

**EXECUTIVE SUMMARY OF DRAFT EIA**

**NAME OF THE COMPANY  
M/S. CHEMPLAST SANMAR LIMITED.**

**PROPOSED EXPANSION OF SYNTHETIC ORGANIC CHEMICALS  
& PESTICIDE SPECIFIC INTERMEDIATES (FROM 1601.4  
MT/ANNUM TO 20031.4 MT/ANNUM) MANUFACTURING IN  
EXISTING UNIT**

**At**

**S.F**

**No.5,7/1,2,3A,3B,8/1,2A,2B,9/1,2,3,10/1,2,3A,3B,4,12/1A,  
1B,13/1,14/1A,2A,**

**Suligunta Village, Berigai 635105. Shoolagiri Taluk,  
Krishnagiri District, Tamil Nadu, India.**

**“A” CATEGORY- 5(b) PESTICIDES INDUSTRY AND PESTICIDE  
SPECIFIC INTERMEDIATES (EXCLUDING FORMULATIONS) &  
5(f) SYNTHETIC ORGANIC CHEMICALS INDUSTRY**

**Total Plot Area: 16.64 Hectors**

**Complied as per ToR Obtained vide**

**Tor Letter No.J-11011/104/2009-IA-II(I) ;**

**Dated 10<sup>th</sup> December, 2022**

## 1.0 INTRODUCTION

Chemplast Sanmar is over fifty years old and is a part of the SHL Chemicals Group, which in turn is a constituent of the Sanmar Group, one among the oldest and most prominent corporate groups in South India. It is a major manufacturer of Specialty Chemicals such as Specialty Paste PVC resin and Custom Manufactured Chemicals for agro-chemical, pharmaceutical and fine chemicals sector. The company also produces other chemicals such as Caustic Soda, Chlorochemicals, Hydrogen Peroxide, Refrigerant gas and Industrial Salt. The manufacturing facilities are located at Mettur, Berigai and Vedaranyam in Tamil Nadu and Karaikal in the Union Territory of Puducherry.

Chemplast Sanmar Limited, is a leading supplier of intermediates for global Agrochemical, Pharmaceutical and Fine Chemical innovators. These intermediates involve complex multi-step synthesis using unique chemistries.

The manufacturing facility is located at Berigai, Tamil Nadu.

### Organic Chemicals

- Custom manufacturing of organic intermediates supplying into Pharmaceutical, Agrochemical and other fine chemical applications.
- Exclusive custom development and manufacturing of key intermediates
- Organic synthesis building blocks with capacity ranging from 100 kgs to 100's of MTPA

### Phyto Chemicals

- Manufactures Active Pharmaceutical Ingredients (API) extracted from locally available biomass.
- Phyto Chemical APIs are sold globally to the Pharmaceutical industry.

## 2.0 PROJECT DESCRIPTION

**M/s. Chemplast Sanmar Limited**, Proposed Synthetic Organic Chemicals & Pesticide Specific Intermediates (From 1601.4 MT/Annum to 20031.4 MT/Annum) Manufacturing in Existing Unit AT S.F No.5,7/1,2,3A,3B,8/1,2A,2B,9/1,2,3,10/1,2,3A,3B,4,12/1A,1B,13/1,14/1A,2A, Suligunta Village, Berigai 635105. Shoolagiri Taluk, Krishnagiri District, Tamil Nadu, India.

The reason of applying in category A [5(b) & 5(f)] Environmental Clearance at MoEF & CC, New Delhi.

- Chemplast Sanmar Limited has proposed for the Pesticide Industrial Product [Sector-17; 5(b)],
- Unit is located outside Industrial estate, &
- Inter-state boundary was there within 10 Kms from the existing project site (i.e. Karnataka state boundary at 0.89 km from the project site)

**M/s. Chemplast Sanmar Limited, Berigai, Tamil Nadu** is located at longitude 77°59'9.12"E and latitude 12°48'14.27"N. The area of the project site overlaid on Google earth image is shown in Figure 1.

Land area of project is 16.64 ha. and this land is developed and used as a non agricultural activity. The buildings are designed considering seismic zone II. The land is plain terrain – no scope of landslide.

There is no protected area, important or sensitive species within 15 kms from the proposed project boundary. Hosur City is about 22 kms away and has a population of about 4.95 lakh.

#### **Corner Geographic Coordinates of Proposed Project**

12°48'21.69"N 77°59'2.03"E  
12°48'18.20"N 77°59'14.32"E  
12°48'17.79"N 77°59'19.40"E  
12°48'14.08"N 77°59'18.40"E  
12°48'10.76"N 77°59'18.31"E  
12°48'6.70"N 77°59'16.68"E  
12°48'13.67"N 77°58'57.08"E

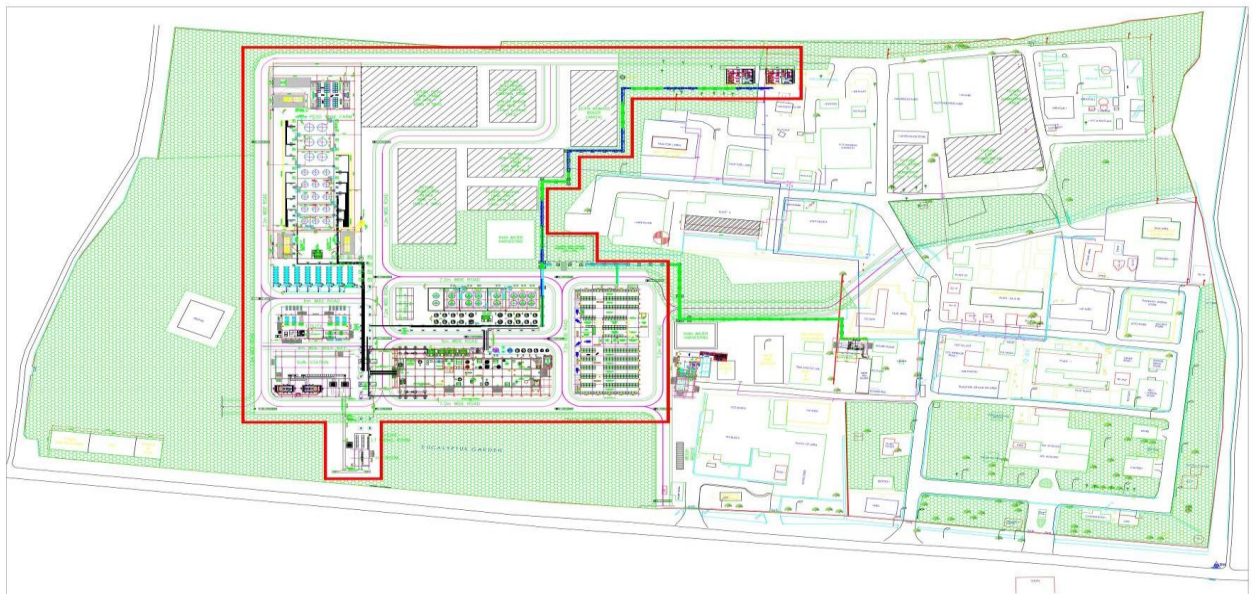
#### **Site Connectivity to the Project Area**

<b>Sr. No.</b>	<b>Nearest Infrastructure Feature</b>	<b>Distance from Project Area</b>
1	Hosur Railway Station	20.28 km South - West
2	National Highway NH-44	14.50 km South - West
3	State Highway SH-17C	7.56 km North-West
4	Hosur town	22 km South - West
5	Krishnagiri District Head quarter	40 km South - East
6	Bengaluru International Airport	52.41 Km North-West
7	Ponnaiayr River	11.35 km South-West



Figure.1



### Plant Layout



### Legend:

-  Green Belt area
-  Project area

## 2.1 PRODUCT AND CAPACITY

### LIST OF PRODUCTS ALONG WITH THEIR PRODUCTION CAPACITY

S.No	PROPOSED PRODUCTS LIST FOR EC	CAS No.	LD50	As per Existing CTE (MTPA)	Additional (MTPA)	Total Proposed (MTPA)	Category
<b>A</b>	<b>PHYTO CHEMICALS</b>						
1	COLCHICINE	64-86-8	5.87 mg/kg	1.4	0	1.4	5(f)
2	THIOCOICHICOSIDE	602-41-5	300 mg/kg				5(f)
<b>B</b>	<b>ORGANIC CHEMICALS</b>						
3	2-(1-CYLCOHEXENYL)LETHYLAMINE (CHEA)	3399-73-3	2.5 mg/kg	1600	18400	20000	5(f)
4	3-[1,3,3-TRIS-(2-CARBOXY-ETHYL)-2-OXO-CYCLOHEXYL]-PROPIONIC ACID (T4C)	5107-67-5	36 mg/kg				5(f)
5	SUBSTITUTED ARYL ALKYL AMINE	3625-06-7	1540 mg/kg				5(f)
6	2-AMINO-2-PHENYLBUTYRIC ACID SODIUM SALT /METHYL 2-(N,N-DIMETHYLAMINO)-2-PHENYLBUTYRATE (TR1600/TR1400)	94133-84-3 /39068-93-4	36 mg/kg				5(f)
7	4-CHOL-O-BUTYL VERATRATE	69788-75-6	1540 mg/kg				5(f)
8	4-(2-AMINOETHYL)-2-METHOXYPHENOL (AE PHENOL)	554-52-9	5000 mg/kg				5(f)
9	METHYL-2-PHENOXY ISOBUTYRATE	103-60-6	5000 mg/kg				5(f)

10	(4R)- 2- OXOOXAZOLIDIN E -4- CARBOXYLIC ACID (COX)	83841 -00-3	5000 mg/kg				5(f)
11	4-t BUTYLPHENYLAC ETONITRILE	3288- 99-1	236 mg/kg				5(f)
12	1-BROMO-3,5- DICHLOROBENZE NE (DCBB)	19752 -55-7	1070 mg/kg				5(f)
13	4-CHLORO-2- NITRO BENZOIC ACID	6280- 88-2	71 mg/kg				5(f)
14	4-BROMO PHENYL PROPANOL (BPP)	25574 -11-2	1020 mg/kg				5(f)
15	2-CHLORO-5- CHLOROMETHYL- 1,3-THIAZOLE (CCMT)	10582 7-91-6	1020 mg/kg				5(f)
16	TETRACHLORO BUTYRIC ACID (TCBA)	97055- 35-1	2940 mg/kg				5(f)
17	IONOPHOR	13333 8-85-9	88 mg/kg				5(f)
18	4-BROMO-2- FLUORO HYDROXY BIPHENYL (BFB)	41604 -19-7	1540 mg/kg				5(f)
19	PARA METHYL PHENCYL CHLORIDE (PMPC)	2196- 99-8	8750 mg/kg				5(f)
20	SODIUM 4-(2,4- DICHLOR M- TOLUOYL)-1,3-DI METHYL -5- PYRAZOLATE (MY710Na)	17234 3-40-7	8750 mg/kg				5(f)
21	2- TRIFLUOROMETH YL BENZENE SULFONAMIDE (TBSA)	1869- 24-5	180 mg/kg				5(f)
22	METHYL CARBAZATE	6294- 89-9	5000 mg/kg				5(f)

23	TETRALONE IMINE	79560 -20-6	810 mg/kg				5(f)
24	4-[2(4-CHLORO- 2,6- DIMETHYLPHENY L)ACETTYL]METH YLAMINO]-1- METHOXY-N- PHENYLPIPERIDIN -4-CARBOXAMIDE (DIAMIDE)	16444 59-63- 1	5000 mg/kg				5(f)
25	3(2,2,2- TRIFLUOROETOX Y)2-PYRIDINE SULFONAMIDE SODIUM SALT (SULFONAMIDE)	22760 5-94-9	5000 mg/kg				5(f)
26	5-CHLORO-8- HYDROXY- QUINOLINE (CHQ)	130- 16-5	5000 mg/kg				5(f)
27	PHENYLGUANIDI NE CARBONATE (PGC)	14018 -90-7	1000 mg/kg				5(f)
28	FE (III) ACETYL ACETANOATE	14024- 18-1	1872 mg/kg				5(f)
29	MANGANESE(II)H EXACYANOMANG ANATE(II)SODIU M SALT (ANODE)	Not availa ble	1020 mg/kg				5(f)
30	IRON(II)MANGAN ESE(II) HEXACYANOFERR ATE(II) SODIUM SALT TETRADECAHYDR ATE (CATHODE)	Not availa ble	1020 mg/kg				5(f)
31	1-CHLORO-3- NITROBENZENE	121- 73-3	1000 mg/kg	0			5(f)
32	2,4,6- TRICHLORO ANILINE	634- 93-5	1000 mg/kg				5(f)
33	PIVALOYL CHLORIDE	3282- 30-2	5000 mg/kg				5(f)
34	5-CHLORO VALEROYL CHLORIDE	1575- 61-7	1000 mg/kg				5(f)

35	4-FLUORO PHENYL ACETIC ACID	405- 50-5	5000 mg/kg				5(f)
36	4-BROMO FLUOROBENZENE	460- 00-4	2700 mg/kg				5(f)
37	3- FLUOROTOLUENE	352- 70-5	7000 mg /kg				5(f)
38	4- FLUOROTOLUENE	352- 32-9	7000 mg /kg				5(f)
39	ORTHO NITRO ANISOLE	91-23- 6	2000 mg/kg				5(f)
40	PARA NITRO ANISOLE	100- 17-4	2300 mg/kg				5(f)
41	O-CHLORO P-NITRO TOLUENE	121- 86-8	1400 mg/kg				5(f)
42	3-AMINO- 4- METHYL BENZOIC ACID METHYL ESTER	40872- 87-5	1700 mg/kg				5(f)
43	3-AMINO 4- METHYL BENZOIC ACID ISOPROPYL ESTER	21447- 47-2	2000 mg/kg				5(f)
44	5-AMINO-2- METHYL BENZENE SULPHONIC ACID PHENYL ESTER	10893 39-15- 0	1400 mg/kg				5(f)
45	(3- AMINOPHENYL) BENZENESULFON ATE	26408- 93-5	1400 mg/kg				5(f)
46	4 -AMINO BENZOIC ACID METHYL ESTER	619- 45-4	1700 mg/kg				5(f)
47	2- FLUOROANISOLE	321- 21-8	3700 mg/kg				5(f)
48	4- FLUOROANISOLE	459- 60-9	3700 mg/kg				5(f)
49	2- PHENOXYETHYLA MINE	1758- 46-9	800 mg/kg				5(f)
50	SPIROPIDION (SPID)	12290 23-00- 0	1000 mg/kg				5(b)



51	4-AMINO BENZAMIDE	2835- 68-9	1500 mg/kg				5(f)
52	P-TOLUIDINE	106- 49-0	1400 mg/kg				5(f)
53	M-ANISIDINE	536- 90-3	1400 mg/kg				5(f)
54	4-CHLORO,2 AMINO PHENOL (4-CAP)	95-85- 2	1400 mg/kg				5(f)
55	HYDROXY ESTER (HES)	27513- 35-5	1400 mg/kg				5(f)
56	PARA CHLORO PHENYL GLYCINE (PCPG)	6212- 33-5	1400 mg/kg				5(f)
57	DICHLOROFLUOR OBROMO BENZENE (DCFBB)	17318- 08-0	1400 mg/kg				5(f)
58	4-ACETYL-2- METHYL BENZOIC ACID (AMBA)	55860- 35-0	1400 mg/kg				5(f)
<b>C</b>	<b>R&amp;D PRODUCTS</b>						
	R&D and Pilot scale Products			00	30	30	
	<b>Total</b>			<b>1601.4</b>	<b>18430</b>	<b>20031.4</b>	
<b>D</b>	<b>BY-PRODUCTS</b>						
1	Dil. Hydrochloric Acid			1050	12090	13140	
2	Dil. Sulphuric Acid			750	8630	9380	
3	Dil. Acetic acid			00	22000	22000	
4	Potassium salt			00	11400	11400	

## 2.2 WATER REQUIREMENT, WASTE WATER GENERATION AND TREATMENT

- The Total water requirement is 1207.5 KL/Day. Out of that 207.5 KLD ground water for which NOC from CGWA/PWD available and remaining 1000 KLD applied to get from government water source.
- The total wastewater generation will be 705 KL/Day. Industrial process wastewater = 600 KL/Day + washing = 75 KL/Day + Boiler/cooling = 30 KL/Day). and will be segregated into two stream High COD Stream & Low COD stream.
  - **Low COD stream:** Low COD effluent (105 KL/Day) will be treated by Biological treatment method and followed by conventional wastewater treatment system and the pass through RO system.
  - **High TDS Stream:** Neutralized concentrate effluent (600 KL/Day) and rejects from RO (225 KL/Day) will be evaporated in multi effective evaporator (MEE). The treated wastewater will be totally recycled and the solid waste generated will be disposed to TSDF (Common disposal Facility).
  - Domestic wastewater (100 KL/Day) will send to STP and Reuse in domestic and gardening purpose after treatment.

## 2.3 AIR POLLUTION SOURCE AND CONTROL MANAGEMENT

### FLUE GAS EMISSION RATE EMISSION FROM EACH UTILITY

SR. no.	Source of emission With Capacity	Stack Height (meter )	Name of the fuel	Quantity of Fuel MT/hr & MT/Day	Type of emissions i.e. Air Pollutants	APCM
<b>EXISTING</b>						
1	Boiler-1 (9 TPH)	40	Furnace Oil	8 MT/Day	SOX,NOX,SP M,CO	Mechanical Dust collector ,Stack
2	D.G set (600 KVA	12	HSD	80lit/Hr	SOX,NOX,SP M,CO	Stack
3	D.G set (600 KVA)	12	HSD	80lit/Hr	SOX,NOX,SP M,CO	Stack
4	D.G set (750 KVA)	12	HSD	90lit/Hr	SOX,NOX,SP M,CO	Stack
5	DG (320 KVA)	9.8	HSD	40 lit/Hr	SOX,NOX,SP M,CO	Stack
6	D.G Set (600 KVA)	12	HSD	80lit/Hr	SOX,NOX,SP M,CO	Stack
7	D.G Set (600 KVA)	12	HSD	80lit/Hr	SOX,NOX,SP M,CO	Stack
8	Thermic Fluid Heater 1 Lakh Kcal/Hr	9	HSD	20 lit/hr	SOX,NOX,SP M,CO	Stack

9	Thermic Fluid Heater 1 Lakh Kcal/Hr	9	HSD	20 lit/hr	SOX,NOX,SP M,CO	Stack
<b>PROPOSED</b>						
10	Boiler-1 (50 TPH)	40	Briquettes	250 MT/Day	SOX,NOX,SP M,CO	Mechanical Dust collector ,Stack or ESP
11	Boiler-1 (50 TPH)	40	Furnace Oil	90 MT/Day	SOX,NOX,SP M,CO	Mechanical Dust collector ,Stack
12	DG set -2000KVA	30	HSD	400 lit/hr/ DG set	SOX,NOX,SP M,CO	Stack
13	DG set -2000KVA	30	HSD	400 lit/hr/ DG set	SOX,NOX,SP M,CO	Stack
14	DG set -2000KVA	30	HSD	400 lit/hr/ DG set	SOX,NOX,SP M,CO	Stack
15	DG set -2000KVA	30	HSD	400 lit/hr/ DG set	SOX,NOX,SP M,CO	Stack
16	DG set -2000KVA	30	HSD	400 lit/hr/ DG set	SOX,NOX,SP M,CO	Stack
17	Thermic Fluid Heater 2 Lakh Kcal/Hr	9	HSD	40 lit/hr	SOX,NOX,SP M,CO	Stack
18	Thermic Fluid Heater 2 Lakh Kcal/Hr	9	HSD	40 lit/hr	SOX,NOX,SP M,CO	Stack

#### DETAILS OF PROCESS VENT

Sr. no.	Source of emission	Type of emission	Stack/Vent Height (meter)	APCM
<b>EXISTING</b>				
1	Scrubber at Plant - I	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	6.1	Wet Alkali Scrubber,Stack

2	Scrubber at Plant -II	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
3	Scrubber at Plant - II	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
4	Scrubber at Plant - II	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	15	Wet Alkali Scrubber,Stack
5	Absorber at Plant - I	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	4	Wet Alkali Scrubber,Stack
6	Scrubber at R & D plant	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	12	Wet Alkali Scrubber,Stack
7	Phyto Plant Scrubber(Process)	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	19	Wet Alkali Scrubber,Stack
8	Scrubber at Plant - II	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	15	Wet Alkali Scrubber,Stack
9	Scrubber at Pilot Plant	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	6.1	Wet Alkali Scrubber,Stack
10	Scrubber at plant IV	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
11	Scrubber at plant IV	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
12	Scrubber at plant IV	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
13	Scrubber at Plant - V	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
14	Scrubber at Plant - V	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
15	Scrubber at Plant - V	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
16	Scrubber at Plant - V	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
<b>PROPOSED</b>				
17	Scrubber -1	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
18	Scrubber -2	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
19	Scrubber -3	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
20	Scrubber -4	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
21	Scrubber -5	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack

22	Scrubber -6	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
23	Scrubber -7	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
24	Scrubber -8	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
25	Scrubber -9	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
26	Scrubber -10	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
27	Scrubber -11	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
28	Scrubber -12	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet Alkali Scrubber,Stack
29	Scrubber -13	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
30	Scrubber -14	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
31	Scrubber -15	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
32	Scrubber -16	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
33	Scrubber -17	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
34	Scrubber -18	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
35	Scrubber -19	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
36	Scrubber -20	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
37	Scrubber -21	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
38	Scrubber -22	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
39	Scrubber -23	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
40	Scrubber -24	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack
41	Scrubber -25	SO <sub>x</sub> ,NO <sub>x</sub> ,CO	17	Wet scrubber with stack

## 2.4 HAZARDOUS WASTE

11 Categories of Hazardous/Solid Wastes shall be generated from this Unit.

Sr. No	Name of Waste	Source of Generation	Cat No.	Existing Quantity (MT/Year)	Total Proposed Quantity (MT/Year)	Disposal Method
1.	Empty barrels/containers/liners contaminated with hazardous chemicals/wastes	Storage & handling of Raw Materials	Sch-I/33.1	40	500	Collection, Storage, Transportation, Decontamination & Disposal to TNPCB Authorized Recyclers (Recyclable)
2.	Used / Spent Oil	Equipment & Machineries	Sch-I/5.1	10	200	Collection, Storage, Transportation, Decontamination & Disposal to TNPCB Authorized Recyclers (Recyclable)
3.	Chemical sludge from waste water treatment	In-house ETP & MEE	Sch-I/35.3	2500	43000	Collection, Storage, Transportation & disposal to Common TSDF site by following protocol of Hazardous Waste Rule – 2016.
4.	Spent solvents	Process	Sch-I/28.6	350	20000	Collection, Storage, Transportation, Decontamination & Disposal to TNPCB Authorized Recyclers (Recyclable)
5.	Distillation residues	Process	Sch-I/20.3	20	4000	Collection, Storage, Transportation & disposal to Common TSDF site by following protocol of Hazardous Waste Rule – 2016.
6.	Contaminated aromatic, aliphatic or naphthenic solvents may fit for reuse		Sch-I/20.1	6	10000	Collection, Storage, Transportation & disposal to Common TSDF site by following protocol of Hazardous Waste Rule – 2016

7.	Spent catalyst	Process	Sch-I/28.2	1	40	Collection, Storage, Transportation for Regeneration, Recovery and Reuse. (Recyclable)
8.	Contaminated cotton rags or other cleaning materials		Sch-I/33.2	2	40	Collection, Storage, Transportation & disposal to Common TSDf site by following protocol of Hazardous Waste Rule – 2016.
9.	Spent Carbon or Filter medium	Process	Sch-I/36.2	NA	4000	Collection, Storage, Transportation & disposal to Common TSDf site / Co-processor by following protocol of Hazardous Waste Rule – 2016.
10.	Process wastes or residues	Process	Sch-I/29.1	NA	30000	Collection, Storage, Transportation & disposal to Co-processor by following protocol of Hazardous Waste Rule – 2016.
<b>Non Hazardous waste</b>						
11.	Fly Ash	Utility	--	--	18250	Collection, Storage, Transportation and sent for brick manufacturer and/or in cement industries.

## 2.5 GREEN BELT

Total 16.64 Hectares land area is available at site; out of this area about 5.34 Hectares (32 %) area is covered as greenbelt. The company has planted total 16250 nos. of trees for green belt within the plant premises. Company will plant additional 1000 Nos. of trees (in 0.54 Hectors area) for green belt (3.33 %) within the plant premises.

## 2.6 POWER REQUIREMENTS & FUEL REQUIREMENT

### Power Requirement:

Sr. No.	Description	Existing Requirement ( KVA)	Proposed Requirement ( KVA)	TOTAL Requirement ( KVA)
1	State Electricity Department	2000	12000	14000
2	D.G. Set	3470	10000 (5 x 2000 kVA)	13470

**Note: DG Set will be kept for emergency power back up.**

**Fuel Requirement:**

Sl. No.	Type of Fuel	Existing ( MT/day)	Proposed ( MT/day)	Total ( MT/day)
1	Furnace Oil	8	90	98
2	Briquettes	00	250	250
3	HSD	1.7	20.3	22
4	LPG	0.008	0.192	0.20

**EMPLOYMENT GENERATION**

Approximately 1350 people [Existing: 350 people + proposed: 1000 people] will be employed to local skilled and unskilled people based on qualification and requirement and preference will be given to local person for fulfilment of the manpower requirement.

**3.0 DESCRIPTION OF THE ENVIRONMENT**

**BASELINE ENVIRONMENTAL STATUS**

The baseline environmental quality has been assessed in the Pre Monsoon Season, 2022 (July, 2022 to September, 2022) in a study area of 10 km radial distance from the project site.

**AIR ENVIRONMENT**

The dispersion of pollutants in the atmosphere is a function of several meteorological parameters viz. temperature, wind speed and direction, mixing depths, inversion level, etc. The ambient air samples were collected and analyzed for Suspended Particulate Matter, Respirable Suspended Particulate Matter (RSPM-PM<sub>10</sub>), Respirable Suspended Particulate Matter (RSPM-PM<sub>2.5</sub>), Sulphur Dioxide (SO<sub>2</sub>), Nitrogen dioxide (NO<sub>x</sub>), Ammonia (NH<sub>3</sub>), Ozone (O<sub>3</sub>), Lead (Pb), Benzene (C<sub>6</sub>H<sub>6</sub>), Benzo (α) Pyrene (BaP), Hydro Carbon (HC), Arsenic (As), Nickel (Ni), & Carbon Monoxide (CO) were monitored at site and nearby villages for identification, prediction, evaluation and assessment of potential impact on ambient air environment.



## SUMMARY

Sr. no.	Criteria Pollutants	unit	Maximum Value ( $\mu\text{g}/\text{m}^3$ )	Minimum Value ( $\mu\text{g}/\text{m}^3$ )	98 Percentile Value ( $\mu\text{g}/\text{m}^3$ )	Prescribed Standard ( $\mu\text{g}/\text{m}^3$ )
1	PM <sub>10</sub>	$\mu\text{g}/\text{m}^3$	59.13	41.71	59.07	100
2	PM <sub>2.5</sub>	$\mu\text{g}/\text{m}^3$	29.71	19.67	29.38	60
3	SO <sub>2</sub>	$\mu\text{g}/\text{m}^3$	10.41	BDL	10.22	80
4	NO <sub>2</sub>	$\mu\text{g}/\text{m}^3$	19.1	13.12	19.05	80
5	O <sub>3</sub>	$\mu\text{g}/\text{m}^3$	14.54	10.51	14.22	100

The PM<sub>10</sub> and PM<sub>2.5</sub> concentrations at all the AAQM locations were primarily caused by local phenomena including industrial & vehicular activities and natural dust getting air borne due to manmade activities and blowing wind. PM<sub>10</sub> and PM<sub>2.5</sub> concentrations were observed below stipulated standards of CPCB for Residential & Other Area at all air quality monitoring locations during the monitoring period. Results of all parameters are found within limit.

## WATER ENVIRONMENT

11 nos. of ground water and 2 nos. of surface water samples were collected from the study area. These samples were analyzed for physic-chemical parameters to ascertain the baseline status in the existing surface water and ground water bodies. Samples were collected during the study period of July-2022 and analyzed as per the Standard Methods of Water and Wastewater Analysis (APHA).

## BASELINE GROUND WATER QUALITY

Sr. No.	Criteria Pollutants	Unit	Maximum Value	Minimum Value	Desirable Limit	Maximum Permissible Limit
1.	pH	pH Scale	7.63	7.22	6.5-8.5	No Relaxation
2.	Total Dissolved Solids	mg/l	1012	578	500	2000
3.	Total Suspended Solids	mg/l	<2	<2	--	--
4.	Total Hardness	mg/l	470	240	200	600
5.	Fluoride	mg/l	0.63	0.37	1	1.5
6.	Chlorides	mg/l	254	147	250	1000
7.	Zinc	mg/l	0.14	0.03	5	15
8.	Total Alkalinity	mg/l	440	290	200	600

## BASELINE SURFACE WATER QUALITY

Sr. No.	Criteria Pollutants	Unit	Maximum Value	Minimum Value	Classification of inland water body
1.	pH	pH Scale	8.07	7.81	A
2.	DO	mg/l	5.6	5.3	A
3.	COD	mg/l	24	21	A
4.	BOD	mg/l	3.6	3.3	B
5.	Total Dissolved Solids	mg/l	424	356	--
6.	Total Suspended Solids	mg/l	6	4	--
7	Total Hardness	mg/l	180	130	--
8	Fluoride	mg/l	0.27	0.23	--
9	Chlorides	mg/l	127	96	--
10	Zinc	mg/l	0.16	0.14	--
11	Total Alkalinity	mg/l	160	152	--
12	Total Coliform	MPN/100ml	2	<2	--

## NOISE ENVIRONMENT

The noise monitoring was carried out at 11 locations in day time during (6 am to 9 pm) and at night time (9 pm to 6 am) in the study area covering all the areas i.e. industrial and residential as mentioned in Noise (Pollution and Control) Rules, 2000. Hourly Equivalent noise levels Leq (day) and Leq (night) were measured at each monitoring locations. Monitoring was done on 11-07-2022 TO 16-07-2022 during day and night time was carried out at all the locations.

Sr. No.	Parameter	Unit	Maximum Value	Minimum Value	Prescribed Standard
1	Leq (Day)	dB (A)	58.2	46.1	75
2	Leq (Night)	dB (A)	49.2	41.8	70

Based on noise level data obtained during the survey, Noise level varied at some place at different times due to fluctuations in traffic movements as well as in residential due to nearest Industrial / commercial and domestic activities going on in the study area. It is

interpreted that noise levels of Project site and all villages are within the standard norms prescribed by MoEF&CC.

#### LAND ENVIRONMENT

Soil samples were collected from eleven locations during 11-7-2022 to 16-7-2022 within the study area to assess its physico-chemical characteristics.

Based on the soil analysis report, the following can be concluded:

Sr. No.	Criteria Pollutants	Unit	Maximum Value	Minimum Value
1.	pH	pH Scale	7.48	6.59
2.	Nitrogen (N)	mg/Kg	178	96
3.	Phosphorus (P)	mg/Kg	77	39.3
4.	Potassium (K)	mg/Kg	394	258
5.	Electric Conductivity	mS/cm	0.218	0.077
6.	Calcium	mg/kg	18.2	14.8
7.	Magnesium	m.eq/100g	5.06	3.29
8.	Organic Carbon as C	%	1.13	0.40

#### 4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

##### 4.1 AIR ENVIRONMENT

The proposed air emissions at M/s. Chemplast Sanmar Limited. are SPM, SO<sub>2</sub>, NO<sub>2</sub>, & CO. The impact on air quality due to the proposed project is estimated using AERMOD View Gaussian Plume Air Dispersion Model.

Baseline monitoring Level of SPM is 88.88 µg/m<sup>3</sup>, Max. incremental GLC of SPM – 0.41343 µg/m<sup>3</sup> will increase and predicted level SPM will be 89.29343 µg/m<sup>3</sup>. Level of SO<sub>2</sub> and NO<sub>x</sub>, after prediction also were found within NAAQS.

The fugitive emissions control measures:

- The Solvent used in the processes is handled in a closed loop and in process materials are stored in drums will be kept under structured roof.
- Equipment where volatile solvents distilled is provided with reflux condensers and after coolers and the receivers are connected to the scrubber.
- Pumps of compatible MOC with Single and Double Mechanical seals are used for handling corrosive and hazardous chemicals
- Periodic preventive maintenance and inspection is done for all the equipments by the in-house Engineering team and LDAR study carried yearly once by External lab
- All the rotating equipment like pumps are installed with Mechanical Seals to arrest any sort of emissions.

- Proper ventilation in storage area is ensured and all materials are stored in suitable packing to prevent contamination of air due to particulates & volatile emissions from storage area.
- All the Flange joints of the pipe lines which carry solvents are covered with flange guards.
- Adequate Dust Suppression System including Water Sprinkling System is installed for control of fugitive emission during loading of raw material and product.
- Work place monitoring within plant, storage & other area and AAQM will be done as per 'Post project monitoring plan' as well as regulatory requirement as per factory act.
- Properly designed method & practices of transportation, storage & handling of materials are established and maintained along with necessary facilities to reduce airborne particle of materials and VOCs.

#### **4.2 WATER ENVIRONMENT**

Water requirement will meet through the CGWA and TWAD. However, record of water consumption for different usages should be maintained.

The following measures would be taken to minimize the water usage in the operational phase:

- ✓ Endeavor to reduce the actual process water consumption by way of improvement in operation of processing units.
- ✓ Water conservation practice shall be done by recycling of treated water. The Effluent water will be completely recycled in Plant to reduce the fresh water demand.
- ✓ Water saving by shower head flow controls, spray taps and faucet aerators and photo-sensitive taps.
- ✓ Exploring other options of reusing the treated effluent besides fire water make up and cooling tower makeup
- ✓ The treated domestic water will be reuse for gardening purpose to reduce fresh water demand.

#### **4.3 LAND ENVIRONMENT**

- During the site clearing, excavated earth shall be stored in stockpiles and covered with plastic/tarpaulin sheets or stored in a closed room and reused for landscape development along the corridor.
- To avoid water logging, gradient of the area will be maintained during leveling.
- The construction material and diesel /oil to be used for various construction activities will be stored in designated storage yards to reduce the spills into unwarranted areas.
- Segregation, collection, storage and disposal of waste material generated during the construction phase to minimize its impact on soil quality.
- The construction debris as well as debris from demolition work will be utilized within the site for leveling purpose and base course preparation of internal roads.

#### **4.4 SOCIO-ECONOMIC ENVIRONMENT**

- The activities of the proposed expansion in the production capacity will produce some improvements in the socio-economic levels in the study area.
- The unit will generate the local employment for the proposed project.
- Better literacy rates are possible due to assumed better economic conditions of the people.
- Project will lead to development of ancillary industries and an overall economic growth of nearby towns to supplement the population of the area.
- Project proponent will ensure to connect even last people with the infrastructural facility like educational, health, road etc in the locality.
- Other needs and social-economic aspects of local inhabitants will be dealt with CSR activities & CER activities in the region.
- The existing plant activities have already provided employment to persons of different skills and trades.

#### **4.5 ECOLOGICAL ENVIRONMENT**

There is no protected area, important or sensitive species within 10 kms from the proposed project boundary. There are no significant aquatic bodies & no forest land involved within the study area. The treated effluents will not be discharged into any surface water streams. Hence, no impact is envisaged from the proposed expansion project on aquatic bodies. 33% of greenbelt is already developed around the periphery of the projects site which will have positive impact since it will support various Faunal & Floral diversity. It helps in purifying the air and reduce noise pollution. Greenbelt will increase the aesthetic value of the site and increase employment. Hence, the propose expansion project will create positive impact on EB environment by increasing the green area of the region.

#### **5.0 ANALYSIS OF ALTERNATIVES SITE**

No other sites were considered for the proposed expansion project for the following reasons,

- Land of the existing site is classified for the industry usage.
- Adequate land is available adjacent to the existing site for the expansion.
- No rehabilitation or resettlement of local people required.
- All the existing amenities like transportation of materials, fuels, waste disposal, etc... Can continue as such for expansion project

#### **6.0 ENVIRONMENT MONITORING PROGRAM**

The objective of monitoring is:

- To verify the result of the impact assessment study in particular with regards to new developments.

- To follow the trend of parameters which have been identified as critical
- To check or assess the efficiency of controlling measures
- To ensure that new parameters, other than those identified in the impact assessment study, do not become critical through the commissioning of new project.

<b>Environmental Component</b>	<b>Parameters</b>	<b>Standards</b>	<b>Frequency</b>
<b>Air Environment</b>			
AAQM at plant site	As prescribed by TNPCB including PM <sub>2.5</sub> , PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>2</sub> , CO	Prescribed by CPCB	Once in a month through NABL Lab.
Stack emission monitoring	Parameters prescribed by TNPCB of Flue Gas emission and Process Gas Emission	Prescribed by TNPCB	Once in a month by NABL Lab.
Fugitive emissions/work place monitoring within the plant side	VOC	Prescribed by TNPCB	Once in a year by external Lab using LDAR study
<b>Water Environment</b>			
Treated effluent water and STP outlet	Parameters prescribed by TNPCB	Water quality Standards	Once in a month by external lab
Ground water quality	Parameters prescribed by TNPCB	Water quality Standards	Once in a month by external lab
<b>Noise Environment</b>			
Ambient Noise at plant site	Noise level in dB(A)	As per National Noise Standards	Once in a Month
<b>Soil Environment</b>			
At plant site	Analysis of pH, conductivity, Sulphates, calcium, magnesium, Cl <sup>-</sup>	--	Once in a year by external lab
<b>Meteorological data</b>			
At plant site	Monitoring of Wind direction & velocity, relative Humidity, temperature and Rain fall	-	Daily basis at in-house

## **7.0 RISK ASSESSMENT**

Risk involves the occurrence or potential occurrence of some accidents consisting of an event or sequence of events. The risk assessment study covers the following:

- Identification of potential hazard area;
- Identification of representative failure cases;
- Visualization of the resulting scenarios in terms of fire and explosion;
- Assess the overall damage potential of the identified hazardous events and the impact zones form the accidental scenarios;
- Furnish the recommendations on the minimization of the worst accident possibilities
- Preparation of Disaster Management Plan;
- Emergency Plan, which includes Occupational and Health Safety Plan;

### **7.1 Fire Prevention Measures**

Following Safety measures are implemented to prevent hazards caused by this project.

- Smoking, ignition, ignition sources etc are strictly prohibited within the premises. A very strict control is exercised in this regard at all times.
- All the tanks, equipment etc are properly earthed and maintained at all times. The earth resistance values are regularly checked and kept within the permissible range.
- At the time of filling of storage tanks and road tankers, special care is exercised to avoid spillage.
- When a storage tank is filled, the tank's level is closely monitored.
- All filling operations are surveyed frequently for possible leaks that may pose a fire hazard.
- Reliable flow meters are provided, wherever required, to prevent overflow.
- The pipelines are inspected periodically.
- Free falling of the product into exercised to avoid overflow, spillage, leakage etc of the products.
- All operations in the installation are done only during general shift hours.
- The well-established color codes are followed for pipelines in the Installation.
- A strict gate entry procedure is formulated and followed. Entry of unauthorized persons is strictly prohibited.
- The road tanker is minimized to the extent possible to avoid static charge build up. The tankers are also earthed to bleed away static charges formed.
- Security watch is provided around tank farm area.
- The persons looking after the various operations are trained and experienced.
- All the staff in the installation are trained in fire-fighting and monthly fire drills are carried out.
- Degreasing / Deseeding is done regularly within the licensed areas.
- All sorts of combustible materials are removed from the premises promptly.

- Work permit system is strictly followed. Critical jobs like hot jobs are carried out only after taking abundant safety precautions under the supervision of competent personnel authorized.
- All the incidents like fire are reported through prescribed formats and investigated. The causes are identified and remedial steps are promptly formulated and implemented.
- Dyke drain valves are kept normally closed. They are opened only to remove water from the dyked areas.
- Drain valves, sampling valves etc are plugged, capped or blinded. Utmost care is
- Proper concrete/tar roads are laid all around the facilities/areas for easy accessibilities. Roads, accessibilities etc are free and unobstructed everywhere.
- All the facilities in the Installation are well laid and also maintained.
- The fire-fighting arrangements are well designed, laid and maintained.
- Good housekeeping is maintained throughout the Installation.

### **8.0 SOCIO-ECONOMIC DEVELOPMENTAL ACTIVITIES**

CER @ 0.25 % of the additional project cost (i.e. 2000 Crore) and CSR will be carried out by the company in the surrounding villages. This fund will be administered by a local area development committee in accordance with the orders of the appropriate Government. This fund will be used for the creation of infrastructure and overall economic development of the project area.

### **9.0 CAPITAL COST FOR ENVIRONMENTAL MANGEMENT**

Total capital investment for the project will be Rs. 2292.398 Crores [Existing: 292.398 Crore + Proposed: 2000 Crore]. Capital cost of air & water pollution control system and environmental monitoring equipments will be Rs. 118.482 Crores.

### **10.0 CONCLUSION**

The EIA study of **M/s. Chemplast Sanmar Limited** has been carried out with respect to the Std. TORs awarded by MoEF&CC, Delhi. All the impacts likely to have an effect on the environment have been identified and efficient/adequate mitigation measures have been proposed for the same.

- The proposed expansion project will provide quality product at lower cost to the users.
- There should be positive impact on the socio-economic condition of the area in terms of direct and indirect employment due to the proposed expansion project.
- Country will save valuable foreign exchange as export of these products by corresponding amount.