

S. M. SAIYAD, IFS  
MEMBER SECRETARY  
SEIAA (GUJARAT)



STATE LEVEL ENVIRONMENT  
IMPACT ASSESSMENT  
AUTHORITY  
GUJARAT

Government of Gujarat

By R P A D

No. SEIAA/GUJ/TOR/5(f)/1122/2019

Date: 30 JUL 2019

Time Limit

Sub: Terms Of Reference to M/s. Shyam Dye Chem for setting up of 'Synthetic Organic Chemicals' manufacturing plant at Plot No. 6919 & 6901, GIDC Ankleshwar, Ankleshwar, Bharuch.

Ref: Your Proposal No: SIA/GJ/IND2/33827/2019.

Dear Sir,

This has reference to your online application dated 24/05/2019 along with Form-I submitted to SEIAA. The project activity is covered in 5(f) and is of 'B' Category.

The SEAC, Gujarat vide their letter dated 10/07/2019 had recommended to the SEIAA, Gujarat, to grant the Terms Of Reference for the above-mentioned project based on its meeting held on 19/06/2019.

The proposal was considered by SEIAA, Gujarat in its meeting held on 11/07/2019 at Gandhinagar. After careful consideration, the SEIAA hereby accords Terms Of Reference to above project under the provisions of EIA Notification dated 14<sup>th</sup> September, 2006. The copy of Terms Of Reference is attached herewith.

With regards,  
Yours sincerely,

(S. M. SAIYAD)  
Member Secretary

Encl: As Above

Issued to:  
M/s. Shyam Dye Chem  
Plot No. 6919 & 6901,  
GIDC Ankleshwar, Ankleshwar,  
Bharuch



**Terms of Reference [ToR] to M/s. Shyam Dye Chem for setting up of expansion in manufacturing plant of 'Synthetic Organic Chemicals' at Plot No. 6919 & 6901, GIDC**

**Ankleshwar, Ankleshwar, Dist. Bharuch.**

Category of the unit: 5(f)

Project status: Expansion

- I. This is in reference to proposal no. SIA/GJ/IND2/33827/2019 dated 24/05/2019 made by project proponent (PP) regarding grant of Terms of Reference [ToR] for preparation of EIA/EMP report.
- II. Project proponent (PP) has submitted Form-1, PFR and relevant details/information.
- III. This is existing unit and now proposes for expansion tabulated as below:

Sr. No.	Products	CAS/CI No.	Quantity, MT/MONTH			End User
			Existing CCA	Proposed	Total After Expansion	
1.	Solvent Dyes (Azo Group)					Utilized to color candles and waxes, ink and inkjets, wood stains and coatings, and a variety of other non-polar, hydrocarbon based materials.
1.1	Solvent Brown 1	11285	3	97		
1.2	Solvent Yellow 72	127450				
1.3	Solvent Oil Orange	2646-17				
1.4	Solvent Oil Red-24	85-83-6				
1.5	Solvent Oil Red-23	85-86-9				
1.5	Solvent Violet-13	81-48-1				
1.6	Solvent Red-111	82-38-2				
1.7	Solvent Red-18	6483-64-3				
1.8	Solvent Green-3	128-80-3				
1.9	Solvent Blue-36	14233-37-5				
1.10	Solvent Blue-35	17354-14-2				
1.11	Solvent Brown-41	1052-38-6				
1.12	Solvent Red-1	1229-55-6				
1.13	Solvent Yellow-2	60-11-7				
2.	Azo Pigment (Organic Yellow Pigment)		0	100		Application:Plastics, Textile, Wool, Silk, Cotton Linen, Printing Ink Food, Paints
				Either / Or		
2.1	Pigment Yellow-1	11680				
2.2	Pigment Yellow-3	11710				
2.3	Pigment Yellow-2	6486-26-6				
2.4	Pigment Orange-14	6837-37-2				
2.5	Pigment Rubin Toner	5281-04-9				
2.6	Pigment Red - 53:1	5160-02-1				
2.7	Pigment Red - 60:1	17418-58-5				
2.8	Pigment Red - 2	6041-94-7				
2.9	Pigment Red - 3	2425-85-6			100	
2.10	Pigment Red - 4	2814-77-9				
2.11	Pigment Red - 8	6410-30-6				
2.12	Pigment Red - 12	6410-32-8				
2.13	Pigment Red - 31	6448-96-0				
2.14	Pigment Red - 32	6410-29-3				
2.15	Pigment Red - 48	7023-61-2				
2.16	Pigment Red - 53	2092-56-0				
2.17	Pigment Red - 57	5281-04-9				
2.18	Pigment Red - 112	6535-46-2				
2.19	Pigment Red - 210	61932-63-6				
2.20	Pigment Yellow- 14	5468-75-7				
2.21	Pigment Yellow -65	6528-34-3				
2.22	Pigment Yellow-12	6358-85-6				
2.23	Pigment Yellow-17	4531-49-1				
2.24	Pigment Yellow-13	5102-83-0				
2.25	Pigment Yellow- 74	6358-31-2				
2.26	Pigment Yellow- 83	5567-15-7				
3.	Basic Dyes		0	100		pulp and paper, alumina, soap and detergents, petroleum
3.1	Bismark Brown	21000		Either/ Or		
3.2	Basic Brown- 1	10114-58-6				



# ANNEXURE-1

3.3	Basic Orange- 2	532-82-1			products and chemical production	
3.4	Basic Violet- 16	6359-49-1				
3.5	Basic Green- 4	2437-29-8				
3.6	Basic Blue- 9	7220-79-3				
3.7	Basic Crayoline	10114-58-6				
4	Acid Dyes		3	97		Dyeing protein fibers
4.1	Acid Orange-II	15510	Either/ Or	Either/ Or		
4.2	Acid Scarlet-3R	10385				
4.3	Acid Blue-7	3486-30-4				
4.4	Acid Blue-1	3844-45-9				
4.5	Acid Violet - 49	1694-09-3				
4.6	Acid Blue - 113	3351-05-1				
4.7	Acid Red - 52	3520-42-1				
4.8	Acid Blue - 3	20262-76-4				
4.9	Acid Blue - 194	93050-78-3				
4.10	Acid Blue - 119	1324-80-7				
4.11	Acid Yellow - 42	5850-35-1				
4.12	Acid Brown -55	5858-51-5				
4.13	Acid Yellow - 11	6359-82-6				
4.14	Acid Red - 88	6359-82-6				
4.15	Acid Yellow - 36	587-98-4				
4.16	Acid Brown - 14	5850-16-8				
4.17	Acid Yellow - 113	3351-05-1				
4.18	Acid Yellow - 49	12239-15-5				
5	Reactive Dyes		3	97	Dyeing of cellulose like cotton or flax	
5.1	Remazole Black	20505	Either/ Or	Either/ Or		
5.2	Remazole Orange	17757				
5.3	Reactive Golden Yellow	--				
5.4	Reactive Red	70210-20-7				
6.	Azo Intermediate				3	97
6.1	Fast Garnet GBC	--				
	Total		3	97	100	

IV. The project falls under Category B of project activity 5(f) as per the schedule of EIA Notification 2006.

V. PP was called for presentation in the SEAC meeting dated 19/06/2019.

VI. Salient features of the project including Water, Air and Hazardous waste management :

Sr. no.	Particulars	Details			
A	Total cost of Proposed Project (Rs. in Crores):	Existing: 0.5 Proposed: 2 Crores Total: 2.5			
B	Total Plot area ( sq. meter)	Existing: 1607.97 Sq. m. Proposed: 0.00 Sq. m. Total: 1607.97 Sq. m.			
	Green belt area ( sq. meter)	Existing: 100 Sq. m. Proposed: 450.69 Sq. m. Total: 550.69 Sq. m.			
C	Employment generation	Existing: 06 Proposed: 24 Total: 30			
D	Water				
i	Source of Water Supply (CIDC Bore well, Surface water, Tanker supply etc...)	GIDC water supply			
	Status of permission from the concern authority.	.....			
ii	Water consumption (KLD)				
		Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD	Remarks
	(A) Domestic	0.5	2.5	3	--
	(B) Gardening	1	1	2.00	--

(C) Industrial				
Process	1.50	26.5	28	Fresh:- 4.5 KLD Recycled:- 23.5 KLD
Washing	2.5	1.5	4	
Boiler	0.50	1.5	2	--
Cooling	--	20	20	Recycled Water :- 20 KLD
Others	--	--	--	--
<b>Industrial Total</b>	<b>4.50</b>	<b>49.5</b>	<b>54</b>	--
<b>Grand Total (A+B+C)</b>	<b>6.00</b>	<b>53</b>	<b>59</b>	<b>Fresh:- 15.5 KLD</b> <b>Recycled:- 43.5 KLD</b>

- 1) Total water requirement for the project: 59 KLD
- 2) Quantity to be recycled: 43.5 KLD
- 3) Total fresh water requirement: 15.5 KLD

**iii Waste water generation (KLD)**

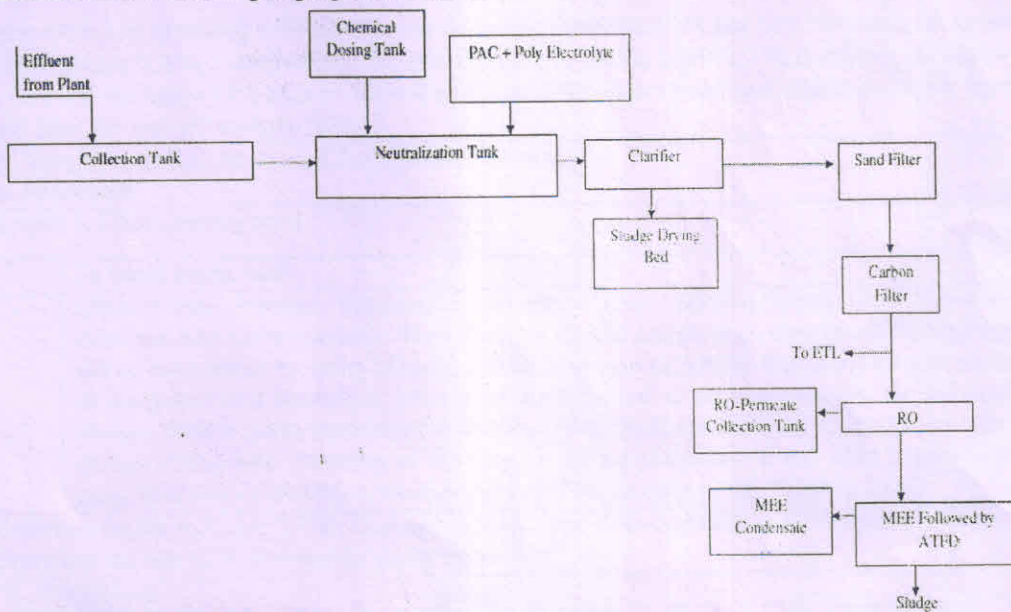
Category	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD
(A) Domestic	0.50	2.5	3.0
(B) Industrial			
Process	1.4	49.6	51
Washing	2.5	1.5	4.00
Boiler	0.1	0.9	1
Cooling	--	3	3
Others	--	--	--
<b>Total Industrial waste water</b>	<b>4.00</b>	<b>55</b>	<b>59</b>

**iv Treatment facility within premises with capacity**

[In-house ETP (Primary, Secondary, Tertiary), MEE, Stripper, Spray Dryer, STP etc..]

- > ETP:- 100 KLD
- > R.O:- 45 KLD
- > MEE:- 20 KLD

Treatment scheme including segregation at source.



Note: (In case of CETP discharge) :

**Management of waste water keeping in view direction under section 18 (1) (b) of the Water (Prevention and Control of Pollution) act, 1974 issued by CPCB regarding compliance of CETP.**



## EXISTING WASTE WATER CHARACTERISTIC

Sr. No	Parameters	Units	Inlet Characteristic	Treated Effluent after Neutralization send to M/s. ETL
1.	p <sup>H</sup>	p <sup>H</sup> Units	5-8	5.5-7.5
2.	TDS in mg/L	mg/Lit	5000-7000	5000-7000
3.	TSS	Mg/Lit	250-300	80-90
4.	C.O.D. in mg/L	mg/Lit	5000-8000	4000-7000

## PROPOSED WASTE WATER CHARACTERISTIC

Sr. No	Parameters	Units	Inlet Characteristic	Treated Effluent after Neutralization & Coagulation & Flocculation	Treated Effluent after Sand Filter & Carbon Filter
1.	p <sup>H</sup>	p <sup>H</sup> Units	5-8	5.5-7.5	5.5-7.5
2.	TDS in mg/L	mg/Lit	4000-8000	4000-8000	4000-8000
3.	TSS	Mg/Lit	200-300	40-50	20-30
4.	C.O.D. in mg/L	mg/Lit	4000-9000	1500-2500	800-1000

Sr. No	Parameters	Units	RO Inlet	RO-Permeate	RO-rejected TO MEE
1.	TDS	mg/Lit	4000-8000	100-150	20000-24000
2.	Total Suspended Solid	mg/Lit	20-30	<5	60-100
3.	Chemical Oxygen Demand	mg/Lit	800-1000	<100	2500-3000

Sr. No	Parameters	Units	MEE Inlet	MEE Condensate	Sludge
1.	TDS	mg/Lit	20000-24000	<100	Sludge containing 10% moisture
2.	Total Suspended Solid	mg/Lit	60-100	<5	
3.	Chemical Oxygen Demand	mg/Lit	2500-3000	<100	

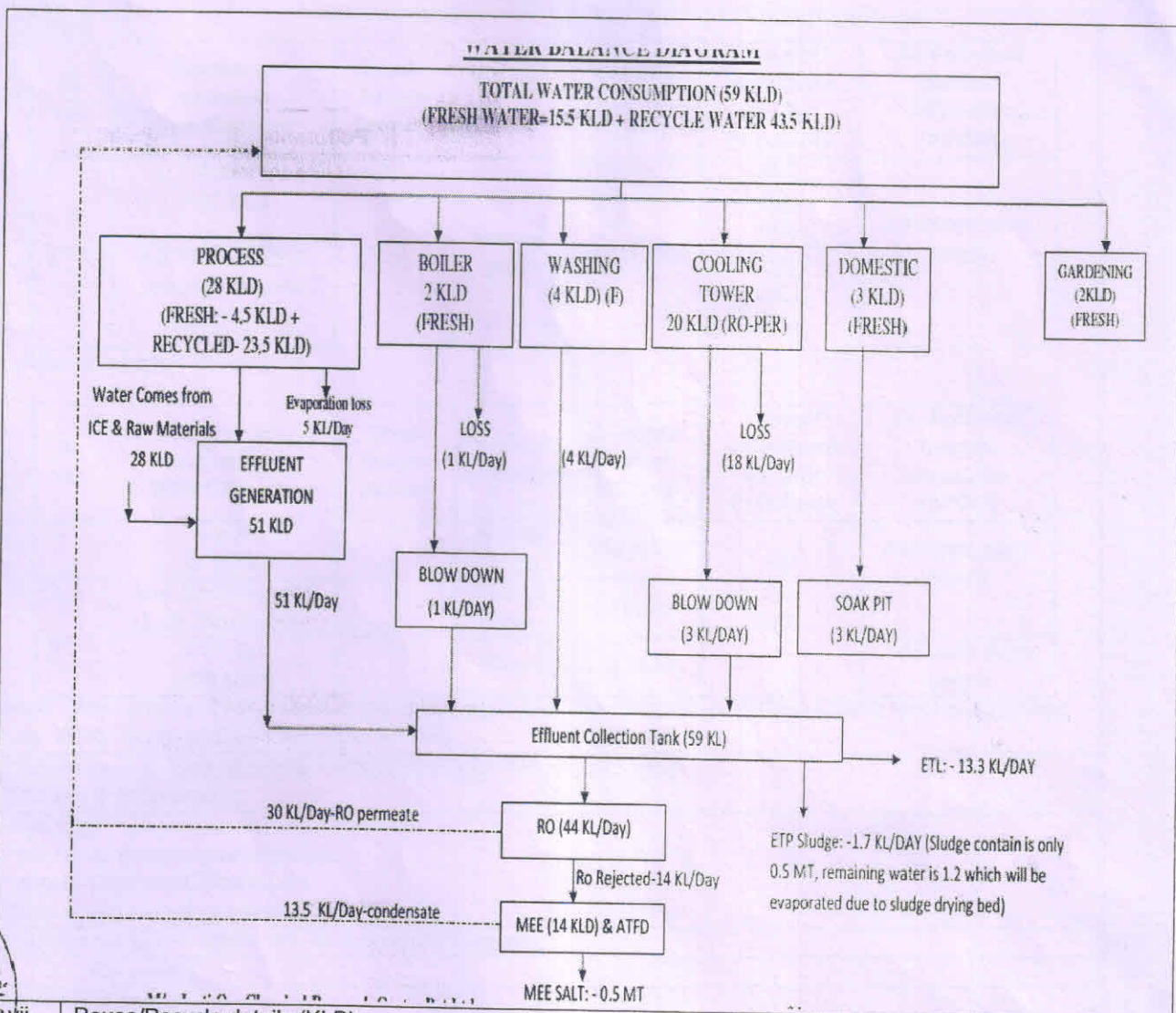
As per existing CCA, unit is having 4.5 KLD effluent discharge permission. As per new discharge allotment list, unit is getting additional 9.3 KLD discharge permission. So unit is having total 13.3 KLD effluent discharge permission. Unit will discharge 13.3 KLD of effluent after applying primary treatment, passing effluent from sand filter & carbon filter. So unit will comply 18(1)-B.

Brief note on adequacy of ZLD (In case of Zero Liquid Discharge):

> Not Applicable



v	Mode of Disposal & Final meeting point
	Domestic: To sock/ septic tank
	Industrial: Effluent from Process, Washing, Boiler Blow Down, Cooling Tower Blow Down will be collected into Collection tank. Then it will be sent to equalization cum neutralization. Effluent will be neutralized by using of H <sub>2</sub> SO <sub>4</sub> / Lime based on its nature. There will be also an adding of coagulant and flocculent. Then after it will be led to primary clarifier, for separation of sludge. Sludge generated from the bottom of the clarifier will be sent to sludge storage after sludge drying bed. Overflow of the clarifier will be subjected to RO after passing through sand filter and carbon filter. Ro rejected water will be sent to MEE having ATFD.
vi	In case of Common facility (CF) like CETP, Common Spray dryer, Common MEE, CHWIF etc. Name of Common facility (CF) (For waste water treatment)
	> ETL Ankleshwar
	Membership of Common facility (CF)
	Unit is a member of ETL.
vii	Simplified water balance diagram with reuse / recycle of waste water



Reuse/Recycle details (KLD)			
[Source of reuse & application area]			
Total reuse 43.5 KLD			
Source of waste water for reuse with quantity in KLD (From where it is coming)	Application area with quantity in KLD (Where it is used)	Characteristics of waste water to be reused (COD, BOD, TDS etc.)	Remarks regarding feasibility to reuse i.e.
R.O Permeate (30 KLD)	20 KLD in cooling tower, 10 KLD in process	TDS:-100-150 TSS:- < 5 COD:- <100	Reusable in process
MEE Condensate (13.5 KLD)	Process (13.5 KLD)	TDS:-<100 TSS:-<5 COD:- <100	Reusable in process
<b>E</b>	<b>Air</b>		
<b>i</b>	Flue gas emission details No. of Boilers/TFH/Furnaces/DG sets etc. with capacities viz. TPH, Kcal/hr, MT/hr, KV, etc. <b>Existing &amp; Proposed</b>		

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**-Existing**

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
1.	Boiler (500 KG)	11	Natural Gas	15 m3/hr	PM SO <sub>2</sub> NO <sub>x</sub>	Adequate stack height
2.	Hot Air Generator (50,000 Kcal/Hr)	11			PM SO <sub>2</sub> NO <sub>x</sub>	

**-After Proposed Expansion**

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
1	Boiler (2 TPH)	11	Natural Gas	140 m3/hr	PM SO <sub>2</sub> NO <sub>x</sub>	Adequate stack height
2	Hot Air Generator (2,00,000 Kcal/Hr)	11	Natural Gas	25 m3/hr		
3	D. G. Set (250 KVA)	11	Diesel	15 Lit/hr		Adequate stack height

Note: - After proposed expansion, unit will dismantle 500 KG/ Hr Boiler and 50,000 Kcal/Hr HAG and installed new 2 TPH Boiler and 2,00,000 Kcal/ Hr HAG.

ii Process gas i.e. Type of pollutant gases (SO<sub>2</sub>, HCl, NH<sub>3</sub>, Cl<sub>2</sub>, NO<sub>x</sub> etc.)

**Existing & Proposed**

**-Existing**

There is no process gas emission.

**- As per proposed Expansion**

There is no process gas emission.

iii Fugitive emission details with its mitigation measures.

➤ No solvent.

**F Hazardous waste**

(As per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.

**Existing & Proposed**

Sr. no.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules.	Quantity (MT/Annum)			Management of HW
				Existing	Proposed	Total	
1.	Empty barrels/containers/liners contaminate with hazardous chemicals/wastes	From Packing Material	33.1	3.00	27	30	Collection, storage, transportation & disposal by selling to GPCB authorized recycler
2.	Used or Spent oil	From Lubrication	5.1	0	4	4	Collection, storage, transportation & disposal by selling to GPCB authorized recycler/refiner.



# ANNEXURE-1

	3.	Spent Carbon	ETP	28.3	0	1	1	Collection, Storage & Disposal by sent it to Co-processing /incineration.
	4.	RO membrane	RO	35.2	0	2	2	Collection, storage within factory premises, transportation and Disposal at TSDF.
	5.	ETP Sludge	From ETP	35.3	1.2	148.8	150	Collection, storage within factory premises, transportation and Disposal at TSDF.
		MEE salt	From MEE	35.3	0	150	150	
ii	Membership details of TSDF, CHWIF etc. (For HW management)				Unit will obtain it.			
iii	Details of Non-Hazardous waste & its disposal (MSW and others)				Unit will obtain it.			
<b>G</b>	<b>Solvent management, VOC emissions etc.</b>							
i	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc. (Details in Table Format)							
	➤ No solvent.							
ii	<b>VOC emission sources and its mitigation measures</b>							
	➤ No solvent.							
H	➤ <b>Details regarding storage of Hazardous chemicals</b>							
	Storage details			Name of major Hazardous chemicals			Remarks	
	HDPE Storage Tank/Carboy/ Drum/ Tank			Primary Amine, Phenol, HCl				

**Considering the above project details, the terms of reference (ToR) are prescribed as below and as per the standard TOR for the Synthetic Organic Chemical projects recommended by SEAC vide letter no. EIA-10-GEN-21/1480 dated 14/09/2017 and approved by SEIAA in its 12<sup>th</sup> meeting dated 16/09/2017 for the EIA study to be done covering 10 Km radial distance from the project boundary.**

- Details with respect to justification for proposed expansion: (1) To address proportionate availability of space for production plant. (2) To address proportionate availability of storage area for raw materials finished goods, utilities considering fire-safety norms & PESO standards and goods carrier movement within premises. (3) To address proportionate captive/common infrastructure available to accommodate additional load due to proposed expansion. (4) Environment impact and its mitigation measures for common/ captive infrastructure due to proposed production.
- Compliance of MoEFCC's OM dated 01/05/2018 regarding "Corporate Environment Responsibility" (CER). Fund allocation for Corporate Environment Responsibility (CER) shall be made as per MoEFCC's O.M. No. 22-65/2017-IA.III dated 01/05/2018 for various activities therein. The details of fund allocation and activities for CER shall be incorporated in EIA/EMP report.
- Explore the use of renewable energy to the maximum extent possible. Details of provisions to make the project energy-efficient through of energy efficient devices and adoption of modes of alternative eco-friendly sources of energy like solar water heater, solar lighting etc. Measures proposed for energy conservation.
- Qualitative and quantitative analysis of hazardous waste streams generation from the manufacturing process (Product wise). Explore the possibility to reuse such waste streams within premises as raw materials for other products or to convert it into valuable products instead of selling out side. Sound management of such waste streams as per the HW Rules 2016 as amended time to time. Feasibility report for utilization shall be incorporated in EIA report.

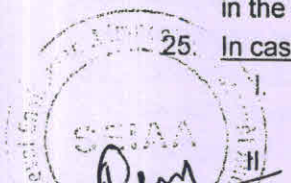




5. Status of all the applicable rules, acts, regulation, clearances in a tabular form.
  6. Segregation of waste water streams based on characteristics and its proper management keeping in view direction under section 18 (1) (b) of the Water (Prevention and Control of Pollution) act, 1974 issued by CPCB regarding compliance of CETP. (COD, BOD, TDS etc. of each stream shall be given).
  7. Details of the treatability and feasibility of waste water to be disposed off by means of in-house MEE and its impact on Environment and Human Health. Submit Adequacy of in-house MEE including Solvent stripper & ATFD. Standard Operating Procedures (SOPs) for MEE shall be incorporated in EIA report.
- VIII. The TOR prescribed as above and as per the standard TOR approved by SEIAA and the model ToRs available in the MoEFCC's sector specific EIA Manual for 'Synthetic Organic Chemical Industry' shall be considered as generic TORs for preparation of the EIA report in addition to all the relevant information as per the generic structure of EIA given in Appendix III in the EIA Notification, 2006.
- IX. Further Project Proponent may be advised to submit final EIA Report with EC application within 100 days from the date of issuance of this ToR to expedite processing of Environment Clearance application.
- X. The project proponent shall have to apply for Environmental clearance through online portal <http://environmentclearance.nic.in/> along with final EIA report.



1. A tabular chart with index for point-wise compliance of below mentioned TORs.
2. Executive summary of the project – giving a prima facie idea of the objectives of the proposal, use of resources, justification, etc. In addition, it should provide a compilation of EIA report, including EMP and the post-project monitoring plan in brief.
3. Justification for selecting the proposed product and unit size.
4. Land requirement for the project including its break up for various purposes, its availability and optimization.
5. Land possession documents. Copy of NA order showing permission to use the project land for industrial purpose. If located in GIDC, copy of plot holding certificate obtained from GIDC Authority.
6. Location of the project site and nearest habitats with distances from the project site to be demarcated on a toposheet (1: 50000 scale).
7. Topography details of the project area.
8. Geological features and geo-hydrological status of the study area.
9. In case of project located outside notified area: Legal Undertaking stating that unit is complying the three conditions [i.e. water consumption less than 25 M<sup>3</sup>/day; Fuel consumption less than 25 TPD; and not covered in the category of MAH units as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989] as per the amendment to EIA Notification, 2006 vide SO 1599 (E) dated 25/06/2014.
10. Present land use pattern of the study area shall be given based on satellite imagery.
11. Layout plan of the factory premises clearly demarcating various units within the plant. Provision of separate entry & exit and adequate margin all round the periphery for unobstructed easy movement of the emergency vehicle / fire tenders without reversing back. Mark the same in the plant layout.
12. Technical details of the plant/s along with details on best available technologies (BAT), proposed technology and reasons for selecting the same.
13. Product spectrum (Proposed products along with production Capacity) and processes.
14. Chemical name of each proposed product to be manufactured. Details on end use of each product. (Provide CAS number of all the products & raw materials. In case of Dyes, CI number).
15. Details on raw materials, source and storage within the premises.
16. Details of complete manufacturing process / operations of each product along with chemical reactions, process flow diagram describing each unit processes and unit operations along with material balance, consumption of raw materials etc.
17. Details on strategy for the implementation of cleaner production activities.
18. Assessment of source of the water supply with adequacy of the same to meet with the requirements for the project. Permission obtained from the concern authority for supply of raw water.
19. Undertaking stating that no bore well shall be dug within the premises (If project is located within the Industrial estate).
20. Details on water balance including quantity of effluent generated, recycled & reused. Details of methods to be adopted for the water conservation.
21. Efforts to minimize effluent discharge and to maintain quality of receiving water body.
22. Explore the possibilities for Zero-Liquid Discharge (ZLD) option for the proposed project.
23. Segregation of waste streams, characterization and quality with specific treatment and disposal of each stream including action plan for maximum recycle of treated waste water and minimum discharge for effluent.
24. Capacity of ETP in KL/day. Details of ETP including dimensions of each unit along with schematic flow diagram. Inlet, transitional and treated effluent qualities with specific efficiency of each treatment unit in reduction in respect of all concerned/regulated environmental parameters. Inlet effluent quality should be based on worst case scenario considering production of most polluting products that can be manufactured in the plant concurrently.
25. In case of discharge into GIDC drainage / Pipeline:
  - i. Copy of permission letter with quantity (KL/day) from the concern authority of drainage network / pipeline with confirmation for spare capacity available to take additional effluent.
  - ii. Characteristics of the combined effluent and treated water to be sent to Common pipeline with



- III. Provision for Continuous Monitoring System for waste water discharge.
26. In case of waste water sent to Common Facilities (CF) like CETP, MEE, Spray Dryer etc.
- Details of Common facilities including (1) Total capacity of the CF (2) Copy of CC&A of the CF. (3) Actual load at present (Qualitative and Quantitative – KL per day) (4) Booked quantity & Spare capacity of CF (5) Copies of XGN generated Inspection reports with analysis reports of the water/Air/Hazardous samples collected by GPCB (Last 2 year). Copies of instructions issued by GPCB in last 2 year and point wise compliance thereof. (6) Copies of Show- cause notices, closure notices etc. served by the GPCB and its compliance (6) Recommendations and suggestions of the last two Environment Audit reports of CETP and its compliance report. (7) Common Facility Up gradation scheme, if any.
  - Status of compliance to the 18(1) (b) direction issued by the CPCB with respect to CETP compliance & CEPI area action plan along with relevant supportive document.
  - Give status of compliance of Environmental norms of existing Common Infrastructure i.e. CETP, MEE & Spray Dryer (Whichever is applicable) in which you are a member.
  - Submit adequacy of Common Infrastructure i.e. CETP, MEE & Spray Dryer for additional load (Whichever is applicable) along with written confirmation/membership certificate mentioning the same (Total consented quantity, total quantity booked so far, quantity booked for the unit, spare quantity available).
27. In case of Zero Liquid Discharge (ZLD) :
- Action plan for 'Zero' discharge of effluent shall be included. Notarized undertaking for assuring that underground drainage connection will not be taken in the unit and there shall be no effluent discharge outside the plant premises.
  - Economical and technical viability of the effluent treatment system to achieve Zero Liquid Discharge (ZLD).
  - Certification of adequacy of proposed ZLD scheme through credible institutes of National repute.
  - To estimate & monitor ground water quality & its contamination status, piezometer wells, one on up gradient of the groundwater flow and other three on the down gradient side of the ground water flow of the proposed project at different depth based on available ground water depth shall be established and all the parameters mentioned in IS 10:500 for potable water standard shall be monitored.
28. In case of in-house MEE/Spray dryer for waste water treatment: Capacity of MEE/Spray dryer in KL/hr. Technical details of MEE including evaporation capacity, steam required for evaporation, adequacy of the proposed boiler to supply steam for evaporation in addition to the steam required for the process etc. Techno-economical viability of the evaporation system. Control measures proposed for the evaporation system in order to avoid/reduce gaseous emission/VOC from evaporation of industrial effluent containing solvents & other chemicals.
29. Technical details of ATFD/Crystallizer/ spray Dryer, RO/NF system etc. (If any).
30. Details of the treatability and feasibility of wastewater to be disposed off by means of spray dryer and its impact on environment and Human Health
31. Undertaking stating that a separate electric meter will be provided for the waste water treatment system viz. ETP, RO, MEE, Spray dryer etc. (Whichever is applicable)
32. Economical and technical viability of the effluent treatment system.
33. Plans for management, collection and disposal of waste streams to be generated from spillage, leakages, vessel washing, used container washing etc. Measures proposed for preventing effluent discharge during unforeseen circumstances.
34. Action plan for reuse of liquid waste streams like Spent acids, Poly Aluminium Chloride etc. within premises to convert into valuable products instead of sending outside to actual end-users.
35. Adequacy of the proposed EMS with respect to the pollution load envisaged in terms of Air, Water and hazardous waste.
36. One season Site-specific micro-meteorological data using temperature, relative humidity, hourly wind speed and direction and rainfall should be incorporated.
37. Anticipated environmental impacts due to the proposed project/production may be evaluated for

- be identified. Baseline studies may be conducted within the study area for all the concerned/identified VECs and likely impacts will have to be assessed for their magnitude in order to identify mitigation measures.
38. One complete season base line ambient air quality data (except monsoon season) to be given along with the dates of monitoring. The parameters to be covered shall be in accordance with the revised National Ambient Air Quality Standards (NAAQS) as well as project specific parameters like NH<sub>3</sub>, HCl, CL<sub>2</sub>, HBr, VOC etc. Locations of the monitoring stations should be so decided so as to take into consideration the pre-dominant downwind direction, population zone and sensitive receptors. There should be at least one monitoring station in the upwind direction. There should be at least one monitoring station in the pre dominant downwind direction at a location where maximum ground level concentration is likely to occur.
  39. Modeling indicating the likely impact on ambient air quality due to proposed activities. The details of model used and input parameters used for modeling should be provided. The air quality contours may be shown on location map clearly indicating the location of sensitive receptors, if any, and the habitation. The wind rose showing pre-dominant wind direction should also be indicated on the map. Impact due to vehicular movement shall also be included into the prediction using suitable model. Results of Air dispersion modeling should be superimposed on satellite Image / geographical area map.
  40. Base line status of the noise environment, impact of noise on present environment due to the project and proposed measures for noise reduction including engineering controls.
  41. Specific details of
    - a) Process gas emission from each unit process with its quantification.
    - b) Air pollution Control Measures (APCM) proposed for process gas emission. Adequacy of the air pollution control measures (APCM) for process gas emission measures to achieve the GPCB norms.
    - c) Details of the utilities required.
    - d) Type and quantity (MT/hr & MT/Day) of fuel to be used for each utility.
    - e) Flue gas emission rate emission from each utility.
    - f) Air Pollution Control Measures (APCM) proposed to each of the utility along with its adequacy
    - g) List the project specific sources of fugitive emission along with its quantification and proposed measures to control it.
    - h) Details on tail gas treatment.(If any)
  42. Provision of CEMS (Continuous Emission Monitoring system).
  43. Action plan for odour control to be submitted.
  44. Management plan for hazardous/Solid waste including storage, handling, utilization and safe disposal as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016. CPCB guidelines in respect of specific treatment, such as solar evaporation, incineration, etc., need to be followed.
  45. How the manual handling of the hazardous wastes will be minimized? Methodology of de-contamination and disposal of discarded containers and its record keeping.
  46. Management of by-products which fall under the purview of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016 as per the said rules and necessary permissions from the concern authority.
  47. Membership of Common Environmental Infrastructure like TSDF, Common Incineration Facility (CHWIF), MEE, Spray dryer etc.
  48. Name and quantity of each type of solvents to be used for proposed production. Details of in-house solvent recovery system including mass balance, solvent loss, recovery efficiency (% recovery), feasibility of reusing the recovered solvents etc. for each type of solvent.
  49. Appropriate monitoring network has to be designed and proposed, to assess the possible residual impacts on VECs.
  50. A detailed EMP including the protection and mitigation measures for impact on human health and environment as well as detailed monitoring plan and environmental management cell proposed for implementation and monitoring of EMP. The EMP should also include the concept of waste-minimization, recycle/reuse/recover techniques, energy conservation, and natural resource conservation. Total capital

51. Details of in-house monitoring capabilities and the recognized agencies if proposed for conducting monitoring.
52. Permission from PESO, Nagpur for storage of solvents, other toxic chemicals, if any.
53. Occupational health impacts on the workers and mitigation measures proposed to avoid the human health hazards along with the personal protective equipment to be provided. Provision of industrial hygienist and monitoring of the occupational injury to workers as well as impact on the workers. Plan for periodic medical checkup of the workers exposed. Details of work place ambient air quality monitoring plan as per Gujarat Factories Rules.
54. Details on volatile organic compounds (VOCs) from the plant operations and occupational safety and health protection measures. Proposal for Leak Detection and Repair (LDAR) program as per the CPCB guidelines.
55. Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios should be carried out. The worst-case scenario should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the facilities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures including On-Site / Off-Site Emergency Plan should be provided.
56. MSDS of all the products and raw materials.
57. Details of hazardous characteristics and toxicity of raw materials and products to be handled and the control measures proposed to ensure safety and avoid the human health impacts. This shall include the details of Antidotes also.
58. Details of quantity of each hazardous chemical (including solvents) to be stored, Material of Construction (MoC) of major hazardous chemical storage tanks, dyke details, threshold storage quantity as per schedules of the Manufacture, Storage & Import of Hazardous Chemicals Rules of major hazardous chemicals, size of the biggest storage tank to be provided for each raw material & product etc. How the manual handling of the hazardous chemicals will be minimized?
59. Details of the separate isolated storage area for flammable chemicals. Details of flame proof electrical fittings, DCP extinguishers and other safety measures proposed. Detailed fire control plan for flammable substances and processes showing hydrant pipeline network, provision of DG Sets, fire pumps, jockey pump, toxic gas detectors etc.
60. Submit checklist in the form of Do's & Don'ts of preventive maintenance, strengthening of HSE, manufacturing utility staff for safety related measures.
61. Specify safety precautions to be taken for Chemical storage, process, handling & transportation hazard.
62. Details on workers training before engaging work, periodical, in-house, outside etc.
63. Details on various SOP to be prepared.
64. Details on safety audit to be carried out and their compliance status.
65. Specific safety measures to be taken for general Public living in the vicinity.
66. Details on hazard identification i.e. HAZOP, HAZAN, Fault tree analysis, Event tree analysis, Checklist, Audit etc. to be adopted for the safety operation of the plant.
67. Detection and monitoring of VOC's / gases.
68. Detailed five year greenbelt development program including annual budget, planning schedule, species, width of plantations, number of trees to be planted, area under green belt development [with map], budgetary outlay etc. along with commitment of the management to carry out the tree plantation activities outside the premises at appropriate places in the nearby areas and elsewhere.
69. Action plan for the greenbelt development – species, width of plantations, planning schedule, etc., in accordance to CPCB published guidelines.
70. Detailed socio-economic development measures including community welfare program most useful in the project area for the overall improvement of the environment. Submit a detailed plan for social corporate responsibilities, with appropriate budgetary provisions for the next five years and activities proposed to be carried out, specific to the current demographic status of the area.
71. (a) Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report. (b). Does the Environment Policy prescribe for standard operating

- process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions ? If so, it may be detailed in the EIA.
72. What is the hierarchical system or administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions. Details of this system may be given.
  73. Does the company have a system of reporting of non compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA Report.
  74. Phase wise project implementation schedule with bar chart and time frame, in terms of site development, infrastructure provision, EMS implementation etc.
  75. Certificate of accreditation issued by the NABET, QCI to the environmental consultant should be incorporated in the EIA Report.
  76. An undertaking by the Project Proponent on the ownership of the EIA report as per the MoEF&CC OM dated 05/10/2011 and an undertaking by the Consultant regarding the prescribed TORs have been complied with and the data submitted is factually correct as per the MoEF&CC OM dated 04/08/2009.
  77. All documents to be properly referenced with index and continuous page numbering.
  78. Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
  79. Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
  80. In case of Expansion of the project
    - a. Need for the proposed expansion should be justified in detail.
    - b. Adequacy of existing EMS (Environmental Management System).
    - c. Explore the possibility to achieve Zero Liquid Discharge (ZLD) for existing as well as proposed activity.
    - d. Records of any legal breach of Environmental laws i.e. details of show- cause notices, closure notices etc. served by the GPCB to the existing unit in last five years and actions taken then after for prevention of pollution.
    - e. Copies of Environmental Clearances obtained for the existing plant, its point wise compliance report.
    - f. Environmental audit reports for last 3 years and compliance of its recommendations/Suggestions. (Include latest audit report and its compliance.)
    - g. Copy of Consent to Operate (CC&A) obtained along with point wise compliance status of all the conditions stipulated therein.
    - h. Compliance of MoEF&CC circulars vide No: J-11011/618/2010-IA.II (I) dated 30/05/2012 and J-11013/41/2006-IA-II(I) dated 20/10/2009.
    - i. Copies of XGN generated Inspection reports with analysis reports of the water/Air/Hazardous samples collected by GPCB (Last 2 year). Copies of instructions issued by GPCB in last 2 year and point wise compliance thereof.
  81. In case of project is located in Ankleshwar-Panoli, Vatva-Narol & Vapi GIDC.
    - (A) Compliance of MOEF&CC's OM no. J-11013/5/2010-IA.II (I) dated 25/11/2016 regarding lifting of moratorium on the consideration of projects for environmental clearance.
    - (B) Compliance of direction under section 18 (1) (b) of the Water (Prevention and Control of Pollution) act, 1974 issued by CPCB dated 31/03/2016 regarding compliance of CETP.
      - a) Action initiated by GPCB, if any, against proposed unit regarding non-compliance of prescribed standards under the various environmental laws.
      - b) Performance of CETP with respect to current hydraulic load & prescribed standards with No Objection Certificate of CETP regarding incorporation of the proposed unit for acceptance of waste water.
      - c) Performance of TSDF site with respect to current load & prescribed standards with No Objection Certificate of TSDF site regarding incorporation of the proposed unit for acceptance of hazardous waste to the common infrastructure.
      - d) Copies of quarterly action report taken for the above points submitted to the CPCB.
      - e) Report of GPCB which have conducted monitoring as per the said direction by CPCB dated 31/03/2016.

**Validity of ToR:**

- The ToRs prescribed for the project will be valid for three years for submission of EIA & EMP report.
- The period of validity could be extended for a maximum period of one year provided an application is made by the applicant to the Regulatory Authority, at least three months before the expiry of validity period together with an updated Form-I, based on proper justification and also recommendation of the SEAC.

