluation based on a review of scientific data in the context of the conditions prevailing in the Party's country submitting the notification of a final regulatory action to ban or restrict a chemical. The data should be generated in accordance to scientifically recognized methods and data reviews carried out in agreement of sound scientific principles and methods.
VII. **Annex- III**: It include pesticides and industrial chemicals that have been banned or severely restricted for health or environmental reasons by two or more Parties and which the Conference of the Parties has decided to subject to the PIC procedure.
VIII. There are a total of 55 chemicals listed in Annex III, 36 pesticides (including 3 Severely Hazardous Pesticide Formulations (SHPF)), 18 industrial chemicals, and 1 chemical in both the pesticide and the industrial chemical categories.
IX. **Annex- IV**: This annexure of the Convention sets out information and criteria for listing those SHPFs in Annex III and asks for further information, for example risk and/or hazard evaluations, where available.

6.2 (B) Information Exchange

i. The Convention facilitates information exchange among Parties for a very broad range of potentially hazardous chemicals.
ii. The Convention requires each Party to notify the Secretariat when taking a domestic regulatory action to ban or severely restrict a chemical.
iii. When a chemical that is banned or severely restricted by a party is exported from its territory, that Party must notify each individual importing party before the first shipment and annually thereafter.

iv. Exports of banned or severely restricted chemicals, as well as chemicals subject to the PIC procedure, are to be appropriately labelled and accompanied by basic health and safety information in the form of a safety data sheet.

6.3 Parties and their Designated National Authorities (DNAs)

Parties are countries or regional economic integration organizations that have ratified, accepted, approved or acceded to the Convention. Each Party must designate one or more national authorities, which are the primary contact points for matters related to the operation of the Convention and are authorized to perform the administrative functions required by the Convention.

6.4 DNAs are also the key contact point for matters related to the Convention for other Parties and the Secretariat.

DNAs from INDIA

Industrial Chemicals	Shri Deepankar Aron Joint Secretary (Chemicals) Department of Chemicals and Petrochemicals Ministry of Chemicals and Fertilizers Room No. 340-C, 'A' Wing Shastri Bhawan 110001 New Delhi	jschem-cpc@gov.in wb.santhosh@gov.in Rohit.misra@nic.in

6.5 Role of DCPC

i. DCPC take action only on signed version of the notification not on preliminary version of the notifications without signature of DNA (Designated National Authority) enclosing questionnaire for explicit consent.

ii. The Notification wherein the proposed chemical comes under Annex-III of Rotterdam Convention and section 6.2 of the notification marks the chemical as ‘Pesticide’ and ‘Industrial Chemical’ both or only Industrial Chemical, DCPC seeks following documents to ensure that the chemicals which are being imported are utilized for the purpose as mentioned in sub section 3.3 of their notification.

a) Copy of purchase orders
b) End user certificate with the application of chemical consumption process. (End user certificate is an international document used in the sell or purchase of prohibited items)
c) Factory registration certificate (copy) it is issued by the Directorate of industrial safety & health, Labor department.
d) Affidavit that the imported chemicals will be used only as industrial chemical and not as pesticide and other application.

iii. For the notifications wherein mentioned chemicals are not listed in **Annex-III**, DCPC inform ECHA (European Chemical Agency) that Department acknowledges only those chemicals which are listed in **Annexure-III of PIC Procedure of Rotterdam convention.**

iv. Face to Face **Conference of the Parties** to the Rotterdam Convention is being conducted in every two years to review and evaluate the implementation of the Convention. It considers and adopts, as required, amendments to the Convention and its annexes, e.g. to list new chemicals brought forward by the Chemical Review Committee. DCPC attends these COP meetings being held from time to time.

6.6 Stockholm Convention

i. Stockholm Convention on Persistent Organic Pollutants is an international environmental treaty, signed on 22nd May 2001 in Stockholm and effective from 17th May 2004, that aims to eliminate or restrict the production and use of persistent organic pollutants (POPs).

ii. The Stockholm Convention aims to protect human health and the environment from the effects of persistent organic pollutants (POPs).

iii. The Government of India had ratified the Stockholm Convention on 13th January, 2006 as per Article 25(4).

iv. Parties must take measures to eliminate the production and use of the chemicals listed under Annex A. Specific exemptions are available in Annex A and apply only to Parties that have registered for them.

List of Annexure A (Elimination)

1.	Aldrin
2.	Chlordane
3.	Chlordecone
4.	Decabromodiphenyl ether (commercial mixture, c-decaBDE)
5.	Dechlorane Plus
6.	Dicofol
7.	Dieldrin
8.	Endrin
9.	Heptachlor
10.	Hexabromobiphenyl

11.	Hexabromocyclododecane (HBCDD)
12.	Hexabromodiphenyl ether and heptabromodiphenyl ether
13.	Hexachlorobenzene (HCB)
14.	Hexachlorobutadiene
15.	Alpha hexachlorocyclohexane
16.	Beta hexachlorocyclohexane
17.	Lindane
18.	Methoxychlor
19.	Mirex
20.	Pentachlorobenzene
21.	Pentachlorophenol and its salts and esters
22.	Polychlorinated biphenyls (PCB)
23.	Polychlorinated naphthalenes
24.	Perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds
25.	Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds
26.	Short-chain chlorinated paraffins (SCCPs)
27.	Technical endosulfan and its related isomers
28.	Tetrabromodiphenyl ether and pentabromodiphenyl ether
29.	Toxaphene
30.	UV-328

6.7 Annexure B (Restriction)

Parties must take measures to restrict the production and use of the chemicals listed under Annex B in light of any applicable/acceptable purposes and/or specific exemptions listed in the Annex.

i. DDT
ii. Perfluorooctane sulfonic acid (PFOS), its salts and perfluorooctane sulfonyl fluoride (PFOSF)

6.8 Annexure C (Unintentional production)

Parties must take measures to reduce the unintentional releases of chemicals listed under Annex C with the goal of continuing minimization and, where feasible, ultimate elimination.

I.	Hexachlorobenzene (HCB)
II.	Hexachlorobutadiene (HCBD)
III.	Pentachlorobenzene
IV.	Polychlorinated biphenyls (PCB)
V.	Polychlorinated dibenzo-p-dioxins (PCDD)
VI.	Polychlorinated dibenzofurans (PCDF)
VII.	Polychlorinated naphthalenes

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Chapter-7

BHOPAL GAS LEAK DISASTER

7.1 On the intervening night of 2nd and 3rd December, 1984 "Methyl Iso-cynate " (MIC), a lethal gas stored in two tanks of Union Carbide Pesticide Factory at Bhopal leaked in the atmosphere resulting in industrial mass disaster unparalleled in its magnitude and causing serious injuries to a large number of population of Bhopal city, also resulting in immediate death toll of thousands of human lives. Various relief and rehabilitation measures initiated immediately after the disaster.

Adjudication of Compensation Claims

7.2 Several suits were filed for compensation and damage in different courts in India, prosecution was launched. The Government of India enacted Bhopal Gas leak Disaster (Processing of Claims) Act, 1985. The Act came into force on 20th February, 1985. It empowered the Union of India to take over the conduct of all litigation in regard to claims arising out of gas disaster and to award compensation to the victims and affected persons. Under this Act, the Government has framed a Scheme known as the Bhopal Gas Leak Disaster (Registration and Processing of Claims) Scheme, 1985 for registration, processing determination of compensation to each claim and appeals, if any, arising therefrom. Under this Act, the Office of the Welfare Commissioner, Bhopal Gas Victims, was set up by the Government of India for speedy adjudication and award/disbursement of compensation to the survivors and families of the victims of the gas leak disaster.

7.3 Looking at the magnitude of the human suffering that occurred due to BGLD, Hon'ble Supreme Court of India passed a settlement order dated 14th and 15th February, 1989 directing the Union Carbide Corporation to pay a sum of US$ 470 million, which was deposited by the Company with the Registrar of the Supreme Court of India, in 1989.

Original Compensation

7.4 The actual disbursement of the compensation started from 1992 and the Office of the Welfare Commissioner awarded/disbursed Rs.1549.33 Crore as compensation in settled cases of 5,74,394 claimants belonging to the categories of death, permanent disability, temporary disability, injury of utmost severity cases, minor injury, loss of property/PSU and loss of livestock till 31st March 2024.

Pro-rata Compensation

7.5 The Supreme Court vide order dated 19th July, 2004, had directed the Welfare Commissioner to disburse the balance amount of approximately Rs.1,500 crore, which had accumulated with the Reserve Bank of India on account of accrual of interest and exchange rate variation, on

pro-rata basis (in the ratio of 1:1 of Original Compensation) to the claimants whose cases had been settled. The distribution of pro-rata compensation started from November, 2004. A sum of Rs.1517.97 crore as pro-rata compensation has been awarded in 5,63,144 cases till 31st March 2024. The work of disbursal of pro-rata compensation is continuing.

Disbursement of Ex-gratia

7.6 On the recommendations of the Group of Ministers (GoM) constituted on Bhopal Gas Leak Disaster, the Government took certain decisions to provide further relief and rehabilitation to the gas victims in the year 2010. One of the major decision taken by the Government was to pay Ex-gratia to the following categories of gas victims:

Categories of Ex-gratia payments to Gas victims

Category	Scale of Ex-gratia
Death	Rs.10 lakh (less amount already received)
Permanent disability	Rs.5 lakh (less amount already received)
Injury of utmost severity	Rs.5 lakh (less amount already received)
Cancer	Rs.2 lakh (less amount already received)
Total Renal Failure	Rs.2 lakh (less amount already received)
Temporary disability	Rs.1 lakh (less amount already received)

7.7 An amount of Rs.940.50 Crore has been approved by the Government for disbursement of Ex-gratia amongst the above categories of victims. The Office of the Welfare Commissioner has commenced disbursal of Ex-gratia to the Gas Victims on 19th December, 2010. A total no. of 64,675 cases have been decided and an amount of Rs.887.80 crore has been disbursed in awarded cases till 31st March, 2024.

Rehabilitation of Bhopal Gas Victims (Action Plan)

7.8 An amount of Rs.102 crore was sanctioned by the Government of India for relief, rehabilitation and financial assistance to victims of gas tragedy from 1985 to 1989.

7.9 In 1990, Government of India approved 5-years Action Plan of the State Government of Madhya Pradesh (GoMP) with a capital outlay of Rs.163.10 Crore for the Medical, Economic, Social and Environmental rehabilitation of the Bhopal Gas victims. The outlay was subsequently revised upwards to Rs.258 crores. It was decided that the Action Plan was to be shared by the Government of India and GoMP in the ratio of 75:25 and implemented by the GoMP. The Action Plan was implemented from 1990 to 1999 this involved creation of infrastructure for providing relief and rehabilitation to the gas victims against this approved plan, GoMP spent an amount of Rs.1229.37 crore. The major component of the Action Plan

was Medical Rehabilitation which included establishment of six full-fledged Gas Relief hospitals and also dispensaries for free treatment of gas victims.

7.10 Further, in April, 2006, an amount of Rs.14.18 crore was provided by Government of India under Jawaharlal Nehru National Urban Renewal Mission (JNNURM) for supply of piped drinking water to 14 localities around UCIL plant site where the ground water is not potable.

7.11 GoMP had submitted to Group of Ministers (GoM) in April 2008, a new Memorandum on New Plan of Action with an outlay of Rs.982.75 crore for various rehabilitation measures to be taken for Bhopal Gas Victims. On the recommendations of the GoM, the Government approved a sanction of Rs.272.75 crore shared between the Central Government and GoMP in the ratio of 75:25 for implementation of New Plan of Action, 2010. A sanction of Rs.272.75 crore was released by the Ministry of Finance, Department of Expenditure to the GoMP on 08/07/2010 'On Account' payment of Additional Central Assistance (ACA) for other projects (Grant Component) for State's Annual Plan 2010-2011.

7.12 GoMP is in the process of implementation of various rehabilitation schemes as approved in the New Plan of Action 2010.

Environmental Remediation of the erstwhile Union Carbide India Ltd. (UCIL) Plant site.

7.13 An industrial disaster occurred in the night of 2nd/3rd December 1984 when Methyl Iso-cyanate (MIC), a lethal gas stored in two tanks of Union Carbide India Limited (UCIL)'s pesticide unit at Bhopal, leaked into the atmosphere causing thousands of deaths and injuring a large number of people.

7.14 The erstwhile Group of Ministers (GoM) constituted to examine all the issues related to the Bhopal Gas Leak Disaster, in the meetings held during 18th to 21st June, 2010, made comprehensive recommendations on all aspects including remediation and disposal of 347 MT (approx.) hazardous waste lying at the premises of former Union Carbide India Ltd. (UCIL) factory at Bhopal.

7.15 As per Union Cabinet's decision taken in the year 2010, GoMP is responsible for undertaking disposal of hazardous wastes and remediation of the erstwhile UCIL plant at Bhopal. As per Cabinet's decision, an Oversight Committee was constituted in the Ministry of Environment, Forest and Climate Change to provide oversight and support to the GoMP in taking the necessary remedial actions. As per the direction given by the Hon'ble Supreme Court in the matter of SLP (Civil) No. 9874 of 2012 UoI vs. Alok Pratap Singh and Others, 10 MT of erstwhile UCIL waste was successfully incinerated at common Hazardous Waste Incinerator at Pithampur, Madhya Pradesh by Central Pollution Control Board (CPCB) during August 13th-18th, 2015.

7.16 The proposal for disposal of remaining 337 MT (approx) of hazardous waste lying at UCIL factory site has been considered by the Oversight Committee constituted under the Chairmanship of Hon'ble Minister (EF&CC). As directed by the Oversight Committee, Department of Expenditure, Government of India has been requested to release the funds for execution of the work of disposal of toxic waste.

Status of Curative Petition

7.17 On the direction of the Cabinet, a Curative Petition No.345-347 was filed in December 2010 by Union of India v/s Union Carbide Corporation (UCC), USA, Dow Chemicals, USA and Others claiming enhanced compensation from UCC and/or successor companies of UCC, by seeking a review of the Court's earlier judgment of 1989, settling the compensation amount at US $470 million. The compensation claimed in the Curative Petition is due to the difference between the number of cases assumed by the Hon'ble Supreme Court at the time of passing the orders for settlement in 1989 and the actual number of cases awarded by the Office of the Welfare Commissioner, Bhopal Gas victim, Bhopal. The petition also claims reimbursement of costs incurred by the Government of India for various rehabilitation measures for victims and the amount required for environmental remediation. The said petition has been dismissed by the Hon'ble Supreme Court.

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Chapter-8

IMPROVING THE QUALITY OF CHEMICALS & PETROCHEMICALS & TRADE INTELLIGENCE

Mandatory BIS Standards for Chemicals & Petrochemicals:

8.1 Chemicals & Petrochemicals imported or produced domestically may contain impurities that may be hazardous to human health, safety & environment. These Chemicals while being used may not be meeting technical characteristics prescribed in the Chemicals Standards which are presently voluntary in nature. It is, therefore, of paramount importance to improve quality of Chemicals/Petrochemicals produced in the country as well as to ensure the quality chemical are being imported. With this objective, the Department initiated an exercise to make the Standards of Chemicals/Petrochemicals as mandatory so as to ensure that both the importers and domestic manufacturers meet the Bureau of Indian Standards (BIS) quality parameters. Such Chemicals/Petrochemicals shall bear the Standard Mark under a license to be obtained from BIS. This mechanism helps in improving quality of these products as some countries may be exporting poor quality and spurious Chemicals/Petrochemicals into the country, which may not meet the quality parameters laid down by BIS Standards.

8.2 Keeping above in view, the Department is making Standards mandatory for Chemicals/Petrochemicals, under Section 16 of the Bureau of Indian Standard Act, 2016 in the public interest for:

(i) Protection of human, animal or plant health
(ii) Safety of the environment
(iii) Prevention of unfair trade practices
(iv) Protection of National Security

8.3 Henceforth, With these measures, manufacturers and importers have to comply with BIS (Conformity Assessment) Regulations, 2018. Anybody who contravenes these provisions is punished under the provisions of section 29 of the BIS Act, 2016. As per the provisions of mandatory Standards, the manufacturers of above Chemicals must conform to BIS Standards and bear the Standard Mark under license from BIS. This includes any imported material, for which the exporter based on foreign country has to apply for BIS license under Foreign Manufacturers Certification Scheme (FMCS).

8.4 Under this process, D/o Chemicals & Petrochemicals has notified 72 Quality Control Orders (QCOs) for Chemicals & Petrochemicals so far to make BIS Standards as mandatory under Bureau of Indian Standards Act, 2016. Out of 72 QCOs, 39 QCOs have been implemented and enforcement date of remaining 33 QCOs have been extended from time to time.

8.5 List of various Chemicals & Petrochemicals for which Quality Control Orders have been notified by the Department is as under:

S.No.	Indian Standard / HS Code	Name of Chemicals & Petrochemicals	Date of notifying the QCO	Date of enforcement of QCO
1.	IS 252:2013 (HS Code: 28151110, 28151190, 28151200)	Caustic Soda	03.04.2018	03.04.2018
2.	IS 695 : 1986 (HS Code 29152100)	Acetic Acid	05.08.2019	-
3.	IS 517 : 1986 (HS Code 29051100	Methanol	05.08.2019	-
4.	IS 2833:2019 (HS Code 29214110)	Aniline	05.08.2019	-
5.	IS 15573 : 2018 (HS Code 28273200)	Poly Aluminium Chloride	05.08.2019	02.02.2020
6.	IS 8058: 2018 (HS Code 29333100)	Pyridine	16.06.2020	-
7.	IS 16113: 2013, Reaffirmed 2018 (HS Code 29333913)	Gamma Picoline	16.06.2020	13.03.2024

S.No.	Indian Standard / HS Code	Name of Chemicals & Petrochemicals	Date of notifying the QCO	Date of enforcement of QCO
8.	IS 16112: 2013 (HS Code: 29333916)	Beta Picoline	16.06.2020	-
9.	IS 12084: 2018 (HS Code 29333917)	Morpholine	16.06.2020	-
10.	IS 297: 2001, Reaffirmed 2017 (HS Code 28301000)	Sodium Sulphide	16.06.2020	14.12.2020
11.	IS 7129: 1992, Reaffirmed 2015 (HS Code 28364000)	Potassium Carbonate	16.06.2020	13.03.2024
12.	IS 170: 2004, Reaffirmed 2015 (HS Code 29141100)	Acetone	16.06.2020	13.03.2024
13.	IS 4581: 1978 Reaffirmed 2015 (HS Code 28121300)	Phosphorus Trichloride	16.06.2020	14.12.2020
14.	IS 11744: 1986 Reaffirmed 2015 (HS Code 28121400)	Phosphorus Pentachloride	16.06.2020	14.12.2020

S.No.	Indian Standard / HS Code	Name of Chemicals & Petrochemicals	Date of notifying the QCO	Date of enforcement of QCO
15.	IS 11657: 1986 Reaffirmed 2015 (HS Code 28121200)	Phosphorous Oxychloride	16.06.2020	14.12.2020
16.	IS 2080: 1980, (Reaffirmed 2016) (HS Code 28470000)	Hydrogen Peroxide	16.06.2020	22.11.2022
17.	IS 3205: 1984, (Reaffirmed 2015) IS 12928: 1990, (Reaffirmed 2017) (HS Code 28366000)	Precipitated Barium Carbonate	16.06.2020	14.12.2020
18.	IS 4505: 2015 (HS Code 28311020)	Sodium Formaldehyde Sulphoxylate	16.06.2020	14.12.2020
19.	IS 6100: 1984, Reaffirmed 2015 (HS Code 28353100)	Sodium Tripolyphosphate	16.06.2020	-
20.	IS 7686 : 2020 (HS code 2922 2914)	3 (N, N- Di Ethyl) Aminophenol	25.05.2021	24.11.2021
21.	IS 4566 : 2020 (HS code 29031200)	Methylene Chloride (Dichloromethane)	25.05.2021	20.11.2023
22.	IS 2012 : 2006, Reaffirmed 2016 (HS Code 2804 7020)	Red Phosphorus	25.05.2021	24.11.2021

S.No.	Indian Standard / HS Code	Name of Chemicals & Petrochemicals	Date of notifying the QCO	Date of enforcement of QCO
23.	IS 798 : 2020 (HS Code 2809 2010)	Ortho Phosphoric Acid	15.06.2021	10.12.2022
24.	IS 17439 : 2020 (HS code 2809 2020)	Polyphosphoric Acid	24.12.2021	22.12.2022
25.	IS 17412 : 2020	Trimethyl Phosphite	05.04.2022	02.10.2022
26.	IS 17450 : 2020	1, 3 Phenylenediamine	27.04.2022	24.10.2022
27.	IS 10931:1984	Lauric Acid	27.04.2022	-
28.	IS 12029:1986	Acid Oil	27.04.2022	-
29.	IS 12067:1987	Palm Fatty Acids	27.04.2022	-
30.	IS 12068:1987	Rice Bran Fatty Acids	27.04.2022	-
31.	IS 12069:1987	Coconut Fatty Acids	27.04.2022	-
32.	IS 12124:1987	Rubberseed Fatty Acids	27.04.2022	24.10.2022
33.	IS 12361: 1988	Hydrogenated Rice Bran Fatty Acids	27.04.2022	-
34.	IS 5158: 1987 (HS code)	Phthalic Anhydride	24.12.2021	22.06.2023

S.No.	Indian Standard / HS Code	Name of Chemicals & Petrochemicals	Date of notifying the QCO	Date of enforcement of QCO
35.	IS 14887: 2014 (HS code 39232100/ 39232990)	High Density Polyethylene (HDPE)/ Polypropylene (PP) Woven Sacks for packaging of 50kg. Foodgrains	23.04.2020	23.10.2020
36.	IS 16208:2015 (HS code 39232100/ 39232990)	High Density Polyethylene (HDPE)/ Polypropylene (PP) Woven Sacks for packaging 10kg., 15kg., 20kg., 25kg., and 30kg. Foodgrains	23.04.2020	23.10.2020
37.	IS 14968:2015 (HS code 39232100/ 39232990)	High Density Polyethylene (HDPE)/ Polypropylene (PP) Woven Sacks for packaging 50kg./25kg Sugar	23.04.2020	23.10.2020
38.	IS 14252:2015 (HS code 39232100/ 39232990)	High Density Polyethylene (HDPE)/ Polypropylene (PP) Woven Sacks for filling Sand	23.04.2020	23.10.2020
39.	IS 537:2011 (HS code 29023000)	Toluene	24.12.2021	-

S.No.	Indian Standard / HS Code	Name of Chemicals & Petrochemicals	Date of notifying the QCO	Date of enforcement of QCO
40.	IS 5295:1985 (HS code 29053100)	Ethylene Glycol	24.12.2021	28.06.2023
41.	IS 336:1973 (HS code 39072010)	Ether	29.06.2020	25.12.2021
42.	IS 15030:2001 (HS code 29173600)	Terephthalic Acid	24.12.2021	22.06.2023
43.	IS 14709:1999 (HS Code 29161210)	n- Butyl Acrylate	24.12.2021	22.12.2023
44.	IS 4105:2020 (HS Code 29025000)	Styrene (Vinyl Benzene)	05.04.2022	-
45.	IS 12345:1988 (HS Code 29153200)	Vinyl Acetate Monomer	22.12.2021	-
46.	IS 12540:1988 (HS code 29261000)	Acrylonitrile	05.04.2022	-
47.	IS 14707:1999, IS 14708:1999, IS 14709:1999 (HS Code 29161400)	Methyl Acrylate, Ethyl Acrylate,	22.12.2021	-
48.	IS 5149:2020 (HS Code: 29171400)	Maleic Anhydride	05.04.2022	-

S.No.	Indian Standard / HS Code	Name of Chemicals & Petrochemicals	Date of notifying the QCO	Date of enforcement of QCO
49.	IS 12795:2020 (HS code 38170011)	Linear Alkyl Benzene	05.04.2022	03.04.2023
50.	IS 13601: 1993 (HS code 39013000)	Ethylene Vinyl Acetate (EVA) Copolymers	05.04.2022	-
51.	IS 11356 : 2020 (HS code 40021100 & 40021990)	Styrene Butadiene Rubber Latex	15.04.2021	15.10.2021
52.	IS 7328:2020 (HS code 39011010)	Linear Low Density Polyethylene (LLDPE) Polyethylene Material for Moulding and Extrusion (Quality Control)	05.04.2022	05.01.2024

S.No.	Indian Standard / HS Code	Name of Chemicals & Petrochemicals	Date of notifying the QCO	Date of enforcement of QCO
	IS 7328:2020 (HS code 39011090)	OTHR POLYETHYLENE HVNG A SPFC GRVTY < 0.94 (PC) 19 Polyethylene Material for Moulding and Extrusion (Quality Control)	05.04.2022	05.01.2024
	IS 7328:2020 (HS code 39012000)	POLYETHYLENE HVNG A SPCFC GRVTY 0.94 /MORE (PC) 20 (HDPE) Polyethylene Material for Moulding and Extrusion (Quality Control)	05.04.2022	05.01.2024
	IS 7328:2020 (HS code 39019090)	*OTHR POLYMERSOF ETHYLINE IN PRIMARY FORMS (PC) 22 Polyethylene Material for Moulding and Extrusion (Quality Control)	05.04.2022	05.01.2024

S.No.	Indian Standard / HS Code	Name of Chemicals & Petrochemicals	Date of notifying the QCO	Date of enforcement of QCO
53.	IS 17261:2019 (HS Code 54024700)	Polyester Continuous Filament Fully Flat Drawn Yarn (FDY)	05.04.2022	05.10.2023
54.	IS 17262:2019 (HS Code 54024600)	Polyester Partially Oriented Yarns (POY)	05.04.2022	05.10.2023
55.	IS 17263:2019 (HS Code 55032000)	Polyester Staple Fibres (PSF)	05.04.2022	03.04.2023
56.	IS 17264:2019 (HS Code 54022010& 54022090)	Polyester Industrial Yarn (IDY)	05.04.2022	03.07.2023
57.	IS 17265:2019 (HS Code 55092100 & 55902200)	100 percent Polyester Spun Grey and White Yarn (PSY)	05.04.2022	05.10.2023
58.	IS 16481:2016 HS Code 55032000	Synthetic micro-fibres for use in cement based matrix	05.04.2022	03.04.2023
59.	IS 17077:2019 or ISO 19062-1:2015	Acrylonitrile Butadinene Styrene (ABS)	13.09.2021	12.06.2023
60.	IS 869:2020	Ethylene Dichloride	13.09.2021	-
61.	IS 17370:2020	p-Xylene	13.09.2021	-

S.No.	Indian Standard / HS Code	Name of Chemicals & Petrochemicals	Date of notifying the QCO	Date of enforcement of QCO
62.	IS 14434:1998	Polycarbonate	13.09.2021	-
63.	IS 17397 (part 1) : 2020 or ISO 16365-1:2014	Polyurethanes	13.09.2021	-
64.	IS 17442:2020	Vinyl Chloride Monomer	13.09.2021	-
65.	IS 9755: 2021 HS 39239090	Textiles—High Density Polyethylene (HDPE) /Polypropylene (PP) Woven Sacks for Packaging Fertilizers	06.12.2023	-
66.	IS 11652:2017 HS 39269090	Textiles — High Density Polyethylene (HDPE)/ Polypropylene (PP) Woven Sacks for Packaging of 50 kg Cement	06.12.2023	-
67.	IS 16709:2017 HS 39269090	Textiles — Polypropylene (PP) Woven, Laminated, Block Bottom Valve Sacks for Packaging of 50 kg Cement	06.12.2023	-

S.No.	Indian Standard/ HS Code	Name of Chemicals & Petrochemicals	Date of notifying the QCO	Date of enforcement of QCO
68.	IS 17399:2020 HS 39269090	Textiles — Polypropylene (PP)/ High Density Polyethylene (HDPE) Laminated Woven Sacks for Mail Sorting, Storage, Transport and Distribution	06.12.2023	-
69.	IS 16703:2017 HS 39269090	Textiles — High Density Polyethylene (HDPE) Polypropylene (PP) Woven Sacks for Packaging of 25 kg Polymer Materials	06.12.2023	-
70.	IS 17658:2021	Poly Vinyl Chloride (PVC) Homopolymers	26.02.2024	-
71.	IS 10951: 2020	Polypropylene (PP) Materials for Moulding and Extrusion	26.02.2024	-
72.	IS 17042 (Part-I): 2020/ ISO 22241-1:2019)	Diesel Engines – NOx Reduction Agent AUS 32	26.02.2024	-

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Chapter-9

PUBLIC SECTOR UNDERTAKINGS

Hindustan Organic Chemical Limited (HOCL)

9.1 Hindustan Organic Chemicals Limited HOCL was incorporated on 12th December 1960 as a government company with the objective of setting up manufacturing capacities for chemicals / intermediates required for production of dyes, dyes–intermediates, rubber chemicals, pesticides, drugs and pharmaceuticals, laminates, etc. The company had two manufacturing units located at Rasayani (Maharashtra) and Kochi (Kerala). The Rasayani unit (Chemical Complex) started production from 1970-71 and the Kochi Unit (Phenol Complex) commenced production from 1987-88. The Kochi unit has plants to manufacture Phenol, Acetone and Hydrogen Peroxide. After the implementation of restructuring plan for HOCL that was approved by the Government of India on 17th May 2017, Rasayani unit has been closed down except the strategically important Concentrated Nitric Acid (CNA)/ Di-nitrogen Tetroxide (N_2O_4) plant which has been transferred to the Department of Space/ISRO. HOCL has a subsidiary company, namely Hindustan Fluorocarbons Limited (HFL), located at Rudraram, Telangana, details regarding which are given further in this chapter.

9.2 HOCL's authorised and paid up share capital is Rs.370 crore and Rs.337.27 crore [comprising of Rs.67.27 crore equity and Rs.270 crore preference shares] respectively. Government of India holds 58.78% of the equity of the company and the preference shares in full. HOCL is listed on the Bombay Stock Exchange (BSE).

9.3 Following globalization and liberalisation of the Indian economy in the early 1990's resulting in competition from international players, HOCL incurred losses for the first time in 1997-98. Due to continued losses leading to negative net worth by 2003-04, the company was referred to erstwhile Board for Industrial & Financial Reconstruction (BIFR) in February, 2005. Based on the recommendations of Board for Reconstruction of Public Sector Enterprises (BRPSE), Government approved a revival package for the company in 2006.

9.4 However, the company again suffered losses in 2008-09 and 2009-10 mainly due to recessionary trend in the market as an effect of global meltdown. Though it earned profit during 2010-11, the situation worsened thereafter with losses during 2011-12 and 2012-13 mainly due to withdrawal of anti- dumping duties on its main products-Phenol and Acetone. In order to enable the company to tide over its liquidity problems, the Government on 1st August, 2013 approved postponemeof redemption of Rs.270 crore preference shares issued to the Govt. of India (date of allotment 24st January 2008), which was due for redemption from 2011-12 onwards to 2015-16. The Govt. guarantee of Rs.100 Crore was also further extended up to August, 2017.

9.5 Further, Government guarantee of Rs.150 crore was provided to HOCL in July, 2014 for issue of bonds by the company for meeting its working capital requirement and payment of liabilities towards raw material suppliers, employee dues, etc. This enabled the company to restore manufacturing operations at its Kochi and Rasayani units. However, the global fall in the prices of petroleum products at that time caused severe crash in the prices of Phenol and Acetone and the company faced difficulties in selling the products at profitable rates and generating adequate working capital. This led to frequent shutting down of operations at both Kochi and Rasayani units thereby further aggravating the financial crisis of HOCL. Following implementation of restructuring plan for HOCL, the plant operations of Rasayani unit have been closed down. The Phenol/Acetone plant at Kochi unit resumed operations from July, 2017 and is being operated regularly since then.

Financial Performance

9.6 Financial performance of HOCL in terms of turnover and net profit / loss for the last 5 years and net worth as on 31.3.2024 are given below:

(Rs in crore)

Year	Turnover	Net Profit / (Loss)
2019-20	300.01	(94.75) *
2020-21	411.57	15.97 *
2021-22	433.67	(26.19) *
2022-23	631.44	(50.22)
2023-24	703.89	(55.32)
Net-Worth (as per new accounting standard Ind AS which includes revaluation of land and other assets) as on 31.03.2024: **Rs. 11.19 crore.** Net-Worth as per the Companies Act (excluding revaluation of land and other assets) as on 31.03.2024: **(-) Rs.964.34 crore.**		

** Re-stated as per Indlan Accounting Standards (Ind AS).*

The production details of HOCL are given below:-

(Quantity in MT)

Product	Annual Capacity	2022-23	2023-24	% Increase
Phenol	40,000	37,350	47,518	27.22
Acetone	24,600	23,306	29,613	27.06
Peroxide	10,450	10,323	10,579	2.48

The Phenol Plant at Kochi achieved a capacity utilization of 118.8% during the year 2023-24, as against 93.38% achieved in the previous financial year 2022-23. During 2023-24, the company achieved turnover of Rs.703.89 crore as against Rs.631.44 crore. during the previous financial year 2022-23.

The HOCL Kochi unit received Suraksha Puraskar from National Safety Council, Kochi among the large chemical industries category for the years 2020, 2021 and 2022. HOCL bagged first prize in Kerala State Industrial Safety award 2022 and 2023. Received First prize in Official Language implementation from TOLIC Kochi and Rajbhasha Puraskar the second prize for the best implementation of official language policy in 'C' region - PSU category for the year 2022-23 from Ministry of Home Affairs, Govt. of India. Received the token of appreciation from Bureau of Indian Standards for no sample failure since the past three years.

Restructuring plan for HOCL

9.7 The Government of India on 17th May 2017 approved a restructuring plan for HOCL involving closing down operations of all the non-viable plants at Rasayani unit of HOCL, except N_2O_4 plant to be transferred to ISRO on 'as is where is' basis, with about 20 acres of land and employees associated with the plant. Financial implication of the restructuring plan is Rs.1008.67 crore (cash) which is to be met partly from sale of 442 acres HOCL land at Rasayani to Bharat Petroleum Corporation Ltd. (Rs.618.80 crore) and the balance through bridge loan from the Govt. The funds are to be used to liquidate the various liabilities of the company, including payment of outstanding salary and statutory dues of employees and repayment of Govt. guaranteed bonds of Rs.250 crore, and for giving VRS/VSS to the Rasayani unit employees except those retained as skeletal staff. The bridge loan amount, along with other Govt. liabilities of the company, is to be repaid to the Govt. from the disposal of remaining unencumbered land and other assets of Rasayani unit.

9.8 After implementation of restructuring plan, Phenol / Acetone plant at Kochi unit, resumed regular operations from July 2017. This enabled HOCL Kochi unit to achieve net turnover of Rs. 472 crore during 2018-19 (Rs.223 crore in 2017-18) with a net profit of Rs.22 crore (net loss of Rs.65.24 crore in 2017-18). HOCL has repaid outstanding Govt. of India loans (principal) of Rs.26.85 crore during 2019-20 and Rs.15.56 crore during 2020-21 and Rs.14.04 crore during 2021-22.

9.9 The proposal for payment of compensation to encroachers was again put up to HOCL Board in its meeting held on 08th August 2023. The Board after detailed discussions recommended the proposal, subject to approval from Administrative Ministry and also subject to hindrance - free, peaceful, advance possession of the entire 533 acres of HOCL land at Rasayani. The proposal is under consideration.

Hindustan Fluorocarbons Ltd (HFL)

9.10 Hindustan Fluorocarbons Ltd. (HFL), a subsidiary company of Hindustan Organic Chemicals Ltd. (HOCL), was incorporated on 14th July 1983. It is located at Rudraram, Telangana. The company started production in the year 1987 and was engaged in the manufacture of Poly Tetra Fluoro Ethylene (PTFE) and of Chloro Di Fluoro Methane (CFM-22). PTFE produced was extensively used in chemical, mechanical, electrical and electronic industries and has strategic applications in defence and aerospace sectors. CFM-22 is sold directly as a refrigerant gas and also as feed stock for production of PTFE.

9.11 Authorized and paid up share capital of HFL is Rs.21 crore and Rs.19.61 crore respectively. HOCL (Promoter Company) holds 56.43% of the equity share capital and balance is held by the public (39.13%) and Andhra Pradesh Industrial Development Corporation (4.44%). HFL is listed on the Bombay Stock Exchange (BSE).

9.12 HFL started making losses from its inception in 1987-88 resulting in erosion of its net worth and reference to erstwhile *Board for Industrial and Financial Reconstruction* (*BIFR*) in 1994. A rehabilitation package for HFL under the operating, agency M/s IDBI was approved by BIFR on 03rd December 2007. Total cost of rehabilitation package was Rs.19.28 crore which did not involve infusion of any Govt. funds. Following implementation of the rehabilitation package, HFL made marginal profits from 2007-08 to 2012-13. However, the company did not come out of BIFR as its net worth remained negative. HFL again suffered loss of Rs.24.82 crore in 2013-14 mainly on account of provisioning for 1997 and 2007 wage revision arrears and reduction in sales realization. Thereafter, the company has continued to suffer losses mainly on account of reduction in sales realisation. Despite the 2007 rehabilitation package, net worth of the company has remained negative.

Financial Performance

9.13 Financial performance of HFL in terms of turnover and net profit/loss for the last 5 years and net worth as on 31st March 2024 are given below:

(Rs. in Crore)

Year	Turnover (Net)	Net profit / (Loss)
2019-20	31.32	(3.63)
2020-21	3.67	(24.83)$
2021-22	0.00	(6.13)
2022-23	0.00	(5.11)
2023-24	**0.00**	**1.23**

(Net worth (as per Ind AS which includes revaluation of land and other assets as on 31.3.2024. (Rs.82.70) Crore

$This amount includes an amount of Rs.18.05 Cr for VRS expenditure during the year.)

9.14 During the year 2023-24, the company did not have any sales as the manufacturing activities have been stopped. The reduced turnover and increase in losses is due to the shutting down of plant/unit as per the CCEA decision dated 22th January 2020 for closure of the company as given in the following paragraphs.

Closure of HFL

9.15 HFL was earlier manufacturing CFM-22/HCFC-22 and sold most of it directly as refrigerant gas since its conversion to PTFE was not financially viable for the company due to uneconomic plant capacity and old technology. For the calendar year 2020, HCFC-22 production quota of only 283 MT was allotted by Ministery of Environment, Forest & Climate Change (MoEFCC) as per the requirements of Montreal Protocol, with the reduced HCFC-22 quota in 2020, HFL's operations have become unsustainable and it was forced to shut down the plant after April-May, 2020.

9.16 In view of the poor financial situation and non-viability of HFL's existing operations, the CCEA at its meeting on 22nd January 2020 approved shutting down the operations of the plant/unit of HFL and closure of the company.

9.17 After receipt of interest free loan of Rs.73.70 crore as advance from the Contingency Fund of India (CFI) sanctioned by the Ministry of Finance in May, 2020, and Rs.2.17 crores in March 2022 for settlement of immediate closure related liabilities of HFL, necessary action was initiated for closing down the company's operations. As on 31st March 2024, all employees have been relieved on VRS/VSS or have superannuated after payment of their terminal and outstanding dues. At present there are four employees who have been deputed from HOCL for looking after the closure related activities and legal cases. The company has cleared the

outstanding sum in the cash credit account with SBI and also settled water supply dues. HFL is currently in the process of delisting of securities.

Hindustan Insecticides Limited

9.18 HIL (India) Limited, formerly known as Hindustan Insecticides Limited (HIL), is a CPSE under the administrative control of the Department. The company was incorporated in 1954 to supply DDT for the malaria control programme of Ministry of Health & Family Welfare,(MoHFW) Government of India. DDT has played a pivotal role in elimination of malaria and kala-azar. In later years, the company diversified into the Agrochemicals, seeds, and fertilizers segments, thereby becoming a one-stop shop for all three key agri-Inputs, with its state-of-the-art manufacturing unit located at Rasayani, Maharashtra State.

9.19 HIL is actively engaged in manufacturing and supply of agrochemicals through its vast marketing network of 5 regional sales office, 15 states offices and 1500 active dealers located on pan India basis,HIL has the capabilities and capacity to manufacture most of the key generic range of chemicals, including Malathion, required by the Government to meet exigencies like locust control. Agrochemical Technicals and Formulations are manufactured in the company's own units located at Rasayani, Maharashtra. The product range includes insecticides, herbicides/weedicides, fungicides, etc. The company's Rasayani Unit in Maharashtra has the following plants:

S. No.	Manufacturing Plants at HIL's Rasayani Maharashtra	Plant Capacity per annum (MT/KL)
1	Malathion Technical	1000
2	Malathion Formulation	2000
3	Chlorpyriphos Technical	600
4	Chlorpyriphos Formulation	3000
5	Imidacloprid Technical	150
6	Imidacloprid Formulation	750
7	LLIN Master Batch	1200
8	Water Soluble Fertilizers	1500

9.20 HIL is the only CPSE in the manufacture and supply of Plant Protection Chemicals in a highly competitive market dominated by more than 15 MNCs and about 750 private manufacturers. To safeguard the interests of the farming community, HIL acts as a price regulator to keep the prices of pesticides under control in the market. The absence of any government-owned agencies in the market could encourage cartelization and undue price escalation. HIL has created a strong brand image among farmers due to quality and reasonable pricing.

9.21 Apart from the agrochemical segment, HIL continues to be a key player in the public health segment. The PSU closely works in association with the MoHFW Govt. of India, and various State Governments for the control of diseases like Malaria, Kala-azar, and other vector-borne diseases. The three public health products manufactured by HIL are extensively used by many states in the country for the control of vector-borne diseases: - DDT 50% wdp, Malathion 95% ULV, and Long-Lasting Insecticidal Nets (LLIN) – Medicated mosquito nets.

9.22 HIL has set up a manufacturing unit of Long-Lasting Insecticidal Nets (LLINs) with an annual production capacity of 5 million nets per annum, which will be scaled up to 10 million nets per annum by September 2024, HIL's LLINs have the unique property of effectiveness for 3 years and up to 20 washes.

9.23 HIL is also in process of setting up of bio-pesticide plants for both public health and agriculture sector in line with the Government of India's focus of promoting Integrated Pest Management (IPM) practices and Natural Farming. Manufacturing units of bio-larvicide Bti and Neem based formulations for public health segment and bio-pesticides like Btk, Trichoderma and Neem formulation for agriculture sector shall be set up at Rasayani Unit. These plants shall be commissioned by December 2025 with the support of United Nations Industrial Development Organization (UNIDO).

9.24 HIL (India) Ltd has also emerged as one of the leading seed supplying agency in the country. The Company has acquired the status of a National Level Seed Production Agency (NLA) by the Ministry of Agriculture & Farmers Welfare (MoAFW), Government of India, to produce and supply quality seeds under flagship schemes like the National Food Security Mission (NFSM), Mission on Pulses, National Mission on Edible Oils (NMEO), Nutri Cereal, Millets, etc. HIL (India) Ltd is significantly contributing to the production of seed minikits for the supply of the latest high-yielding varieties of Oilseeds, Pulses, Millets, etc., to farmers in various states, including the North Eastern Region.

9.25 HIL exports its products like DDT for malaria control and agrochemicals to African Nations such as South Africa, Zimbabwe, Zambia, Namibia and also to Latin American countries. Public Health Products like Malathion ULV/Tech., are also extensively used by Government Institutions and Municipal Corporations for the control of vector-borne diseases. HIL has recently exported Malathion 95% Technical to Afghanistan (40 MT). The company is in the process of exporting DDT (36 MT) to the Department of Health, Republic of South Africa.

9.26 HIL played a pivotal role in controlling locust infestations in the country during the years 2020-21 & 2021-22. The country experienced a massive locust attack during this period after a span of 21 years. HIL has a long-term agreement with the Directorate of Plant Protection and

Quarantine, Ministry of Agriculture & Farmers Welfare (MoAFW), for the manufacturing and supply of Malathion Technical, used for the control of Locust. The efforts of HIL were well appreciated by the Ministry of Agriculture & Farmers Welfare (MoAFW) at various forums.

9.27 Under Agriculture Extension Services, The company with the support of the Department of Chemicals and Petrochemicals (DCPC) under the Chemical Promotion Development Scheme (CPDS), regularly organizes Farmers Training Programs across the country. The objective of the program is to create awareness among farmers on the safe and judicious use of pesticides and IPM practices. Till the year 2023-24, the company organized 158 farmer training programmes across the country, wherein 57,233 numbers of progressive farmers are trained across different districts of the country.

9.28 The farmers trained in such programs act as trainers of trainees, passing on the information to multiple other farmers. It is understood that one trained farmer can effectively disseminate the information to approximately 5-6 other farmers. Therefore, if 57,233 farmers are trained in Farmers Training Programmes, it is assumed that these trained farmers shall, in turn, pass on the message to approximately 3-3.5 lakh farmers.

Financial Status of the Company

9.29 The Audited Financial Position of HIL (India) Limited for last 5 Years:

(Rs. in Crore)

Financial Year	Revenue	PBIDT	PBT	Net Profit	Net Worth
2017-18	404.60	26.47	4.29	3.41	100.22
2018-19	456.47	29.53	4.65	3.62	103.84
2019-20	401.02	28.51	0.84	0.59	104.43
2020-21	387.90	29.17	1.15	1.15	105.58
2021-22	353.42	34.09	2.21	2.21	107.79
2022-23	199.89	(37.31)	(68.70)	(68.70)	39.09
2023-24(prov)	203.50	12.43	4.73	4.73	43.82

Closure of Bathinda, Punjab and Udyogamandal, Kerala Unit :

9.30 Out of three units of HIL (India) Ltd., the Udyogamandal and Bathinda units were incurring losses for the last several years and as a result, the operations of these two units have become completely unviable.

9.31 Department of Investment and Public Asset Management (DIPAM) conveyed approval of Alternative Mechanism (AM) for closure of Udyogmandal, Kerala and Bathinda, Punjab units of HIL(India) Ltd. and fresh loan of Rs.486.74 crore to clear the liabilities of Udyogamandal and Bathinda Units of HIL (India) Limited up to 31st March 2024 and to waive off the Government loan (Plan) and outstanding interest thereon (up to 31st March 2024) amounting to Rs.104.25 crore to HIL (India) Ltd. Department of Expenditure and Deptt. of Economic Affairs also approved budgetary support to release Rs.486.74 crore as fresh loan and waiver off the Government loan (Plan) and outstanding interest thereon (up to 31st March 2024) amounting to Rs.104.25 crore to HIL (India) Ltd.

9.32 However, out of Rs.486.74 crore, an amount of Rs 399.18 crore has been received in financial year 2023-24. The same amount has been released to HIL (India) Ltd. for settlement of bank dues, statutory dues, clearance of liabilities of Udyogamandal and Bathinda Units on account of VRS liabilities, manpower dues on account of closure of Udyogamandal, Kerala and Bathinda, Punjab Units up to 31st March 2024.

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Chapter-10

AUTONOMOUS INSTITUTIONS

Central Institute of Petrochemicals Engineering & Technology (CIPET)

Introduction

10.1 The Central Institute of Petrochemicals Engineering & Technology (CIPET) is a technical education institution under the Department of Chemicals & Petrochemicals, engaged in skill development, technology support, as well as academic & research activities for the promotion of the petrochemical and allied industry in the country. CIPET has 46 centers across the country which includes 8 Institutes of Plastics Technology (IPTs), 31 Centers for Skilling and Technical Support (CSTS), 03 Schools for Advanced Research in Polymers (SARP) and 4 sub-centers. In addition, CIPET is in the process of establishing 03 more Centers at Ayodhya, Bihta and Sanand.

10.2 Academic and Skill development Programmes

The National Policy on Skill Development aims to create a workforce empowered with improved skills, knowledge and internationally recognized qualifications. In line with the same, CIPET conducts NSQF-aligned and National Skills Qualifications Committee (NSQC)-approved Skill Development Training Programs (SDTPs) in the field of petrochemicals engineering and technology. The Institute provides employment-linked, sponsored skill development programs; up-skilling and re-skilling programs; short term industry specific programs; and in-plant training/ internship training programs for students from various colleges and universities.

10.3 Long term professional skill development programmes

CIPET conducts various long term training programs including Diploma, Post Diploma, Post Graduate Diploma, Undergraduate and Post Graduate programmes. The Undergraduate, Postgraduate and Doctoral programs are offered at CIPET:IPTs in affiliation with the respective State Technical Universities while the Diploma level programs are offered at CIPET:CSTSs and students for these programs are admitted through all India based CIPET Admission Test. A total of 5046 students were admitted for the Diploma Level and UG & PG level programmes for the academic session 2023 24.

10.4 Short term vocational skill development training programmes

The short duration Skill Development Training Programs (SDTP)/ Skill Upgradation Programs (SUPs) range from 1 day to 6 months and are aimed at enhancing skill and competency level of participants in the relevant domains of petrochemicals and plastics/ polymers. Majority of

the Skill Development Training Programs are supported by various Ministries/ State/ Central Government Departments/ agencies with the main objective of uplifting the underprivileged/ unemployed youth through gainful employment in leading plastics & allied industries in India and abroad. During 2023-24, CIPET has trained 61,560 candidates through various short term skill development programmes.

During the year 2023-24, CIPET has provided training to 66,606 persons (5,046 long term professional skill development programmes) and 61,560 short term vocational skill development training programmes against the target of 65,124.

10.5 CIPET has been recognized as an Awarding Body (AB) & Assessment Agency (AA) under the Dual Recognition category by the National Council for Vocational Education and Training (NCVET), Ministry of Skill Development & Entrepreneurship, Government of India.

10.6 Technology Support Services

CIPET offers Technology Support Services (TSS) in the entire spectrum of petrochemical engineering and technology. TSS forms an integral part of CIPET's portfolio and highlights its technical competency by offering high-quality services to customers in the areas of design and manufacturing of moulds and dyes, tooling, plastics processing and testing, inspection and quality control.

10.7 During 2023-24, CIPET undertook 1,24,507 Technology Support Service Assignments (TSS) in the area of plastics processing, design and tooling, testing, consultancy and inspection activities for the petrochemicals and allied industries.

10.8 Research & Development (R&D) activities

CIPET has well-established R&D wing in the form of Schools for Advanced Research in Petrochemicals (SARP), namely, (i) Advanced Research School for Technology & Product Simulation (ARSTPS), Chennai; (ii) Laboratory for Advanced Research in Polymeric Materials (LARPM), Bhubaneswar; and (iii) Advanced Polymer Design & Development Research Laboratory (APDDRL), Bengaluru

10.9 During 2023-24, CIPET made 47 publications in reputed international journals, organised 12 R&D workshops, undertaken 33 sponsored research projects, filed three patents and registered 20 students for Ph.D. Some of the key R&D projects undertaken during the year include

i. Development of natural fiber reinforced polymer composites for automotive application for M/s. Mercedes Benz R&D India Pvt. Ltd.;
ii. Development of injection-molded rigid items from seaweed and its characterization;
iii. Pathway to commercialization of seaweed-based coatings on paper and paperboard;
iv. Development of Poly-packed Bitumen for BPCL, Noida;

v. Study on Accelerated Method development for biodegradability of polyolefins and compostable plastics;
vi. A Study on Quantitative and Qualitative determination of recycled content in Post-Consumer Recycled (PCR) Blends;
vii. Designing innovative recycling process for Multilayer Packaging (MLP) waste using selective Thermosolvolysis Process;
viii. Capacity Building for reducing Plastic & Chemical Pollution in India
ix. Development of sanitary pads for improved women hygiene; and
x. Informal sector capacity building with the formation of recycling clusters under MSME scheme.

10.10 Financial performance

CIPET has enriched its civil & technical infrastructure facilities, leading to consistent growth in all domains of petrochemicals engineering and technology including skill development, technology support, academic activities and R&D. During 2023-24, CIPET generated revenue of Rs. 337.03 crore and the Institute has been operating on self sustaining mode since 2008-09.

10.11 Milestones/ Achievements

i. Hon'ble PM inaugurated the CIPET Centre for Skilling and Technical Support (CSTS) at Varanasi in July, 2023.
ii. The Foundation Stone of CIPET: CSTS Ayodhya was laid by Hon'ble PM on 30th December,2023.
iii. Hon'ble Minister (C&F) inaugurated three new Centres for Skilling and Technical Support (CIPET: CSTS) at Gwalior, Baddi and Ranchi on 4th March, 2024.
iv. Hon'ble Minister (C&F) inaugurated the Boys Hostel Building of CIPET: IPT, Raipur in July, 2023.
v. Hon'ble MoS (C&F) inaugurated the CIPET Bidar Temporary Skill Centre in October, 2023.
vi. An Industry Interaction Meet was organized to "Showcase our capabilities & facilities and share the experience & expertise for mutual benefits" in Chennai on 16th June, 2023.
vii. An International Conference on "Advancement in Sustainable Materials for Energy and Environment (ASMEE 2023)" was organised in Raipur on 6th -7th October, 2023. 22 speakers participated in the event in which 43 research papers for oral presentation and 29 papers for poster presentation were selected.
viii. Annual Summit 2022-23 was held at CIPET, Chennai on 22nd June, 2023.

10.12 Signing of MoUs/ contracts

i. MoU was signed with ALIMCO for R&D, training and dye mould making.
ii. MoU with Rubber Board was signed to collaborate for cooperation in skill training, faculty & students exchange and internship opportunities.
iii. MoU was signed between CIPET-Jaipur and Manipal University, Jaipur on 22nd August, 2023.
iv. MoU with Bidar University was signed for establishment of a Skill Training unit at Bidar, Karnataka in August, 2023.
v. MoU with the Maulana Azad National Institute of Technology (MANIT) was signed to promote academic and research interaction in areas of mutual interest.

10.13 Other Activities

i. The CIPET Head Office and all the Centres organized Swachh Bharat Abhiyan activities on a monthly basis, wherein the students and staff undertook cleanliness activities in the Institute premises, hostel premises and surrounding areas. Awareness rallies were also organized in the adjoining areas highlighting the importance of hygiene and cleanliness.

ii. During the "Swachhta Pakhwada" (1st-15th September, 2023), CIPET organised various activities including Slogan writing & Essay writing Competition for students, Debate & Drawing Competition, Webinar on Swachhta in coordination with DCPC and an Awareness Rally on Swachhta for creating awareness on the importance of hygiene and cleanliness among general public.

iii. "Special Campaign 3.0" was observed by CIPET between 3rd-31st October, 2023 as part of which 235 Cleanliness Campaigns were organized by CIPET Centres.

Institute of Pesticide Formulation Technology (IPFT)

Introduction

10.14 The Institute of Pesticide Formulation Technology (IPFT), Gurugram is an autonomous institute registered under the Societies Registration Act, 1860 under the administrative control of the Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India IPFT is the only institute of its kind devoted to the development of state-of-the-art user and environment-friendly new generation pesticide formulation technologies, and has emerged as a reputed institute in this sphere.

10.15 The primary objectives of IPFT include developing new generation pesticide formulation technologies, promoting efficient and new application technologies, disseminating information regarding safe manufacturing practices, providing analytical and consultancy services, as well as imparting specialized training for pesticide personnel.

10.16 Since several decades, the institute has established a healthy rapport with the agrochemical industries and has been able to successfully develop various types of formulations which have been transferred to industry for commercialization in agricultural applications.

10.17 IPFT is NABL-accredited and GLP-certified to test agrochemicals in various formulations and food commodities. It is also a recognized laboratory to generate data for pesticide registration as per the Central Insecticides Board & Registration Committee CIB&RC Guidelines. IPFT undertakes both in-house and externally funded R & D projects.

10.18 Functional Divisions

IPFT is served by four major Functional Divisions - Formulation Division, Analytical Division, Bio-Science Division and the Pilot Plant Division.

i. Formulation Division

The main objective of this Division is to develop new generation pesticide formulations. This Division has developed more than 80 formulation technologies, most of which have been successfully transferred to large and medium scale pesticide industries in India and abroad for commercialization.

ii. *Analytical Division*

This Division possesses state-of-the-art research facilities and is actively engaged in providing R&D support services, quality control and regulatory data generation for agrochemical and other industries. The analytical facility of IPFT possess accreditation from NABL as per ISO/IEC 17025:2017 for pesticides analysis in food commodities (278 pesticides) and formulations (145 pesticides). Recently, IPFT has been certified by the National GLP Compliance Monitoring Authority (NGCMA) for physical-chemical analysis including five batch analysis and residue studies. Besides, it has been notified by CIB&RC for generating data on registration of pesticides. The Division conducts residue, persistence and other related studies as per the CIB&RC requirements.

Advanced Equipments in Analytical Lab

iii. *Bio-Sciences Division*

The major thrust of the Division is to evaluate the different pesticide formulations developed by the Institute for their commercial viability. Additionally, the Division is also actively engaged in developing registration data packages for new formulations of various pesticides as per CIB&RC protocols. The Division is recognized by CIB&RC for generation of data on bio-efficacy, phytotoxicity, compatibility, effect of pesticides on natural enemies and residual aspects of pesticides.

Experimental Farm Bio-efficacy Studies

iv. *Pilot Plant Division*

The Pilot Plant Division has been working on industry-sponsored projects and has developed bio-botanical new generation formulations.

10.19 Major Achievements (Grant-In-Aid Projects)

I. Monitoring of Pesticide Residues at National Level, sponsored by the Department of Agriculture and Farmers' Welfare (DA&FW), Ministry of Agriculture and Farmers' Welfare, Government of India

In accordance with the mandate of the project, 87 samples comprising of cereals, pulses, vegetables, fruits and milk are collected every month from two locations (Rohtak & Gurugram). These samples are analyzed for pesticide residue contamination and the reports are submitted on a monthly basis to the project-coordinating centre.

Vegetables & Fruits Sample Collection and Instruments for Residue Analysis.

II. Development of safe and effective soluble concentrate formulation of Monocrotophos

Monocrotophos is an insecticide having broad spectrum efficacy. Its Soluble Concentrate (SL) formulation poses the risk of intentional or accidental poisoning for users, in addition to the risk of residue in crop products. A safer formulation for the same has been developed using bittering agent, emetics, for minimizing the risk of accidental or intentional poisoning. The said technology has been transferred to United Phosphorus Limited.

III. Research & Development

a) **Combination formulation of insecticide and fungicide for seed treatment**

The combination suspo-emulsion gel formulation has been optimized and developed for broad-spectrum activity for seed treatment before sowing. The formulation's multiple modes of action not only ensure effective seed treatment, but its unique combination of active ingredients targets insects and diseases, providing protection to the seeds and emerging plants.

b) **Development of Imidacloprid Nanosuspension Formulation with Oleoresin for enhanced efficacy against whiteflies**

The development of an imidacloprid nanosuspension formulation with oleoresin involves creating tiny particles of the insecticide suspended in a liquid medium, which can improve its bio-availability and effectiveness. This combination offers advantages such as reduced environmental impact and targeted pest control, making it a promising method for more efficient and eco-friendly pest management in agriculture and horticulture.

c) **Development of soluble polymeric film for mosquito larvae control**

The development of soluble polymeric films is in progress. These films are designed to be placed in stagnant water bodies where mosquito larvae breed. The polymeric film slowly dissolves, releasing an insect growth regulator (IGR) which disrupts the development of mosquito larvae, effectively reducing mosquito populations. This approach is environment-friendly, as it targets only the mosquito larvae without harming other organisms, and also offers long-lasting larvicidal activity.

d) **Development of bio-botanical pesticide formulation for controlling pests of seed spices**

The work on formulation development for controlling pests of seed spices in collaboration with ICAR-National Center for Seed Spice Research (NRCSS), Ajmer is in progress. The bio-efficacy studies on bio- pesticide formulations from Gaur seed (Cluster Beans) extract, Aak (Calotropis gigantean) extract, Trarmira seeds extract, and Hirsutella thompsonii are also in progress.

e) **Evaluation of bio-efficacy, phyto-toxicity and effect of natural enemies of newer formulation of Imidacloprid, Emamectin benzoate and Deltamethrin on okra crop**
A new formulation has been developed by IPFT's Formulation Division, which was evaluated for its bio-efficacy. Currently, the field trial for the study is being undertaken. So far, the product has been found to be effective with no visible phyto-toxicity effect.

IV. R&D support services to agrochemical industry

A.Residue study projects:

The following residue study projects have been sponsored by industry and have been conducted as per the CIB&RC protocols:

a) Study on residues of CCP-8175 WG (Quizalofop-ethyl 8.8% + Oxyfluorfen 19% WG) in onion;
b) Study on terminal residues of CI-6102 WG (Clothianidin 10% + Chlorantraniliprole 06% WG) in paddy;
c) Study on terminal residues of CI-1813 SC (Flonicamid 18% + Spirotetramat 13.5% SC) in cotton;
d) Study on terminal residues of CI-2082 SC (Flonicamid 20% + Chlorantraniliprole 8% + Abamectin 2% SC) in brinjal;
e) Study on terminal residues of CF-1035 WG (Picoxystrobin 10% + Copper Oxy Chloride 35% WG) in paddy;
f) Study on residues of CI-5211 ME (Emamectin benzoate 5.2% ME) in pigeon pea.

B. Certificate of analysis and sample analysis reports

Pesticide formulation and R&D samples are received on a regular basis from various industries for analysis and generation of CoA (Certificate of Analysis). Samples have also been received from various academic institutions, including from research students. During the current financial year, more than 1000 such samples have been analyzed.

C. Bio-efficacy field trials

The following industry-sponsored projects were undertaken at the IPFT Experimental Research Farm. Some of the trials are ongoing while for others, reports have been completed and submitted to the sponsoring companies:

a) Evaluation of bio-efficacy, phyto-toxicity and effect of natural enemies of WCPL 410 against fall army worms, shoot borer, shoot fly and thrips on maize crop;
b) Evaluation of bio-efficacy, phyto-toxicity and effect of natural enemies of WCPL 410 against aphids, jassids, thrips, whiteflies, bollworms and pink bollworms on cotton crop;
c) Evaluation of bio-efficacy, phyto-toxicity and effect of natural enemies of WCPL 39 against aphids, jassids, thrips and whiteflies on cotton crop;
d) Evaluation of bio-efficacy and phyto-toxicity of WCPL 4075 against fruit borer, thrips, mites, fruit rot and mildew on chilli crop;

e) Evaluation of bio-efficacy, phyto-toxicity and effect of natural enemies of Candidate product: Hmb 01/1DD/21 against insect pests of cotton crop;
f) Evaluation of bio-efficacy and phyto-toxicity of Azoxystrobin 18.2% + Cyproconazole 7.3% SC against disease complex of wheat crop;
g) Evaluation of bio-efficacy and phyto-toxicity of Pyraclostrobin 133 g/l + Epoxiconazole 50 g/l SE against yellow rust of wheat crop;
h) Evaluation of bio-efficacy and phyto-toxicity of Sodium Para-nitrophenolate 0.4% SL (Chaperone) on cotton through drone-based application;
i) Evaluation of bio-efficacy and phyto-toxicity of Diafenthiuron 40.1% + Acetamiprid 3.9% WP (Hercules) on cotton through drone-based application;
j) Evaluation of bio-efficacy, phyto-toxicity and effect on natural enemies of BAL 175 formulation against shoot and fruit borer on brinjal crop;
k) Bio-efficacy, phyto-toxicity and effect on natural enemies study of BAL 113 formulation against whitefly and fruit borer on tomato crop;
l) Evaluation of bio-efficacy, phyto-toxicity and effect on natural enemies of BAL 175 formulation against borer complex on cotton crop;
m) Evaluation of bio-efficacy, phyto-toxicity and effect on natural enemies of BAL 2325 formulation against insect-pests of chilli crop;
n) Evaluation of bio-efficacy, phyto-toxicity and effect on natural enemies of BAL 2325 formulation against insect-pests of okra crop;
o) Evaluation of bio-efficacy and phyto-toxicity of Famoxadone 16.6% + Cymoxanil 22.1% SC against early and late blight on tomato crop;
p) Evaluation of bio-efficacy and phyto-toxicity of IILB-SP on cotton crop;
q) Evaluation of bio-efficacy and phyto-toxicity of Genius on chilli crop;
r) Evaluation of bio-efficacy and phyto-toxicity of Milstim on tomato crop;
s) Evaluation of phyto-toxicity and persistence of PII-50 55% EC on cotton crop;
t) Evaluation of phyto-toxicity and persistence of PIX 10082 44% EW on chilli crop;
u) Evaluation of phyto-toxicity and persistence of PIX 10082 44% EW on tomato crop;
v) Evaluation of phyto-toxicity and persistence of Sethoxydim 20% EC on onion crop;
w) Evaluation of phyto-toxicity and persistence of Nitenpyram 25% SP on cotton crop;
x) Evaluation of bio-efficacy, phyto-toxicity and effect on natural enemies of JCPL-IC-001 formulation against fruit borer of tomato crop.

D. Accreditation, Certification/ Awards and Recognitions

I. NABL accreditation for pesticide testing in formulations and food commodities;
II. OECD GLP certification for physical-chemical analysis including five batch analysis and residue studies;
III. CIB&RC recognition for data generation of pesticide registration.

E. Human Resource Development

IPFT conducts specialized training programmes for industry representatives/ executives for improving their skills and efficiency. IPFT also conducts special training programmes for students and imparts summer trainings for skill development. In the current year, the following trainings were organized:

I. Two one-month trainings between June-August, 2023
II. One three-month training between April-July, 2023
III. Provided training on pesticide residue and pesticide formulation to three students from Amity University between June-July, 2023
IV. One advance training on pesticide formulation analysis and method development between July-August, 2023
V. One-month internship training on Analysis of Pesticide Formulations and their Residues between June-July, 2023
VI. Two-week training on Pesticide Residue Analysis in May, 2023.

Pilot Plant process demonstrated and training provided to Scientists from Ghana deputed by UNIDO

F. Publications/ Seminars/ Webinar

18 Research papers published by IPFT scientists during the year.

G. Awareness and extension activities

IPFT is making efforts for popularizing the use of locally available botanicals and bio-pesticides for controlling different agricultural insects on pan-India basis. Workshops are organized to impart training to farmers for enhancing crop productivity through application of bio-botanical based products, which are safe to use and provide pesticide residue-free food products. The bio-botanical zero-budgeting formulations may be effectively applied for minimization of pesticide residue in crops. To promote organic farming, an industry interaction meet titled “Innovative Technologies in Pesticide Formulations and Quality Management System as per ISO/IEC17025:2017” was jointly organized by IPFT, NABL and CSIR-Indian Institute of Chemical Technology (CSIR-IICT) in Hyderabad on 27th October, 2023. The day-long event had lectures by eminent chemists, registration experts and formulation specialists such as Dr. Krishnaiah, Dr. Agarwal, Dr. Goyal, Dr. Alam, Dr. Jaiswal, Dr. Subas Chand, and Dr. Srinivas amongst others.

IPFT, NABL, and CSIR-IICT jointly organized an Industry Interaction Meet on “Innovative Technologies in Pesticide Formulations and Quality Management System as per ISO/IEC 17025:2017” on 27th October 2023 at CSIR-IICT, Hyderabad.

Activities under Swachh Bharat Mission

Swachhta Pakhwada was celebrated by IPFT from 1st-15th September, 2023.

Special Campaign 3.0 launched by Ms. Nivedita Shukla Verma, Secretary, Chemicals & Petro-chemicals and Chairperson-IPFT

Officers from DCPC, IPFT, HIL & Grant Thornton Bharat LLP, Gurugram

Hindi Nibandha Pratiyagita was conducted during Swachtaa Pakhawada and Hindi Diwas conducted on 14th September 2023

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Chapter-11

PROMOTIONAL ACTIVITIES AND MAJOR EVENTS

Chemical Promotion Development Scheme (CPDS)

11.1 Chemical Promotion Development Scheme (CPDS) is being implemented since 1997 in the Chemical Division of DCPC under Plan Head of Account. The objective of CPDS is to facilitate growth and development of Chemicals and Petrochemicals Industry by creation of knowledge products through studies, survey, data banks, promotional material etc. and dissemination of knowledge through conduct of seminars, conferences, exhibition etc. to facilitate development of these sectors. The Scheme also aims to incentivize research and innovation by awarding outstanding efforts in the field of chemicals and petrochemicals.

11.2 The aim of the Scheme is to extend soft support in the form of Grants-in-Aid (General) to various organisations/ industry associations, etc. to conduct workshops, seminars, studies, etc. to obtain necessary inputs for enabling the Department to firm its views on various policy matters relating to the Chemical and Petrochemical sector.

11.3 Mega events like India Chem, Advancements in Polymeric Materials (APM), National Awards, Global Chemicals Manufacturing Hubs in India (GCPMH), etc. which are useful for the promotion of national/ international trade and attracting foreign investment, R&D for indigenization of technologies & import substitution, are organized under CPDS. Programmes focusing on green technology, chemical safety and handling, pesticides, etc. are organized which benefit chemical industries and farmers. CIPET and IPFT, the Autonomous Bodies of this Department and Industry Associations viz. DMAI, AMAI, FICCI, CII, ICC, etc. organise small events on the themes which are useful for the development of Indian Chemical & Petrochemical Industry.

11.4 India Chem and Global Chemicals Petrochemicals Manufacturing Hubs (GCPMH) Summit are largest composite biennial events of the Department organised under this Scheme. These events help to promote research and development and scope of technology transfer, skill development, sustainability initiatives for comprehensive development of the Chemical and Petrochemical sector.

11.5 Since 2016, HIL (India) Limited, a PSU under this Department, is organising farmers training programmes under CPDS on Safe and Judicious use of Pesticides in crops and creating awareness among farmers towards the adoption of Integrated Pest Management Practices to minimize pesticides residue in food grains, edible, oils, fruits, and vegetables. Around 130 training programmes in around 120 districts are organised in different parts of the country so far. The objective of the training programmes is to address the problem of farmer suicides, soil degradation, damage to the underground water bodies, animals, birds, and human beings which are subject to the adverse effect of residual pesticides in the eatables due to indiscriminate / excessive use of agrochemicals. From the year 2022, IPFT is also organising

farmers training programmes under CPDS. During 2023-24 a total No.of 45 training programmes for the farmers were organised by HIL India Ltd and IPFT.

11.6 The funds utilized under CPDS since 2019-20 is as under:

(Rs. in Crore)

Year	Budget Estimates	Revised Estimates	Fund Utilized
2019-20	3.00	3.00	2.93
2020-21	3.50	2.80	2.80
2021-22	3.00	3.60	3.59
2022-23	3.00	3.00	2.99
2023-24	3.00	3.75	3.75

India: Global Chemicals & Petrochemicals Manufacturing Hub 2023

11.7 The 3rd edition of the Summit on "India: Global Chemicals & Petrochemicals Manufacturing Hub 2023" (GCPMH 2023) was organized by the Department of Chemicals & Petrochemicals jointly with the Federation of Indian Chambers of Commerce and Industry (FICCI) during 27-28 July, 2023 in New Delhi.

11.8 It is one of the important events in the chemical and petrochemical industry and it highlights the true potential of the Indian Chemicals and Petrochemicals Sector to the world. This edition of the GCPMH provided a grand overview of this fast-surging major sector of the Indian economy and was a platform for investors and other stakeholders to interact and forge alliances, highlighting and promoting segment-wise investment opportunities in respective investment regions, thereby providing immense potential for trade and investment, in a mutually beneficial way.

11.9 Smt. Nirmala Sitharaman, Hon'ble Minister of Finance inaugurated the event on 27th July 2023 in the presence of Shri Bhagwanth Khuba, Hon'ble Minister of State, Ministry of Chemicals & Fertilizers and Minister of State, Ministry of New & Renewable Energy. The event was also attended by Shri Piyush Goyal, Hon'ble Minister of Commerce. The event ended with valedictory remarks by Dr. Mansukh Mandaviya, Hon'ble Union Minister of Chemicals & Fertilizers and Health & Family Welfare. Andhra Pradesh, Odisha and Rajasthan supported the summit and participated as Partner States. 600 National and International delegates (approx.) participated in respective forums.

11.10 During GCPMH 2023, discussion were held on the important issues such as (i) captivating opportunities of PCPIRs/Chemicals Hubs (ii) roadmap to Net Carbon Zero (iii) India's journey

to energy self-sufficient by 2047 and way forward (iv) FTA – connecting the world – Vasudhaiva kutumbakam "One Earth, One Family, One Future" (v) Role of Banks and Private Equity Funds in supporting organic and inorganic growth in the chemical space (vi) Fueling R&D, Skill Development and innovation in CPC Industry and (vii) Sustainability through Circular Economy.

B20 International Conference on Chemicals and Petrochemicals

11.11 Ministry of Chemicals and Fertilizers, Department of Chemicals and Petrochemicals in collaboration with Confederation of Indian Industry (CII) organized the B20 International Conference on Chemicals and Petrochemicals: Sustainable transitions through Green Technologies and Digitalization on 24th May 2023 in New Delhi.

11.12 The conference brought together Digit alization, on experts, researchers, policymakers, and stakeholders from the chemical and petrochemical industry to discuss the latest trends, technologies, and strategies for achieving sustainability in the industry. It also put forward strategy for exploring collective action at both the bilateral and multilateral levels to facilitate negotiations among B20 members, foster decision making, and promote international agreements to boost sustainable chemistry for global economic growth.

11.13 During the Conference, deliberations were held on (i) sustainability in the chemicals & petrochemicals industry, (ii) pathways to achieve net zero/ sustainability in chemicals & petrochemicals industry, (iii) R&D, technology and digital transformation in chemicals & petrochemicals industry and (iv) inclusive & adaptive skill for sustainable ecosystem.

11.14 More than 500 delegates from India and overseas form industry/ associations/ federation across B20 Nations, Government representatives participated in the conference. Industry representatives from Germany, Mexico, Russia, Hungary, USA, Belgium, Singapore, UAE and South Korea also participated in the conference.

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Chapter-12

GENERAL ADMINISTRATION

Organisational set up of the Department

12.1 The main activities of the Department are policy making, sectorial planning, promotion and development of chemical and petrochemical industries. The administrative and managerial oversight of Public Sector Undertakings engaged in the manufacture of various chemicals and petrochemicals, as well as Autonomous Bodies engaged in these sectors are some of the other major functions of the Department.

12.2 The Department is headed by a Secretary to the Government of India who is assisted by a Joint Secretary & Financial Adviser, three Joint Secretaries, One Economic Adviser, one Deputy Director General and one Chief Controller of Accounts (Organisation chart at Annexure IV).

Employment of Scheduled Castes/ Scheduled Tribes/ Physically Handicapped in the Main Secretariat of the Department

12.3 The status of employment of Scheduled Castes/Scheduled Tribes/Physically handicapped in the main Secretariat of the Department, as on 20.06.2024 is as under:

Group	Total No. of posts	Scheduled Castes	Scheduled Tribes	Physically Handicapped
A	34	2	3	0
B	65	12	3	0
C	71	6	3	4
TOTAL	**170**	20	9	4

12.4 Officers in Group 'A' include officers on deputation from All India Services, Central Services, officers belonging to Central Secretariat Service and Technical posts of the Department. Placements in posts of Group B and C are done on the basis of nominations made by the Department of Personnel & Training, Department of Official Language and Ministry of Statistics & Programme Implementation.

Record Management

12.5 The Parliament has enacted "The Public Records Act, 1993" to regulate the management, administration and preservation of public records of the Central Government. The Central Government has also made rules to carry out the provisions of the Act. In terms of the provisions contained in Section 6(1) of the Act, the Under Secretary in-charge of General

Administration has been nominated as Records Officer in the Department. A modernized Record Room of the Department is located in Udyog Bhawan.

New Website of the Department

12.6 The department's website running on **Drupal 7 and 8 technology which was approaching** the end of life was re-developed using Drupal 9.4, an open source platform. Drupal 9.4 is more usable, accessible, inclusive, flexible and scalable than previous versions, with updated features like- backward compatibility, simpler than ever to maintain and upgrade for developers, f**aster and better performance** and **cleaner code base.** The url was changed from https://chemicals.nic.in to https://chemicals.gov.in for harmonization. It is hosted on NIC cloud and is certified by STQC for GIGW compliance. The redeveloped website is made more responsive and provide better user experience and easy accessibility, easier to navigate and gives easier access to information about the department and other valuable resources.

Cyber Security

12.7 An interactive session-cum-training program was conducted in collaboration with Indian Cyber Crime Co-ordination Center (I4C), MHA on 14.2.2023 and Webinar on Cyber Security Hygiene was organized on 26th.October.2023. The officers of the Department and PSUs/ABs under its administrative control participated in the programme with enthusiasm. One of the objectives of this scheme was capacity building of Government Officials for Cyber Hygiene such as properly shutting down the computer, changing passwords at regular intervals, being cautious against opening of phishing websites along with other websites, precautions to be taken while handling social media platforms and protections against data theft, etc, so as to prevent cybercrimes.

A Cyber Cell has been set up in the Department of Chemicals & Petrochemicals as a mechanism for 24x7 reporting of cyber incidents and respond to cyber alerts, if any.

For implementing Cyber Security guidelines, all the end points are updated with latest patches of the OS and other software with removing unused/unpatched software. The Mac-addresses of all the endpoints are mapped with IP addresses and network segregation (partitioning of a network) is already done at Department level. All end points have EDR (antivirus or malware protection program) running on it and is always up to date with latest signatures. Kavach as Multi-factor Authentication (MFA) is enabled on all NIC Email accounts. Administrative privilege and usage of pen drives are restricted on usage basis. Cyber security awareness trainings/ programs are conducted regularly to sensitize all the users on cyber security related best practices.

Implementation of Karmayogi Bharat

12.8 An iGOT Orientation program of Department of Personnel and Training was held for Department of Chemicals and Petrochemicals by Karmayogi Bharat, to demonstrate the iGOT Karmayogi portal, and assist in on-boarding Department's learners through the course of the session. All regular employees, of the level of ASO and above, of the Department regularly accesse the portal and consume the training programmes provided in the portal.

Upgradation of e-office and e-HRMSv2 Versions

12.9 The eOffice is a product that support governance by ushering in more effective and transparent inter and intra-government processes that facilitates a simplified, responsive, effective and transparent working of all government offices. Department upgraded E office version 7.2.5. to version 7.3.4 in May 2023. e-HRMS is a standard ICT solution for the Government sector for better management of personnel through electronic service record.

International Day of Yoga

12.10 International Day of Yoga was held on 21st June 2023. The theme of IDY-2023 for this year was "**Yoga for Vasudhaiva Kutumbakam"** and the domestic line was "**Har Aangan Yog"** which was propagated to bring Yoga to every household at the grassroots level. Acharyas of the Indian institute of Yoga and Management (Haryana) were invited to conduct one and half hour programme (Workshop) on Mind Wellness and Meditation.

Celebrating yoga day in the Department of Chemicals and Petrochemicals

Procurement through Government e-Market (GEM)

12.11 The Department made full utilization of the Government's e-procurement platform by procuring items it consumes through GeM Portal As a result, the value of goods procured through GeM for the period from 01st April 2023 till 31st March 2024 is Rs.471.71 lakh against the procurement value of Rs.337.75 lakh during the previous Financial Year.

Har Ghar Tiranga Campaign

12.12 Har Ghar Tiranga campaign was organized from 13th – 15th August 2023 to celebrate India's Independence Day. The officers uploaded selfies with Tiranga on the website *(www.harghartiranga.com)* and social media platform for making the Campaign a resounding success.

Sadbhawna Diwas 2023

12.13 Sadbhavana Diwas 2023 was observed and pledge taking ceremony was held. in the Department on 18th August 2023.

Administration of Fit India Pledge

12.14 Fit India Pledge was administrated by Secretary, DCPC to all US and above level officers on 29.8.2023.

Fit India Pledge being taken by officers in presence of Ms. Nivedita Shukla Verma, Secretary, Chemical & Petro-chemicals

Observation of Swachhata Pakhwada

12.15 During the Swachhata Pakhwada-2023, which was observed from 1st September 2023 to 15th September 2023, the Department of Chemicals & Petrochemicals and the PSUs/Autonomous Bodies under its administrative control undertook various swachhata activities like cleaning of office complexes / factories / labs / toilets / premises. Banners and posters on cleanliness were displayed. Various competitions like essay writing, poetry recitation, and drawing competitions etc. were organized during the Pakhwada. The officers and staff members of the Department also carried out shramdaan activity.

Campaigning for Swachhata During Swachhta Pakhwada

Swachhata Hi Seva Campaign

12.16 The Hon'ble Prime Minister had announced the Swachh Bharat Mission from the ramparts of the Red Fort on August 15th 2014. To celebrate 9 years of the Mission, the Government decided to launch Swachhta Hi Sewa Campaign from 15th September to 2nd October 2023 with the aims for adopting a whole of government approach to ensure visibly higher order of cleanliness through Shramdaam (Volunteerism) and Jan Bhagidari (community participation). As part of the Swachhata Hi Seva (SHS) 2023 campaign based on the 'Garbage Free India", a programme of Shramdaan activity was arranged at the CIPET Centre, Murthal (Haryana) on 1st October 2023. The Officers and staff members of the Department as well as CIPET participated in the Shramdaan activity at Murthal. Other PSUs/AIs were also participated and arranged events under the Campaign in their respective places.

Sharamdaan activity at different centres

Special Campaign 3.0:

12.17 The Department implemented Special Campaign 3.0 during the period from 10th October 2023 to 31st October 2023. The Department having successfully cleaned up its record room in the preceding year, focuses its attention on electronic files resulting in the closing of 4921 e-files. The Department fully achieved its target in disposing off references it receives from State Government and members of Parliament.

Vigilance Awareness Week:

12.18 The Department observed Vigilance Awareness Week, 2023 on 30th October 2023. All Joint Secretary level officers administered integrity Pledge to all officers/officials working under them on 30th October 2023.

Welfare of People with Disabilities

12.19 The Department of is the cadre controlling authority in respect of 06 technical posts in Group 'A', 5 posts of staff car driver, 1 post of dispatch rider and 41 posts of multi-tasking staff (MTS) in Group 'C'. The post of MTS Group 'C' in this Department has been identified for the post suitable for following categories of disabilities covered under Section 34(1) of the RPWD Act, 2016 :

a. B, LV
b. D, HH
c. OA, BA, OL, BL, OAL, CP, LC, Dw, AAV, MDy
d. ASD (M, MoD), ID, SLD, MI
e. Multiple Disabilities involving (a) to (d) above.

Rashtriya Ekta Diwas (National Unity Day)

12.20 The Department observed Rashtriya Ekta Diwas (National Unity Day) on 31st October 2023 to commemorate the birth anniversary of Sardar Vallbhbhai Patel & Rashtriya Ekta Diwas pledge was administered to all officers and staff members.

Celebration of Constitution Day

12.21 As a part of the celebration of Constitution Day which falls on 26.11.2023 officers and staff were mobilised to read the Preamble of the Constitution and thereby reaffirming our commitment to uphold its ideology.

Right to Information Act, 2005

12.22 Under the provisions of the Right to Information Act, 2005, a RTI Cell has been set up in the Department to coordinate the RTI-related work. This section collects, transfers the application seeking information under the RTI Act, 2005 to the Central Public Information Officers / Public

Authorities concerned with the subject matter and submits quarterly returns regarding receipt and disposal of the RTI applications/appeals to the Central Information Commission.

I. All Under Secretary/ Section Officer level officers have been designated as Central Public Information Officers (CPIOs) under section 5(1) of the Act, according to the subjects being handled by them.

II. All Director /Deputy Secretary level officers have been designated as Appellate Authorities in terms of section 19(1) of the Act, in respect of Under Secretaries/Section Officers working as CPIOs with them.

III. To facilitate the receipt of applications under the RTI Act, 2005, a provision has been made to receive the applications at the Reception Counter of the Department. The applications so received are further forwarded by the RTI Cell to the CPIOs/Public Authorities concerned.

IV. As per para 1.4.1 of DoPT's guidelines issued vide their O.M. No. 1/5/2011-IR dated 15.4.2013, this Ministry has been disposing all RTI applications, appeals and replies of CPIOs and appellate authorities through the portal.

Redressal of Public Grievances

12.23 Internal grievances redressal machinery functioning under the Department, attends all the public grievances. The Economic Advisor has been nominated as Nodal officer of Public Grievances of the Department. The name, designation, room number, telephone number, etc. of the Nodal Officer in Public Grievances has been displayed on the website of the Department *(http://chemicals/gov.in.)* A public Grievance Officer has been nominated in each Division as the Nodal Officer to monitor the progress of the redressal of public grievances in respective Divisions.

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Annexure-I

PRODUCT-WISE INSTALLED CAPACITY & PRODUCTION OF MAJOR CHEMICALS

(Figures in 000'MT)

Major Groups / Products	Installed Capacity			Production					CAGR (%)
	2020-2021	2021-2022	2022-2023	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	
1	2	3	4	5	6	7	8	9	10
1. Alkali Chemicals									
SODA ASH	3614.00	3614.00	3714.00	3048.19	3069.43	2638.12	3078.90	3219.32	1.4
CAUSTIC SODA	3898.20	4150.83	4227.40	2925.35	3136.94	2964.08	3462.77	3604.47	5.4
LIQUID CHLORINE	2961.23	3124.41	3158.15	2069.11	2250.43	2174.26	2499.33	2668.85	6.6
Total	**10473.43**	**10889.24**	**11099.55**	**8042.65**	**8456.80**	**7776.46**	**9041.00**	**9492.64**	**4.2**
2. Inorganic Chemicals									
ALUMINIUM FLUORIDE	25.60	25.60	25.60	5.70	5.05	3.70	8.91	5.31	-1.8
CALCIUM CARBIDE	112.00	112.00	112.00	83.17	81.34	86.78	98.62	83.44	0.1
CARBON BLACK	696.00	696.00	696.00	546.39	500.15	384.78	456.49	447.00	-4.9
POTASSIUM CHLORATE	28.60	28.60	28.60	0.70	16.18	17.08	17.68	14.23	112.1
SODIUM CHLORATE	22.32	22.32	22.32	0.00	0.00	17.92	21.14	23.21	
TITANIUM DIOXIDE	82.50	82.50	82.50	57.06	49.49	51.22	56.96	46.81	-4.8
RED PHOSPHORUS	1.68	1.68	1.68	1.03	1.03	1.07	1.15	1.17	3.3
HYDROGEN PEROXIDE	218.63	221.77	221.27	156.45	122.84	139.90	143.49	184.37	4.2
POTASSIUM IODATE	1.20	1.20	1.20	0.00	0.56	0.54	0.58	0.51	
CALCIUM CARBONATE	371.55	383.55	383.55	213.33	286.83	274.79	246.78	252.38	4.3
Total	**1560.07**	**1575.21**	**1574.71**	**1063.83**	**1063.47**	**977.78**	**1051.78**	**1058.43**	-0.1
3. Organic Chemicals									
ACETIC ACID	142.05	142.05	165.51	153.80	167.86	154.76	166.59	165.49	1.8
ACETIC ANHYDRIDE	119.18	119.18	124.65	95.47	74.15	75.09	78.43	97.85	0.6
ACETONE	47.14	47.14	47.14	40.74	36.27	39.03	36.12	33.99	-4.4
PHENOL	76.75	76.75	76.75	65.39	57.85	61.27	58.16	54.98	-4.2
METHANOL	474.30	474.30	474.30	271.93	176.05	234.03	167.71	69.27	-29.0
FORMALDEHYDE	397.80	451.78	435.28	226.61	260.41	244.66	293.07	301.06	7.4
NITROBENZENE	126.45	126.45	126.45	68.80	61.14	76.09	82.85	64.47	-1.6
MALEIC ANHYDRIDE	7.66	7.66	7.66	4.56	5.02	5.38	6.33	6.91	10.9
PENTAERYTHRITOL	15.76	17.40	17.40	14.99	15.21	11.65	16.33	15.59	1.0
ANILINE	54.10	54.10	54.10	37.85	25.44	33.53	39.66	22.17	-12.5
CHLORO METHANES	330.99	345.99	438.45	285.53	296.91	326.95	340.82	411.56	9.6

ISOBUTYLBENZENE	16.80	16.80	16.80	9.70	9.44	12.72	8.52	9.60	-0.2
ONCB	30.00	30.00	30.00	23.70	19.84	23.27	26.69	27.08	3.4
PNCB	48.40	48.40	48.40	36.07	31.90	38.89	43.71	46.19	6.4
MEK	10.00	10.00	10.00	7.00	9.83	8.00	8.85	8.35	4.5
ACETALDEHYDE	151.01	151.97	151.97	61.89	77.10	55.97	72.51	77.70	5.9
ETHANOLAMINES	27.00	27.00	27.00	16.70	15.39	16.70	20.98	19.69	4.2
ETHYL ACETATE	562.06	575.06	575.06	440.56	473.39	453.13	445.43	438.34	-0.1
MENTHOL	33.65	33.65	33.65	6.24	7.44	7.48	10.30	6.36	0.5
ORTHO NITRO TOLUENE	44.80	44.80	44.80	16.89	25.98	27.67	29.95	34.90	19.9
Total	**2715.89**	**2800.47**	**2905.36**	**1884.42**	**1846.62**	**1906.27**	**1953.00**	**1911.52**	0.4
4. Pesticides and Insecticides									
D.D.T.	6.34	6.34	6.34	1.37	1.10	0.57	0.66	0.28	-32.8
MALATHION	3.80	3.80	3.80	4.39	3.79	3.84	3.29	2.84	-10.3
DIMETHOATE	1.45	1.45	1.45	1.26	1.45	1.45	1.39	1.01	-5.2
D.D.V.P.	33.62	33.62	33.62	9.14	0.00	0.94	0.42	0.04	-74.0
QUINALPHOS	3.40	3.40	3.40	0.89	0.86	1.06	2.45	0.60	-9.2
MONOCROTOPHOS	13.94	13.94	13.94	5.30	5.82	7.92	7.49	5.10	-0.9
PHOSPHAMIDON	2.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	
PHORATE	12.40	6.60	6.60	5.85	0.00	0.00	0.00	0.00	-100.0
ETHION	2.80	2.80	2.80	1.32	2.13	2.22	2.79	2.33	15.3
FENVALERATE	4.96	4.96	4.96	0.70	0.67	0.49	0.68	0.50	-7.8
CYPERMETHRIN	23.83	24.73	26.80	10.95	10.87	12.29	16.48	10.88	-0.2
ACEPHATE	20.50	20.50	20.50	19.63	21.08	29.59	29.56	33.39	14.2
CHLORPYRIPHOS	13.80	13.40	13.40	7.14	6.50	8.53	7.62	8.45	4.3
TRIAZOPHOS	3.36	3.36	3.36	0.89	0.00	0.00	0.00	0.00	-100.0
TEMEPHOS	0.25	0.25	0.25	0.08	0.15	0.15	0.00	0.06	-4.5
DELTAMETHRIN	0.79	0.85	1.02	0.68	0.69	0.59	0.71	0.74	2.1
ALPHAMETHRIN	0.50	0.60	0.64	0.34	0.44	0.54	0.51	0.49	9.1
PROFENOFOS TECHNICAL	10.50	17.30	17.40	12.45	12.36	16.08	16.25	16.10	6.6
PRETILACHLOR TECHNICAL	4.24	4.24	4.48	3.63	3.07	3.59	3.22	3.46	-1.2
PHENTHOATE	0.90	0.90	0.90	1.53	1.41	1.35	1.83	1.80	4.0
PENDIMETHALIN	5.80	6.60	7.40	2.82	2.75	3.64	4.76	4.67	13.4
PERMETHRIN TECH	1.80	1.80	1.91	1.86	1.22	1.66	2.49	3.58	17.8
LAMBDA CYHALOTHRIN	3.20	3.15	3.77	0.62	2.30	1.68	2.70	3.10	49.4
IMIDACALOPRID TECH	0.15	0.15	0.15	0.10	0.02	0.03	0.03	0.00	-68.4
CAPTAN & CAPTAFOL	3.43	3.43	3.43	1.93	1.46	1.46	1.90	1.63	-4.1
ZIRAM(THIO BARBAMATE)	0.70	0.70	0.70	0.76	0.63	0.88	0.67	0.59	-6.3
CARBENDZIM(BAVISTIN)	0.78	0.78	0.78	0.02	0.00	0.00	0.00	0.00	-100.0

MANCOZAB	119.80	121.80	121.80	69.33	60.88	97.43	118.67	83.62	4.8
HEXACONAZOLE	1.70	2.82	3.46	0.50	0.75	0.81	1.28	0.61	5.2
BUTACHLOR	0.50	0.50	0.50	0.00	0.00	0.00	0.00	0.00	
ISOPROTURON	6.00	6.00	6.00	0.00	0.00	0.00	0.00	0.00	
GLYPHOSATE	12.92	12.92	12.92	6.68	5.91	6.13	5.72	4.70	-8.4
ETHOFUMESATE TECHNICAL	1.65	1.65	1.95	1.04	0.79	0.43	0.73	0.89	-3.8
METCONAZOLE	0.75	0.50	0.50	0.34	0.21	0.20	0.19	0.35	0.8
DIURON	6.00	6.00	6.00	3.62	3.40	3.42	2.33	3.50	-0.8
2, 4-D	27.00	30.00	30.00	24.24	22.56	27.05	40.00	41.96	14.7
TRICLOPYR ACID TECH	0.30	0.30	0.30	0.13	0.13	0.00	0.38	0.17	7.8
THIAMETHOXAM TECHNICAL	5.10	5.10	6.32	5.57	6.15	5.21	6.56	6.43	3.6
ATRAZIN	1.20	1.20	2.40	1.48	1.73	1.61	1.69	3.06	20.0
METRIBUZIN	2.52	2.87	3.84	1.92	2.65	3.19	2.00	2.34	5.0
ZINC PHOSPHIDE	1.92	1.92	1.92	1.26	1.32	1.47	2.02	1.49	4.2
ALUMINIUM PHOSPHIDE	4.74	4.74	4.74	4.91	4.91	7.61	9.90	7.37	10.7
DICOFOL	0.15	0.15	0.15	0.05	0.01	0.00	0.00	0.00	-100.0
Total	**371.48**	**380.11**	**388.60**	**216.70**	**192.15**	**255.09**	**299.34**	**258.13**	4.5
5. Dyes and Pigments									
AZO DYES	21.14	21.14	18.90	9.05	8.54	6.62	9.15	7.65	-4.1
ACID DIRECT DYES(OTHER THAN AZO)	40.90	40.90	46.00	24.13	22.75	20.22	23.97	21.16	-3.2
DISPERSE DYES	77.93	77.93	92.27	55.24	61.94	51.79	65.94	60.43	2.3
OIL SOLUBLE (SOLVENT DYES)	3.60	3.60	1.20	2.29	2.41	0.44	0.67	0.47	-32.6
OPTICAL WHITENING AGENTS	67.68	67.68	67.68	29.30	20.74	18.18	22.54	16.77	-13.0
ORGANIC PIGMENT	88.36	88.36	89.02	73.94	75.08	67.27	74.34	55.60	-6.9
PIGMENT EMULSION	5.41	5.41	3.77	9.78	9.69	8.60	9.31	8.32	-4.0
REACTIVE DYES	196.33	197.53	216.53	151.38	156.71	132.13	161.94	117.21	-6.2
SULPHUR DYES (SULPHUR BLACK)	8.25	8.25	13.20	7.54	7.45	5.09	8.58	10.68	9.1
VAT DYES	2.86	2.86	3.34	1.78	2.13	1.99	2.32	2.44	8.2
SOLUBILISED VAT DYES	0.13	0.13	0.00	0.00	0.00	0.00	0.00	0.00	-100.0
FOOD COLOURS	0.00	0.00	0.00	0.79	0.67	0.49	0.71	0.92	4.0
NAPTHOLS	0.90	0.90	0.00	0.00	0.00	0.00	0.00	0.00	
INORGANIC PIGMENTS	18.05	18.05	18.05	16.29	16.12	14.64	18.55	16.41	0.2
Total	**531.54**	**532.74**	**569.95**	**381.51**	**384.22**	**327.46**	**398.02**	**318.06**	**-4.4**
Total Chemicals (1+2+3+4+5)	**15652.41**	**16177.76**	**16538.18**	**11589.11**	**11943.25**	**11243.05**	**12743.14**	**13038.76**	**3.0**

Source: *The source of Production and Installed Capacity of Chemicals and Petrochemicals products (which are being monitoring by Statistics & Monitoring Division (S&M) of DCPC) is MPRs received from manufacturers under large and medium scale units only.*
Note: *Some Pesticides and Dyes manufacturing units supply combined Installed Capacity.*

Annexure-II

PRODUCT-WISE INSTALLED CAPACITY & PRODUCTION OF MAJOR PETROCHEMICALS

(Figures in 000'MT)

Major Groups / Products	Installed Capacity			Production					CAGR (%)
	2020-21	2021-22	2022-2023	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	
1	2	3	4	5	6	7	8	9	10
A: Basic Major Petrochemicals									
1. SYNTHETIC FIBRES/YARN									
ACRYLIC FIBRE (AF)	107.00	107.00	108.00	99.45	102.90	77.02	66.68	96.15	**-0.8**
POLYESTER STAPLE FIBREFILL	69.00	69.00	69.00	52.99	49.89	40.30	39.04	34.13	**-10.4**
NYLON FILAMENT YARN	58.52	66.58	66.58	46.62	48.29	33.27	46.19	44.11	**-1.4**
NYLON INDUSTRIAL YARN/TYRE CORD	152.02	165.70	165.70	109.55	99.75	90.29	115.47	100.61	**-2.1**
POLYESTER FILAMENT YARN	2727.37	2661.15	2661.15	2316.43	2520.33	1997.93	2560.79	2486.48	**1.8**
POLYESTER STAPLE FIBRE	1350.46	1350.46	1350.46	931.44	1027.49	909.38	1160.48	1161.02	**5.7**
POLYPROPYLENE FILAMENT YARN	3.60	3.60	3.60	2.36	2.52	2.17	2.81	1.92	**-5.0**
POLYPROPYLENE STAPLE FIBRE	30.93	29.73	29.73	20.74	18.82	15.34	21.25	22.23	**1.7**
POLYSTER INDUSTRIAL YARN	21.50	21.50	21.50	14.83	14.73	12.36	14.39	13.56	**-2.2**
Elastomeric/Spandex Filament Yarn	8.50	8.50	20.00	7.08	8.06	6.60	12.90	12.33	**14.9**
Group Total	**4528.88**	**4483.22**	**4495.72**	**3601.48**	**3892.78**	**3184.65**	**4040.01**	**3972.55**	**2.5**
2. POLYMERS									
LINEAR LOW DENSITY POLYETHYLENE (LLDPE)	No separate Capacity			1581.22	2994.03	2958.92	2914.12	2424.42	**11.3**
HIGH DENSITY POLYETHYLENE (HDPE)	No separate Capacity			1597.68	1897.57	1910.04	1915.77	1717.90	**1.8**
LLDPE/HDPE (Combined) *	**5158.10**	**5158.10**	**5158.10**	**3178.90**	**4891.59**	**4868.96**	**4829.89**	**4142.32**	**6.8**
LOW DENSITY POLYETHYLENE	610.00	610.00	610.00	193.05	613.29	616.61	583.04	625.09	**34.1**
POLYSTYRENE (PS)	471.00	471.00	499.00	292.86	291.72	217.45	247.94	271.68	**-1.9**
POLYPROPYLENE(PP)	4933.80	4933.80	4933.80	4779.02	4982.82	4919.10	5240.70	4773.51	**0.0**
EXPANDABLE POLYSTYRENE	133.30	147.10	193.00	108.27	110.68	87.39	97.22	108.42	**0.0**
POLY VINYL CHLORIDE (PVC)	1493.00	1500.00	1500.00	1488.40	1513.59	1434.12	1471.87	1565.59	**1.3**
Group Total	**12799.20**	**12820.00**	**12893.90**	**10040.50**	**12403.69**	**12143.62**	**12470.65**	**11486.62**	**3.4**
3. SYNETHETIC RUBBER									

STYRENE BUTADIENE RUBBER	277.00	271.00	271.00	228.64	227.83	212.91	237.47	205.39	**-2.6**
POLY BUTADIENE RUBBER	100.00	100.00	100.00	122.23	130.25	128.55	132.82	126.11	**0.8**
ETHYL VINYL ACETATE	15.00	15.00	15.00	0.00	0.00	0.00	0.00	0.00	**0.0**
NITRILE BUTADIENE RUBBER	13.70	13.70	15.50	0.00	0.00	11.88	12.34	13.36	
GROUP TOTAL	**405.70**	**399.70**	**401.50**	**350.87**	**358.08**	**353.34**	**382.63**	**344.86**	**-0.4**
4. SYNTH. DETERGENT INTERMEDIATE									
LINEAR ALKYL BENZENE (LAB)	544.79	544.79	544.79	454.82	413.50	457.07	462.30	413.16	**-2.4**
ETHYLENE OXIDE (EO)	135.00	135.00	135.00	232.34	301.18	279.37	318.09	289.86	**5.7**
GROUP TOTAL	**679.79**	**679.79**	**679.79**	**687.16**	**714.68**	**736.44**	**780.39**	**703.02**	**3.3**
5. PERFORMANCE PLASTICS									
NYLON-6	No separate Capacity			20.50	40.84	55.39	68.33	68.73	**35.3**
NYLON 6,6	No separate Capacity			1.02	0.73	0.00	0.00	0.00	**-100.0**
NYLON-6/ NYLON 6,6 (Combined) **	**83.50**	**83.50**	**83.50**	**21.52**	**41.57**	**55.39**	**68.33**	**68.73**	**33.7**
ABS RESINS	213.00	199.00	199.00	148.18	136.46	121.94	122.78	148.94	**0.1**
POLYMETHYL METHACRYLATE	3.90	3.90	3.90	0.00	0.00	0.00	0.00	0.00	
STYRENE ACRYLONITRILE (SAN)	167.00	167.00	167.00	131.76	133.79	118.61	121.75	139.07	**1.4**
POLYESTER CHIPS/PET CHIPS	2558.55	2558.55	2622.55	1271.09	1344.70	1208.99	1365.93	1254.30	**-0.3**
POLYTETRAFLUOROETHYLENE(PTFE)	20.30	20.30	20.30	16.24	15.11	14.64	18.90	17.32	**1.6**
GROUP TOTAL	**3046.25**	**3032.25**	**3096.25**	**1588.79**	**1671.63**	**1519.57**	**1697.68**	**1628.37**	**0.6**
TOTAL BASIC MAJOR PETROCHEMICALS									
(1+2+3+4+5)	**21459.82**	**21414.96**	**21567.16**	**16268.79**	**19040.86**	**17937.61**	**19371.36**	**18135.41**	**2.8**
B: INTERMEDIATES									
1. FIBRE INTERMEDIATES									
ACRYLONITRILE (ACN)	24.00	24.00	24.00	0.00	0.00	0.00	0.00	0.00	
CAPROLACTUM	120.00	120.00	120.00	92.56	84.06	80.41	108.17	129.64	**8.8**
MONO ETHYLENE GLYCOL (MEG)	2210.60	2210.60	2210.60	1159.76	2007.78	1981.98	1990.16	1656.20	**9.3**
PURIFIED TEREPHTHALIC ACID (PTA)	3873.00	3873.00	3873.00	3404.93	3267.07	2996.76	3383.34	3202.20	**-1.5**
GROUP TOTAL	**6227.60**	**6227.60**	**6227.60**	**4657.25**	**5358.91**	**5059.15**	**5481.67**	**4988.03**	**1.7**
2. BUILDING BLOCKS									
OLEFINS									
BUTADIENE	552.00	552.00	552.00	385.76	481.01	458.80	477.40	429.43	**2.7**
ETHYLENE	7147.30	7147.30	7147.30	3831.89	6466.75	6364.89	6414.52	5802.61	**10.9**

PROPYLENE	5190.38	5190.38	5190.38	4639.53	4887.62	5215.76	5635.10	5064.00	**2.2**
GROUP TOTAL	**12889.68**	**12889.68**	**12889.68**	**8857.18**	**11835.39**	**12039.45**	**12527.02**	**11296.05**	**6.3**
AROMATICS									
BENZENE	1884.35	1884.35	1884.35	1414.56	1346.24	1407.87	1427.55	1156.60	**-4.9**
MIXED XYLENE	898.33	898.33	898.33	249.05	269.63	146.68	160.87	45.43	**-34.6**
ORTHOXYLENE	511.00	511.00	511.00	406.30	386.39	522.12	511.15	408.37	**0.1**
TOLUENE	288.27	288.27	288.27	141.14	140.16	113.99	115.66	112.50	**-5.5**
PARAXYLENE (PX)	3821.70	3821.70	3821.70	3331.81	2782.33	2614.21	2461.94	1638.87	**-16.3**
GROUP TOTAL	**7403.65**	**7403.65**	**7403.65**	**5542.87**	**4924.74**	**4804.86**	**4677.17**	**3361.78**	**-11.8**
FIBRE INTERMEDIATES AND BUILDING BLOCKS (1+2)	**26520.93**	**26520.93**	**26520.93**	**19057.29**	**22119.04**	**21903.46**	**22685.86**	**19645.85**	**0.8**
C: OTHER PETRO-BASED CHEMICALS									
DIETHYLENE GLYCOL	170.90	170.90	170.90	107.41	167.74	172.33	173.71	141.76	**7.2**
DIACETONE ALCOHOL	9.50	9.50	9.50	4.07	6.04	2.93	5.66	3.17	**-6.1**
ETHYLENE DICHLORIDE	593.20	593.20	593.20	339.20	345.29	326.24	366.96	398.62	**4.1**
BUTANOL	26.00	176.00	176.00	21.69	16.44	20.29	38.29	42.43	**18.3**
2-ETHYL HEXANOL	55.20	110.20	110.20	58.89	48.75	49.67	91.26	90.22	**11.3**
VINYL CHLORIDE MONOMER	541.30	541.30	541.30	803.62	874.47	799.22	813.08	849.31	**1.4**
PBT**	0.00	0.00	0.00	1.29	6.25	6.09	7.55	7.93	**57.4**
POLYCARBONATE**	0.00	0.00	0.00	0.12	0.11	0.00	0.00	0.00	**-100.0**
PROPYLENE OXIDE	51.00	51.00	51.00	35.12	34.56	44.42	49.92	49.23	**8.8**
PROPYLENE GLYCOL	22.00	22.00	22.00	19.13	19.51	19.71	20.54	21.32	**2.8**
POLYVINYL ACETATE RESIN	12.00	12.00	12.00	0.00	0.00	2.96	7.35	9.54	
UNSATURATED POLYSTER RESIN	34.00	34.00	34.00	0.00	16.44	12.88	16.55	19.01	
METHYL METHACRYLATE	4.38	4.38	4.38	3.99	1.71	0.00	0.00	0.00	**-100.0**
ISO-BUTANOL	2.80	9.80	9.80	2.21	1.71	2.07	3.97	5.78	**27.2**
C4-RAFFINATE	291.60	291.60	291.60	380.26	413.33	433.42	444.57	393.52	**0.9**
PHTHALIC ANHYDRIDE	401.91	401.91	401.91	275.07	269.64	292.96	339.62	330.16	**4.7**
VINYL ACTATE MONOMER	30.00	30.00	30.00	0.00	0.00	0.00	0.00	0.00	
ISOPROPANOL	70.20	70.20	70.20	58.27	60.51	55.31	65.13	48.78	**-4.3**
POLYOL	142.03	148.53	163.03	82.13	81.75	77.83	87.15	99.83	**5.0**

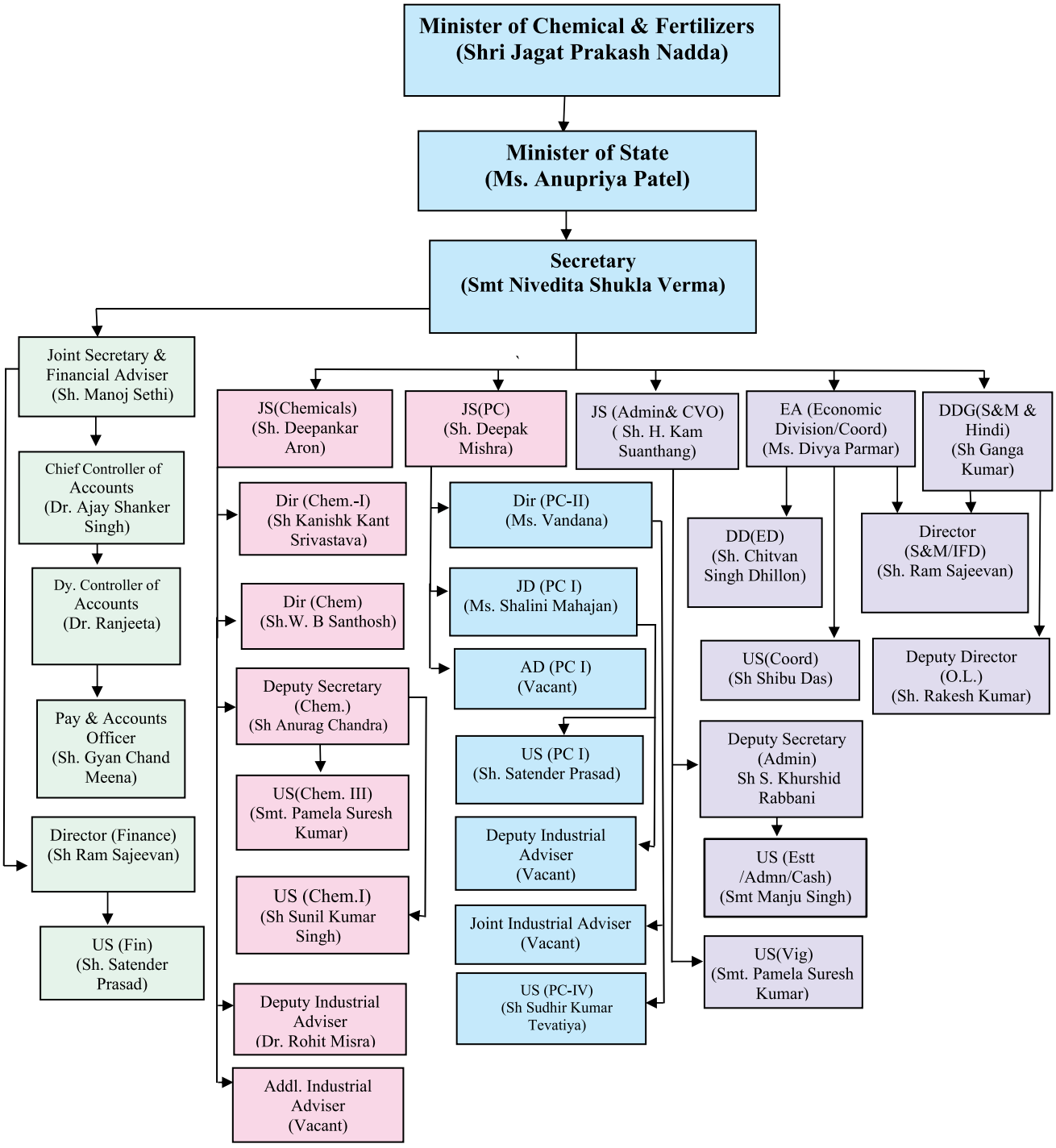
GROUP TOTAL	**2458.01**	**2676.51**	**2691.01**	**2192.46**	**2364.23**	**2318.32**	**2531.29**	**2510.61**	**3.4**
TOTAL PETROCHEMICALS (A+B+C)	**50438.76**	**50612.40**	**50779.10**	**37518.55**	**43524.13**	**42159.38**	**44588.52**	**40291.87**	**1.8**

Source: *The source of Production and Installed Capacity of Chemicals and Petrochemicals products (which are being monitoring by Statistics & Monitoring Division (S&M) of DCPC) is MPRs received from manufacturers under large and medium scale units only.*

Note: 1. ** Combined Installed Capacity of both LLDPE & HDPE.*

Note: 2 ***Combined Installed Capacity of N-6, N6,6, PBT and Poly carbonate*

ORGANISATIONAL CHART OF DEPARTMENT OF CHEMICALS & PETROCHEMICALS (As on 08.07.2024)



Chem: Chemicals
PC: Petrochemicals
Vig: Vigilance
O.L: Official Language
Coord : Coordination
S&M : Statistics & monitoring

भारत 2023 INDIA

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