Minutes of the 768th meeting of the State Level Expert Appraisal Committee held on25th January 2024 through Video Conference (VC) on National Informatics Centre (NIC).

The agenda of the present meeting was mailed to expert Committee in advance and a Video conference meeting on NIC was organised in this regard on 25th January 2024 at 13.30 hrs.

The 768th meeting of the State Level Expert Appraisal Committee (SEAC) was held online by Video conferencing on 25th January 2024at 13.30 hrs. Following members joined the meeting:

1.	Shri Akshay Kumar Saxena, Chairman, SEAC
2.	Dr. S. C. Pant, Vice Chairman, SEAC
3.	Shri D. C. Chaudhari, Member, SEAC
4.	Shri J. K. Vyas, Member, SEAC
5.	Shri Anand Zinzala, Member, SEAC
6.	Shri B. M. Tailor, Member, SEAC
7.	Shri D.M.Thaker Member Secretary, SEAC

The Committee considered the applications made by project proponents, additional details submitted as required by the SEAC/SEIAA and details furnished in the Form-1, PFR, EMP reports etc. The applicants made presentations on the activities to be carried out along with other details furnished in the Form-1, PFR, EIA-EMP reports and other reports.

1.	SIA/GJ/IND3/429550/2023	**M/s. Tatva Chintan Pharma Chem Limited.** Plot. No. D3/11, Dahej - III, Dahej Industrial Estate Tal: Vagra, Dist: Bharuch, Gujarat.	**EC- Reconsideration**

Category: **5(f) – B1**

Project status: **EC- New**

Project located either in CEPI or non CEPI **: non CEPI**

PP submitted salient features of the project including Water, Air and Hazardous waste management are as under from Sr. No. 1, 3 to 40. And in Sr. No. 2 detailed deliberation of

Committee is mentioned. Comments of SEAC is given in relavant points.

1) **DETAILS OF APPLICATION:**

1.1 Type of application:	EC (New)
1.2 Proposal no.	SIA/GJ/IND3/429550/2023
1.3 Category of Project:	5 (f) – B1
1.4 Date of application:	23/5/2023
1.5 Date of EDS by SEIAA a) EDS Raised b) Reply by PP	--
1.6 Date of EDS by SEAC a) EDS Raised b) Reply by PP c) Accepted by SEAC	13/06/2023 26/06/2023 01/09/2023
1.7 TOR No. & Date :	SIA/GJ/86905/2022 Dated 09/05/2022
1.8 Date and place of Public Hearing	Not Applicable. Unit is located in Notified Industrial Area of GIDC, Dahej-III which is fall in PCPIR. Hence, Public Hearing is exempted. PCPIR has obtained EC vide File no. 21-49/2010-IA-III Dated 14th September, 2017
1.9 Name of accredited Environmental Consultant & address along with Accreditation No. & Validity	M/s. Aqua-Air Environmental Engineers Pvt. Ltd. 403-404, Centre Point, Nr. Kadiwala School, Ring Road, Surat-395002, Gujarat, India NABET/EIA/2023/SA 0196 Valid up to 08/04/2024
1.10 SEAC Meeting No. and Date:	SEAC Meeting No. 710 Dated 18/10/2023
1.11 ADS raised by SEAC meeting No & date :	SEAC Meeting No. 710 Dated 18/10/2023
1.12 Reply Submitted by PP dated:	29/12/2023
1.13 Revised Consideration SEAC Meeting No. and Date:	SEAC Meeting No. 768 Dated 25/01/2024

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2) **DELIBERATIONS OF SEAC:**

1) This is a new project proposed for manufacturing of synthetic organics chemicals.
2) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
3) The proposal was considered in the SEAC video conference meeting dated 18.10.2023.
4) Project proponent (PP) and their Technical Expert/Consultant M/s Aqua Air Environmental Engineering Pvt. Ltd remain present during video conference meeting.
5) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
6) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline

environmental study has been conducted for the study area of 10 km radial distance from project site for the period March 01, 2022 to May 31, 2022. Ambient Air Quality monitoring was carried out PM10, PM2.5, SO2, NO2, NH3, O3, As, Ni, C6H6, HCl, Pb, CO, HC, VOC, HBr and BaP at Eleven locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "ISCST3". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site will remain within the National Ambient Air Quality Standards (NAAQS).

7) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
8) PP has submitted GIDC plot allotment letter of Plot. No. D3/11 of M/s. Tatva Chintan Pharma Chem Limited dated: 20.11.2021.
9) PP has submitted TSDF membership certificate of M/s. Tatva Chintan Pharma Chem Limited dated: 04.08.2023.
10) PP has submitted NABET undertaking NABET/EIA/2023/IA0062 dated: 02.09.2023 of M/s Aqua Air Environmental Engineering Pvt. Ltd.
11) Committee observed that PP has proposed **1.2 MT/Annum quantity of production for R & D Products and 600 MT/Annum production of Pilot Plant Products. Committee found that the quantity of products is very high considering R&D activity.**PP was asked to Justify for the requirement of the Pilot Plant Products and Submit revised R&D production details.
12) PP was asked to submit an undertaking stating that they will not sale the R & D Products in market.
13) PP was asked to submit if PP had obtained recognision from any Organisation for the R& D activity proposed.
14) Committee asked PP to submit Revised Plant layout with respect to distance between solvent storage and MEE.
15) Committee asked the waste water segregation details reactorwise.
16) Committee asked PP to submit Details of Fire Extinguishers with capacity to be installed.
17) Committee observed that Di Methyl Ether is proposed as fuel. However, it was observed that Di Methy Ether is not an approved fuel and is by-product from their unit. PP was asked to revise the fuel used in their unit.

18) Committee asked PP to submit Revised Hazardous waste management considering the generation of DME (Di Methyl Ether) as by product.
19) Committee asked PP to submit Revised CER Cost breakup for the beatification of Lake and CER activity.
20) Committee asked PP to submit Revised Hazardous Chemical Storage List with respect to Separate tank for Bromine.
21) Committee asked PP to submit Carbon footprint and net Zero action plan. Details of carbon sequestration.
22) **After detailed discussion, Committee unanimously decided to consider the project in one of upcoming meeting only after submission of following documents :**
    1) Justification of quantity of R & D products.
    2) Facilities provided in the pilot plant.
    3) Proof of concept is completed for R & D products and submit further process in detail wrt pilot plant.
       Notarised undertaking sttaing that PP won't sale the products manufacturing from R & D products and pilot plant products.
    4) Submit details of the final end use/disposal of the products to be manufactured in Pilot plant and R& D.
    5) Caluclate pollution potentintial of the pilot plant and include in the impacts and mitigation proposed.
    6) Submit if PP had obtained recognision from any Organisation for the R& D activity proposed.
    7) Revised Plant layout with respect to distance between solvent storage and MEE.
    8) The waste water segregation details reactor wise.
    9) Details of Fire Extinguishers with capacity to be installed.
    10) Revise the fuel used in the unit.
    11) Revised Hazardous waste management considering the generation of DME (Di Methyl Ether) as by product.
    12) Revised CER Cost breakup for the beatification of lake & CER activity.
    13) Revised Hazardous Chemical Storage List with respect to Separate tank for Bromine.
    14) Submit Carbon footprint and net Zero action plan. Details of carbon sequestration.
23) PP has submitted reply of above query generated on SEAC VC meeting, through Parivesh portal.
24) This proposal is reconsidered in SEAC VC meeting dated: **25.01.2024.**
25) PP along with their technical expert/consultant, M/s. Aqua Air Environmental Engineering Pvt. Ltd remains present in the meeting and made presentation before Committee;

26) During meeting, Committee noted that PP has submitted following details:

1) PP has presented that , company has proposed total 14 numbers of process categories & production capacity of each process group will be 2 MT/Month, Company has proposed quantity of R&D products are 0.1 MT/Month & Pilot Product capacity – 28 MT/Month, Generally new products are being developed at very small scale in R & D laboratory i.e., 100 gm – 5 Kgs to establish the process, quality, yield etc, Once the process gets developed in laboratory scale, we generally submit the sample to concerned end users in Domestic as well as overseas countries for their approval. After approval of those product, our customers require 3 to 4 batches sample (100kg to 500kg) for validation of products, Generally overseas/foreign countries ask for the data of 4-Batch and this 4 batches approval customer generally ask for minimum in specific 500 Kg*4 Nos., so it comes out to 2 MT/Month (i.e. 500 kgs x 4).
2) Facilities provided in the pilot plant and R& D plant are mentioned at Sr no. 5
3) Company has a dedicated DSIR (Department of Scientific & Industrial Research) approved R&D Centre at our Vadodara facility where qualified and experienced in-house R&D team focuses on the development of new products and improvement in current manufacturing processes.

   Company has submitted a Notorised undertaking dated 14.12.2023 stating that "Unit will not sell any product which will be manufactured at R&D Plant Products and Pilot Plant Products.
4) Final end use/disposal of the products to be manufactured in Pilot plant and R& D and same details in given in format at Sr. No. 5.
5) Total Production for R & D is 0.1 MT/Month, Total Production for Pilot Plant is 28 MT/Month, Total Production proposed is 28.1 **MT/Month** So daily capacities would be 0.937 MT only, In our overall proposal we are proposing 3800 **MT/Month** as EC related Organic Products So we have considered total Water consumption for R&D & pilot plant will be 10 KL/Day & Waste water generation will be 10 KL/Day.

   Potential Impact and Mitigation Measeure :

Environmental Components	**Sources of Impact**	**Mitigative Measure**
Water Environment	Chances of contamination of surface water due to generation of High COD stream	Process effluent (230 KL/Day), R & D & Pilot plant effluent (10 KL/Day) & Scrubbing media (20 KL/Day) will be treated in ETP then sent to SSE. SSE Condensate (240 KL/Day) will be reused in

		plant premises.
Water Environment	Chances of contamination of ground water due to waste stream generated from spillage, leakages, vessel washing, used container washing etc.	The spilled/ leaked material should be collected and diluted as per required properties of the leaked material. The diluted material is collected/ stored separately/treated in ETP and then treated in in-house SSE and MEE. Also, MEE Condensate will be re-used within premises.
Air Environment	Generation of Fugitive emission and VOC due to vaporization of raw material and product handling.	The raw materials will be stored in closed containers and will be handled through closed system to avoid the handling losses.
Land Environment	Generation of hazardous waste such as Discarded Drums, Discarded Bags / Liner, Organic Process Waste, Residue from Distillation	Solid/ Hazardous waste will be collected, stored, transported and disposed as per the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2016.
	Health hazard due to handling of solid/ hazardous waste.	Adequate PPE's will be provided to the workers handling solid/ hazardous waste.

6) Company has a dedicated DSIR (Department of Scientific & Industrial Research) approved R&D Centre at our Vadodara facility.

7) PP has presented revised Plant layout with respect to distance between solvent storage and MEE. Distance between MEE & solvent storage is 50 meter.

8) Effluent will be collected at source point only and it will be collected in designated collection tanks. Separate ETP for High COD & Low COD stream will be provided.This effluent stream will be in different Color Codes (Like Red for High COD Stream & Blue for Low COD Stream) and for different effluent streams and its separate Collection drain/sumps.We will Provide Adequate Collection Tank

&ETP for Effluent Streams for Segregation of waste water from the Process.We have segregated our waste water into High COD / High TDS & Low COD / Low TDS Streamand same details in given in format at Sr. No. 18 & 19.

9) Details of Fire Extinguishers with capacity to be installed and Fire Hydrant Layout submitted.

Type		**Nos**
ABC (Capacity : 9 Kg)	:	15
ABC(Capacity : 5 Kg)	:	35
CO2 (Capacity: 5 Kg)	:	25
DCP (Capacity : 5 Kg)	:	60
M Foam (Capacity : 9 L)	:	10
M Foam (Capacity : 6 L)	:	20
TOTAL	**:**	**165**

10) PP has submitted revised fuel list. The details are given in format at Sr. No. 24.

11) PP has submittedrevised Hazardous waste managementconsidering the generation of DME (Di Methyl Ether). The details are given in format at Sr. No. 32.

12) PP has submittedrevised CER Cost breakup for the beautification of lake & CER activity. The details are given in format at Sr. No. 39.

13) PP has submittedrevised Hazardous Chemical Storage List with respect to Separate tank for Bromine. The details are given in format at Sr. No. 34.

14) PP has submittedcarbon footprint and net Zero action plan. Details of carbon sequestration. The details are given in format at Sr. No. 3.

27) During meeting committee asked for following details:

- ✓ Clarification on pilot plant capacity against the total production capacity.
- ✓ Submit how many products developed in R&D lab &Collaborative research to be mentioned.
- ✓ Revised process and R&D waste water treatment facility in detail.
- ✓ Form trolley need to be mentioned in fire extinguishers.

28) Later on PP has submitted following details through email dated 25.01.2024:

- ✓ PP has mentioned that pilot plant capacity against the total production capacity. The details are given in format at Sr. No. 5.
- ✓ Company has proposed total 14 numbers of process categories & production capacity of each process group will be 2 MT/Month, Company has already collaboration with CSIR-Indian institute of chemical technology, Hydrabad& CSIR- National Chemical Laboratory, Pune, Company has a dedicated DSIR

(Department of Scientific & Industrial Research) approved R&D Centre at our Vadodara facility where qualified and experienced in-house R&D team focuses on the development of new products and improvement in current manufacturing processes and Details of products developed in R&D lab, manpower required and the collaborative research lab (i.e. CSIR-Indian institute of chemical technology)

- ✓ PP has submitted revised process & R&D waste water treatment facilityand same detailsare given in format at Sr. No. 18 & 20.
- ✓ PP has mentionedcapacity of Fire Extinguisheras below:

Details of Fire Extinguishers with capacity to be installed		
Type		**Nos**
ABC (Capacity : 9 Kg)	:	15
ABC(Capacity : 5 Kg)	:	35
CO2 (Capacity: 5 Kg)	:	25
DCP (Capacity : 5 Kg)	:	60
Mechanical Foam (Capacity : 9 L)	:	10
Mechanical Foam trolley	:	20
TOTAL	**:**	**165**

29) Committee found presentation and reply submitted by PP was satisfactory.

3) **EIA REPORT (BASELINE STUDIES AND RISK ANALYSIS)**

Sr. no.	**Particulars**	**Details (Give brief note / Conclusion of the particular subject)**	**Page no., Section no. & chapter no. of EIA report**
a	Ensure that there is no change in EIA report w. r. t. ToR i.e. Form-1 & PFR	During the TOR application, HBr vent was not mentioned in Process gas emission. &Sodium Sulfite/Sodium Bisulfite&Dil. HBr in Hazardous waste management was not mentioned. We have added HBr process vent in process gas emission Tableand added Hazardous waste category such asSodium Sulfite/Sodium Bisulfite&Dil. HBr in Hazardous waste management in EIA report with respect to TOR	Section 2.11.1 of Chapter-2 & Section 2.12 of Chapter-2in EIA report
b	Baseline environmental monitoring period	Pre monsoon Season (March 01, 2022 to May 31, 2022)	Refer Section 3.2.3, Chapter-3, Page no. 709
c	Whether baseline data is primary or secondary data?	Primary Baseline Data. Baseline data is collected by Aqua-Air	

		1) If baseline data carried out by other NABL accredited laboratory then MoU between both. 2) If baseline data is taken from another EIA report, then MoU between NABET consultant and industry whose data used in preparing present EIA report and time period of baseline data shall be as per MoEF&CC's OM dated: 08.06.2022.	Environmental Engineers Pvt. Ltd. Which is a NABL & MoEF Accredited Testing Laboratory	
	d	Baseline study area (Km)	10 km	Refer Table-3.4, (Page No. 714), Chapter-3 of EIA Report.
	AIR			
	e	No. of AAQM stations including project site	11No. of AAQM stations including project site	Refer Table-3.4, (Page No. 714), Chapter-3 of EIA Report.
	f	Parameters considered for AAQM including project specific parameters.	Respirable Suspended Particulate Matter (RSPM-PM10), Respirable Suspended Particulate Matter (RSPM-PM2.5), Sulphur Dioxide (SO2), Nitrogen Oxide (NOx), Ammonia (NH3), Ozone (O3), Lead (Pb), Arsenic (As), Nickel (Ni), Benzene (C6H6), Hydro Carbon (HC), & Carbon Monoxide (CO), VOCs, Hydrogen Chloride (HCL), Chlorine (Cl2), HBr,NH3	Refer Table-3.5, (Page No. 716), Chapter-3 of EIA Report.

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Sr. no.	Parameters	Range of Concentrations ($\mu g/m^3$)	Remarks
1	PM_{10}	75.10 – 79.22	Results of all parameters are found within NAAQS limit.
2	$PM_{2.5}$	43.83 – 46.38	
3	SO_2	15.4 – 18.25	
4	NO_2	17.26 – 19.65	
5	NH_3	BDL	
6	O_3	9.62 – 11.8	
7	As	BDL	

		8	Ni	BDL	
		9	C_6H_6	BDL	
		10	HCl	< 1.0	
		11	Pb	BDL	
		12	CO	BDL	
		13	HC	BDL	--
		14	VOC	0.1 – 0.7	--
		15	HBr	<0.5	--
		16	BaP	BDL	--
		-			
	g	Whether the results of AAQM is within the norms prescribed in NAAQS? If no, give reasons as per EIA report	Results of all parameters are found within NAAQS limit.	Refer Table-3.5, (Page No. 716), Chapter-3 of EIA Report.
	h	Commentsfor AAQM results w. r. t. NAAQS	• During the study PM10.0 concentration was observed in the range of 75.10 – 79.55 µg/m3.Maximum concentration of PM10.0 was found at Ambetha (79.55 µg/m3), which is well within the standard NAAQS limit. • During the study PM2.5 concentration was observed in the range of 43.83– 46.38 µg/m3.Maximum concentration of PM2.5 was found at Dahej (46.38 µg/m3), which is well within the standard NAAQS limit. • During the study SO2 concentration was observed in the range of 15.4 – 18.25µg/m3.Maximum concentration of SO2 was found at Dahej (18.25 µg/m3), which is well within the standard NAAQS limit. • During the study NO2 concentration was observed in the range of 17.26 –19.65 µg/m3. Maximum concentration of NO2 was found at Dahej (19.65 µg/m3), which is well within the standard NAAQS limit. • During the study O3 concentration was observed in the range of 9.82 – 11.8 µg/m3. Maximum concentration of O3 was found at Jolva (11.8 µg/m3), which is well within the standard NAAQS limit.	Refer Table-3.5, (Page No. 716), Chapter-3 of EIA Report.
	i	Software used for the mathematical Modelling for anticipated incremental GLCs (Ground Level Concentrations	Industrial source complex- short term (ISCST3) Dispersion model is a steady-state Gaussian Plume model.	Refer Table-4.5, Section-4.2. (Page No. 817), Chapter-4 of EIA Report.

	j	The resultant concentrations w. r. t. NAAQS and its conclusion.	The PM10 and PM2.5 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. PM10 and PM2.5 concentrations were observed below stipulated standards of CPCB for Industrial and Residential Area at all air quality monitoring locations during the monitoring period. Results of all parameters are found within limit. The interpretation relates to the results found for particular locations and date of monitoring.	Refer Table-3.5, (Page No. 716), Chapter-3 of EIA Report.
	WATER			
	k	No. of monitoring stations including project site wrt water a) Groundwater b) Surface water	There were11 nos. of ground water and 9 nos. of surface water monitoring stations including project site.	Summary of baseline study of Water is given in Section 3.6 (Page No.731), Chapter-3 of EIA Report.
	l	Conclusion of the Monitoring during baseline study of water (ground water and surface water)	**Ground Water Quality:** Based on comparison study with drinking water standards, it is interpreted that water samples collected from the villages should not be directly used in drinking but can be used in other domestic purposes like washing, bathing, and irrigation. It can be observed that ground water qualities in terms of various essential and desirable characteristics are found within the limits specified by IS 10500:2012. **Surface Water Quality:** There are nine locations considered in the study area. However, these water is not used for domestic/industrial activities; as the raw water is easily available through pipelines of local authorities. These water sources cannot be utilized for drinking but the water of these ponds can be used in irrigation. The water quality is good and it was observed that all	Summary of baseline study of Water is given in Section 3.6 (Page No.731), Chapter-3 of EIA Report.

			the parameters are well within the range of acceptance criteria as per IS: 10500.	
	m	No. of monitoring stations including project site wrt soil	There were 11 nos. of monitoring stations including project site wrt soil	Section 3.7.1 (Page No. 734), Chapter-3 of EIA Report.
	n	Conclusion of the Monitoring during baseline study of land / soil	The concentration of available Nitrogen, Phosphorous and Potassium in the soil samples signifies that the soil of the area is fertile.	Summary of baseline study of Soil is given in Section 3.7.1 (Page No. 734), Chapter-3 of EIA Report.
	o	No. of monitoring stations including project site wrt Noise.	Noise Level was Monitored at 10 Residential Locations, 5 Commercial Area (Transportation) Locations and 11 Industrial Locations (including project site) within10 km Radius.	Please refer Section 3.5 (Page No. 724), Chapter-3 of EIA Report.
	p	Conclusion of the Monitoring during baseline study of Noise	Based on noise level data obtained during the survey for residential area and industrialarea, it is interpreted that noise levels are within the standard norms prescribed by CPCB.	Section 3.5, Chapter-3 of EIA report.
	q	Any other details: **a) Details of carbon footprint:** **<u>When LDO Oil is used:</u>** Scope1 Direct GHG emissions a) Fossil fuel emissions: Diesel & LDO Total Scope 1 emissions (t CO2 eq. /year) = **7252.76** t CO2 eq. /year Scope 2 emissions: Electricity Total Scope 2 emissions (t CO2 eq. /year)= **22027.75** t CO2 eq. /year Scope 3 emissions : Indirect GHG emissions Total Scope 3 emissions (t CO2 eq. /year)= **1618.937** t CO2 eq. /year Total emissions (Scope 1 + Scope 2 + Scope 3): **37166.49** t CO2 eq. /year Mitigation Measures Carbon sequestration: Emissions that will be reduced (t CO2 eq./year) (Inside trees-4158 Nos.): 4238.843 t CO2 eq./year), Solar plant (250 kWp): **342 t CO2 eq./year,** Carbon sequestration by plants (Outside premises – 6100 trees) & Solar energy (250 kWp) : **6576.096 t CO2 eq./year** Total emissions reduction: **11081.18 t CO2 eq./year** base case net emissions – proposed case net emission= 19818.25 t CO2 eq. /year The emission reduction percentage: 35.86 %		

When Natural Gas is used

Scope1

Direct GHG emissions

a) Fossil fuel emissions: Diesel & Natural Gas

Total Scope 1 emissions (t CO2 eq. /year) = **12371.94** t CO2 eq. /year

Scope 2 emissions: Electricity

Total Scope 2 emissions (t CO2 eq. /year)= **22027.75** t CO2 eq. /year

Scope 3 emissions : Indirect GHG emissions

Total Scope 3 emissions (t CO2 eq. /year)= **1618.937** t CO2 eq. /year

Total emissions (Scope 1 + Scope 2 + Scope 3): **36018.627**t CO2 eq. /year

Mitigation Measures

Carbon sequestration: Emissions that will be reduced (t CO2 eq./year)

(Inside trees-4158 Nos.): 4238.843 t CO2 eq./year), Solar plant (250 kWp): **342 t CO2 eq./year,** Carbon sequestration by plants (Outside premises – 6100 trees) & Solar energy (250 kWp) : **6576.096 t CO2 eq./year**

Total emissions reduction: 11081.189 t CO2 eq. /year

base case net emissions – proposed case net emission = 24937.44 t CO2 eq. /year

The emission reduction percentage: **30.76%**

When Agro Waste is used

Scope1

Direct GHG emissions

a) Fossil fuel emissions: Diesel & Agro waste

Total Scope 1 emissions (t CO2 eq. /year) = **291.46** t CO2 eq. /year

Scope 2 emissions: Electricity

Total Scope 2 emissions (t CO2 eq. /year)= **22027.75** t CO2 eq. /year

Scope 3 emissions: Indirect GHG emissions

Total Scope 3 emissions (t CO2 eq. /year)= **1618.937** t CO2 eq. /year

Total emissions (Scope 1 + Scope 2 + Scope 3): **23938.147**t CO2 eq. /year

Mitigation Measures

Carbon sequestration: Emissions that will be reduced (t CO2 eq./year)

(Inside trees-4158 Nos.): 4238.843 t CO2 eq./year), Solar plant (250 kWp): **342 t CO2 eq./year,** Carbon sequestration by plants (Outside premises – 6100 trees) & Solar energy (250 kWp) : **6576.096 t CO2 eq./year**

Total emissions reduction: 11081.189 t CO2 eq. /year

base case net emissions – proposed case net emission = 2125.837 t CO2 eq. /year

The emission reduction percentage: **46.29** %

Considering Incinerator emissions

Scope1

Direct GHG emissions

a) Fossil fuel emissions: PNG & LDO

Total Scope 1 emissions (t CO2 eq. /year) = **565.8** t CO2 eq. /year

Scope 2 emissions: Electricity
Total Scope 2 emissions (t CO2 eq. /year)= **22027.75** t CO2 eq. /year

Scope 3 emissions: Indirect GHG emissions
Total Scope 3 emissions (t CO2 eq. /year)= **1618.937** t CO2 eq. /year

Total emissions (Scope 1 + Scope 2 + Scope 3): **24215.487** t CO2 eq. /year
Mitigation Measures
Carbon sequestration: Emissions that will be reduced (t CO2 eq./year)
(Inside trees-4158 Nos.): 4238.843 t CO2 eq./year), Solar plant (250 kWp): **342 t CO2 eq./year,** Carbon sequestration by plants (Outside premises – 6100 trees) & Solar energy (250 kWp) : **6576.096 t CO2 eq./year**

Total emissions reduction: 11081.189 t CO2 eq. /year
base case net emissions – proposed case net emission = 13134.298 t CO2 eq. /year
The emission reduction percentage: **45.76%**

b) Details of water footprint:

Blue Water Footprint-

Blue Water Evaporation:

Evaporation losses from process = 0

Evaporation losses from Boiler and cooling tower = 150 KLD= 54000

KL/Year

Evaporation losses in conveyance system = 0

Blue water evaporation = 0+54000 +0 = 54000 KL/Year

Blue water Incorporation:

Water required in the process =280 KLD = 100800 KL/Year

Water required in the Boiler and cooling tower = 325

KLD= 117000 KL/Year Water requirement for domestic

use =55 KLD= 19800 KL/Year

Water requirement for gardening = 50 KLD= 18000 KL/Year Water

requirement for washing = 50 KLD= 18000 KL/Year

Water requirement for scrubbing = 120 KLD = 43200 KL/Year

Water requirement for incinerator scrubber= 220 KLD=

79200 KL/Year

Blue water Incorporation = 100800+117000+19800+18000+18000+43200 + 79200= 396000 KL/Year

Lost Return flow = 0
Recycled water used = 608 KLD= 222480 KL/Year

WFproc, blue= 54000+ 396000-(218880) = 231120 KL/Year

Green Water Footprint-

Evapo-transpiration Rate at the nearest station Anand (Potential Evapo- transpiration estimation for Indian conditions:

Improving accuracy through calibration coefficients) = 3.76

mm/day = 37.6 m3/ha-day Total area of green belt = 5.04 ha

Green water evapo-transpiration = 5.04 ha. * 37.6 = 189.50 KL/Day

=68221.44 KL/Year

WF proc, green = 68221.44 + 0 (No cultivation of any crop) =

68221.44 KL/Year

WF proc, green = 68221.44 KL/Year

Grey Water Footprint-

723 m3/ day of effluent is generated.

Disposed water is of standard parameters, so water required to rejuvenate polluted water will be zero.

Hence Grey Water Footprint = 0

Total Water Footprint =231120 + 68221.44 + 0 = 299341.44 KL/Year
Total Water footprint = 299341.44 KL/Year

Blue Water Footprint is the most significant amongst three i.e., 73.12 %

c) Details of carbon sequestration:

Total carbon sequestered through trees (i.e. 4158 tress within the premises) = 4238.84 t CO2 eq. /year (**Reduction begins from Year 2027-28)**
Solar plant (250 kWp) within the plant premises= 342t CO2 eq. /year (**Reduction begins from Year 2023-24)**

CER Activity

CER activities plantation (4000 Nos. of trees) & (2100Nos. of trees for beatification near pond) = 4170.6835t CO2 eq. /year (**Reduction begins from Year 2029-30)**

Solar energy (250 kWp) = 177.84t CO2 eq. /year (**Reduction begins from Year 2029-30)**
The total avoided emissions= 8929.36 t CO2 eq./year

d) Details of roof top rain water harvesting and reuse within premises:
NotApplicable

r Details of Schedule-I species and its conservation plan, if any

Sr. No.	Animal Type	Scientific Name (Zoological Name)	Local Name	WPA Status	IUCN Status
1	Oriental honey buzzard	*Pernis ptilorhynchus*	Madhiyo baj	I	LC
2	Black kite	*Milvus migrans*	Samadi	I	LC
3	Shikra	*Accipiter badius*	Shakro	I	LC
4	Indian peafowl	*Pavo cristatus*	Mor	I	LC
5	Black-shouldered kite	*Elanus axillaris*	Kapasi	I	LC

Cost of Conservation Plan will be – 6,50,000/-

Conservation Plan has been submitted to PCCF, Chief Wildlife Warden, Govt. of Gujarat State, Aranya Bhavan, Sector-10, Gandhinagar Dated 23/11/2022.

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4) **RISK ANALYSIS & ITS MITIGATION MEASURES IN GENERAL AS GIVEN IN EIA REPORT**

- From the Risk Assessment studies conducted, it would be observed that by and large, the risks are confined within the factory boundary walls.
- Based on these studies company has been proposed to plan its facility sitting as well as location of operator cabin, open area, etc.
- Company has to increase awareness programme in the surrounding vicinity and educate people for safe evacuation at the time of toxic release.
- A HAZOP study to be carried out for all product plant and storage facilities.
- Induction safety course to be prepared and trained all new employees before starting duties in plant.

5) **PRODUCT PROFILE AND BRIEF NOTE OF PRODUCT PROFILE**

Sr. No.	MATERIAL NAME	QUANTITY (MT/ANNUM)	QUANTITY (MT/MONTH)	CAS NO.	END USE
A. QUATERNARY HYDROXIDES PRODUCTS					
1(A)	TETRAMETHYL AMMONIUM HYDROXIDE (BY DMC ROUTE) OR CATALYST TQ1H	**12000**	**1000**	75-59-2	Use as phase transfer catalyst for making of APIs, epoxy resins
1(B)	TETRAMETHYL AMMONIUM HYDROXIDE (by			75-59-2	Use as phase transfer catalyst for making of APIs, epoxy resins

		TMAC ROUTE) OR CATALYST TQ1H				
	1(C)	TETRAMETHYL AMMONIUM HYDROXIDE 25% METHANOL			75-59-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	2(A)	TETRAETHYL AMMONIUM HYDROXIDE (by DEC ROUTE) OR CATALYST TQ2H			77-98-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	2(B)	TETRAETHYL AMMONIUM HYDROXIDE (by TEAC ROUTE) OR CATALYST TQ2H			77-98-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	3	TRIETHYL METHYL AMMONIUM HYDROXIDE OR CATALYST TQ21H			109334-81-8	Use as phase transfer catalyst for making of APIs, epoxy resins
	4	BENZYLTRIMETHYL AMMONIUM HYDRDOXIDE OR CATALYST TQ71H			100-85-6	Use as phase transfer catalyst for making of APIs, epoxy resins
	5	DIETHYL DIMETHYL AMMONIUM HYDROXIDE OR CATALYST TQ12H			95500-19-9	Use as phase transfer catalyst for making of APIs, epoxy resins
	6	TETRAPROPYL AMMONIUM HYDROXIDE OR CATALYST TQ3H			4499-86-9	Use as phase transfer catalyst for making of APIs, epoxy resins
	7 (A)	TETRABUTYL AMMONIUM HYDROXIDE OR CATALYST TQ4H			2052-49-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	7 (B)	TETRA BUTYL AMMONIUM HYDROXIDE 40% METHANOL SOL.			2052-49-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	7 (C)	TQ4H TETRA BUTYL AMMONIUM HYDROXIDE 40% SOL.			2052-49-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	7 (D)	TQ4H TETRA BUTYL AMMONIUM HYDROXIDE 55% SOL.			2052-49-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	8	DIMETHYL DIPROPYL AMMONIUM HYDROXIDE OR CATALYST TQ31H			836597-65-0	Use as phase transfer catalyst for making of APIs, epoxy resins
	9	HEXAMETHANIUM			556-81-	Use as phase transfer

			DIHYDROXIDE OR CATALYST TQ62H			0	catalyst for making of APIs, epoxy resins
		10	ADAMANTYLTRIMETHY ADAMANTYL AMMONIUM HYDROXIDE			53075-09-5	Use as phase transfer catalyst for making of APIs, epoxy resins
		11	CYCLOHEXYLTRIMETHY CYCLOHEXYL AMMONIUM HYDROXIDE OR CATALYST			7732-18-5	Use as phase transfer catalyst for making of APIs, epoxy resins
		12	Cychlohexayl dimethyl ethyl Ammonium Hydroxide			3637-26-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		13	1,1,3,5-Tetra Methyl Piperidinium Hydroxide			244049-03-4	Use as phase transfer catalyst for making of APIs, epoxy resins
		14	1,3-BIS(1-ADAMANTYL) IMIDAZOLIUM HYDROXIDE 20% SOLUTION			286014-42-4	Use as phase transfer catalyst for making of APIs, epoxy resins
		15	N-ETHYL-N-(3,3,5-TRIMETHYL CYCLOHEXYL) PYRROLIDINIUM HYDROXIDE 20% SOLUTION			472976-63-9	Use as phase transfer catalyst for making of APIs, epoxy resins
		16	Cyclohexane bis(1,4-trimethyl ammonium hydroxide (TQ66H)			2549-93-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		17	1,1,3,5-Tetra Methyl Piperidinium Hydroxide (Lutidine route)			244049-03-4	Use as phase transfer catalyst for making of APIs, epoxy resins
		18	1,1-Diethyl-2,6-dimethyl piperidinium hydroxide (TQ52H)			19072-57-2	Use as phase transfer catalyst for making of APIs, epoxy resins
		19	1,4-DI(1-AZONIABICYCLO[2.2.2]OCTANE)BUTYL DIHYDROXIDE.			94630-50-9	Use as phase transfer catalyst for making of APIs, epoxy resins
		20	CHOLINE HYDROXIDE			123-41-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		21	1-PROPANAMINIUM,2-HYDROXY-N-(2-HYDROXYETHYL)-N,N-DIMETHYL-, HYDROXIDE			113341-23-4	Use as phase transfer catalyst for making of APIs, epoxy resins
		22	TETRA BUTYL PHOSPHONIUM HYDROXIDE			14518-69-5	Use as phase transfer catalyst for making of APIs, epoxy resins

	23	TETRA ETHYL PHOSPHONIUM HYDROXIDE			25826-24-8	Use as phase transfer catalyst for making of APIs, epoxy resins
	24	ISOPROPYLTRIMETHYLAMMONIUM HYDROXIDE			10424-66-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	25	DIISOPROPYLDIMETHYL AMMONIUM HYDROXIDE			81137-60-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	26	DIISOPROPYLIMIDAZOLIUM HYDROXIDE			139143-09-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	27	1H-IMIDAZOLIUM, 1,2-DIMETHYL-3-[(4-METHYL PHENYL)METHYL] HYDROXIDE			1886013-15-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	28	HEXA-N-METHYL-N,N'-BUTANEDIYL-DI-AMMONIUM, HYDROXIDE			117986-88-6	Use as phase transfer catalyst for making of APIs, epoxy resins
	29	1,4-BIS(N-METHYLPIPERIDINIUM)BUTANE, HYDROXIDE			112309-98-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	30	N,N,N-TRIMETHYL-(-)–CIS-MYRTANYLANMMONIUM(I) HYDROXIDE 25%			53075-09-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	31	1-Adamantyl-6-Hexadecyl-1,1,6,6-Tetramethyl Pentandiammonium Hydroxide (TD54H)			6240-11-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	32	N-Butyl-N-Cyclohexyl Pyrrolidinium Hydroxide (TQ46H)			489461-24-7	Use as phase transfer catalyst for making of APIs, epoxy resins
	33	1-Hexyl-6-Behenyl,1,1,6,6-Tetramethyl Hexandiammonium Hydroxide			51857-17-1	Use as phase transfer catalyst for making of APIs, epoxy resins
	34	1,4-Butyl Bis(N-Methyl pyrrolinium) di hydroxide			109438-12-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	35	1,5-Pentyl Bis(N-Methyl pyrrolinium) di hydroxide			131108-09-3	Use as phase transfer catalyst for making of APIs, epoxy resins
	36	N-Methyl N-propyl Piperdinium hydroxide (TQ54H)			608140-12-1	Use as phase transfer catalyst for making of APIs, epoxy resins
	37	1,5-Pentanediamine N,N,N,N,N,N-			462-94-2	Use as phase transfer catalyst for making of

		hexapropyl-DIHYDROXIDE				APIs, epoxy resins
	38	N,N,N-Octapropyl N,N-Dipentyl ammonium Hydroxide			836597-65-0	Use as phase transfer catalyst for making of APIs, epoxy resins
	39	4,7-methano-1-H-indene-5-aminium-octahydro-N,N,N-trimethyl-, hydroxide			6004-38-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	40	ISOPROPYL TRIMETHYL AMMONIUM HYDROXIDE			109334-81-8	Use as phase transfer catalyst for making of APIs, epoxy resins
	41	DIISOPROPYL DIMETHYL AMMONIUM HYDROXIDE			95500-19-9	Use as phase transfer catalyst for making of APIs, epoxy resins
	42	4-AZA-1-AZONIABICYCLO[2.2.2]OCTANE, 1,1′-[1,4-PHENYLENEBIS(METHYLENE)] BIS-, DIHYDROXIDE (9CI)			280-57-9	Use as phase transfer catalyst for making of APIs, epoxy resins
	43	PYRROLIDINIUM, 1,1′-[1,4-PHENYLENEBIS(METHYLENE)]BIS [1-PROPYL-, HYDROXIDE (1:2) (ACI)			2378143-58-7	Use as phase transfer catalyst for making of APIs, epoxy resins
	44	PYRROLIDINIUM, 1,1′-[1,4-PHENYLENEBIS(METHYLENE)] BIS[1-METHYL-, HYDROXIDE (1:2) (ACI)			2378143-58-7	Use as phase transfer catalyst for making of APIs, epoxy resins
	B. ELECTROLYTES					
	45	TETRAETHYLAMMONIUM TETRAFLUOROBORATE SOLUTION	**9600**	**800**	429-06-1	Use as etching cleaning agents for semiconductor chip making and as structure directing agent for zeolite making, Petrochemical Industries
	46	TRIETHYL METHYLAMMONIUM TETRAFLUOROBORATE SOLUTION			368-39-8	Use as etching cleaning agents for semiconductor chip making and as structure directing agent for zeolite making, Petrochemical Industries
	47	5-AZONIASPIRO[4.4]NONANE TETRAFLUOROBOR			129211-47-8	Use as etching cleaning agents for semiconductor chip making and as structure directing agent

		ATE SOLUTION				for zeolite making, Petrochemical Industries
	48	1-BUTYL-3-METHYL IMIDAZOLIUM TETRAFLUOROBORATE SOLUTION			85100-77-2	Use as etching cleaning agents for semiconductor chip making and as structure directing agent for zeolite making, Petrochemical Industries
	49	1-ETHYL-3-METHYL IMIDAZOLIUM TETRAFLUOROBORATE SOLUTION			143314-16-3	Use as etching cleaning agents for semiconductor chip making and as structure directing agent for zeolite making, Petrochemical Industries
	50	N,N-DIMETHYL PYRROLIDINIUM TETRAFLOUROBORATE (DMPBF4) KOH ROUTE			117947-85-0	Use as etching cleaning agents for semiconductor chip making and as structure directing agent for zeolite making, Petrochemical Industries
	51	N,N-DIMETHYL PYRROLIDINIUM TETRAFLOURO BORATE (DMPBF4) DMP-OH ROUTE			117947-85-0	Use as etching cleaning agents for semiconductor chip making and as structure directing agent for zeolite making, Petrochemical Industries
	52	5-AZONIASPIRO[4.4]NONANE TETRAFLUORO BORATE (AZSPBF4) KOH ROUTE			129211-47-8	Use as etching cleaning agents for semiconductor chip making and as structure directing agent for zeolite making, Petrochemical Industries
	53	5-AZONIASPIRO[4.4]NONANE TETRAFLUORO BORATE (AZSPBF4) AZSP-OH ROUTE			129211-47-8	Use as etching cleaning agents for semiconductor chip making and as structure directing agent for zeolite making, Petrochemical Industries
	54	LITHIUM HEXA FLUOROPHOSPHATE			21324-40-3	Use as etching cleaning agents for semiconductor chip making and as structure directing agent for zeolite making, Petrochemical Industries
	55	ETHYL CARBONATE			35179-98-7	Use as etching cleaning agents for semiconductor chip making and as structure directing agent for zeolite making, Petrochemical Industries
	56	HEXAFLUORO PHOSPHORIC ACID 50 % SOLUTION IN WATER			7664-38-2	Use as etching cleaning agents for semiconductor chip making and as structure directing agent

						for zeolite making, Petrochemical Industries
	57	Tetra Phenyl Phosphonium Phenolate			2001-45-8	Use as etching cleaning agents for semiconductor chip making and as structure directing agent for zeolite making, Petrochemical Industries
	58	2,4,6-TRIBROMO PHENOL			118-79-6	Use as etching cleaning agents for semiconductor chip making and as structure directing agent for zeolite making, Petrochemical Industries
	59	4-BROMO BIPHENYL			92-66-0	Use as etching cleaning agents for semiconductor chip making and as structure directing agent for zeolite making, Petrochemical Industries
	60	TETRA BROMO BISPHENOL - A			79-94-7	Use as etching cleaning agents for semiconductor chip making and as structure directing agent for zeolite making, Petrochemical Industries
	C. PHASE TRANSFER CATALYST					
	61	N-ETHYL JULOLIDINIUM BROMIDE	**12000**	**1000**	1906-79-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	62	DICETYL DIMETHYL AMMONIUM CHLORIDE			7173-51-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	63	1-ALLYL-3-METHYL IMIDAZOLIUM CHLORIDE			65039-10-3	Use as phase transfer catalyst for making of APIs, epoxy resins
	64	CYCHLOHEXYL DIMETHYL ETHYL AMMONIUM BROMIDE			1006061-38-6	Use as phase transfer catalyst for making of APIs, epoxy resins
	65	(3-CHLORO-2-HYDROXYPROPYL) LAURYL DIMETHYL AMMONIUM CHLORIDE SOL			3327-22-8	Use as phase transfer catalyst for making of APIs, epoxy resins
	66(A)	BENZYLTRIMETHYL AMMONIUM CHLORIDE / BENZYLTRIMETHYL AMMONIUM CHLORIDE SOLUTION			56-93-9	Use as phase transfer catalyst for making of APIs, epoxy resins
	66(B)	BENZYL TRIMETHYL AMMONIUM			56-93-9	Use as phase transfer catalyst for making of

		CHLORIDE POWDER				APIs, epoxy resins
	67	DIALLYLDIMETHYL AMMONIUM CHLORIDE			7398-69-8	Use as phase transfer catalyst for making of APIs, epoxy resins
	68	1,3-DIDODECYL-2-METHYLIMIDAZOLIUM CHLORIDE			70862-65-6	Use as phase transfer catalyst for making of APIs, epoxy resins
	69	BENZYLTRIPHENYL PHOSPHONIUM CHLORIDE			1100-88-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	70	CETYLTRIMETHYL AMMONIUM BROMIDE			57-09-0	Use as phase transfer catalyst for making of APIs, epoxy resins
	71	CETYLTRIMETHYL AMMONIUM CHLORIDE / CETYL TRIMETHYL AMMONIUM CHLORIDE SOLUTION OR CETRIMONIUM CHLORIDE OR COPOLY TCPC CAT / HEXADECYL TRIMETHYL AMMONIUM CHLORIDE			112-02-7	Use as phase transfer catalyst for making of APIs, epoxy resins
	72	ETHYLTRIPHENYL PHOSPHONIUM BROMIDE			1530-32-01	Use as phase transfer catalyst for making of APIs, epoxy resins
	73	LAURYL PYRIDINIUM CHLORIDE / DODECYL PYRIDINIUM CHLORIDE			104-74-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	74	METHOXY METHYLTRIPHENYL PHOSPHONIUM CHLORIDE			4009-98-7	Use as phase transfer catalyst for making of APIs, epoxy resins
	75 (A)	METHYLTRIBUTYL AMMONIUM CHLORIDE 75%			56375-79-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	75 (B)	METHYL TRIBUTYL AMMONIUM CHLORIDE 50%			56375-79-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	75 (C)	METHYL TRIBUTYL AMMONIUM CHLORIDE POWDER			56375-79-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	76	METHYLTRIOCTYL AMMONIUM CHLORIDE 85% / 90% / 95%			5137-55-3	Use as phase transfer catalyst for making of APIs, epoxy resins
	77	METHYLTRIPHENYL			1779-	Use as phase transfer

			PHOSPHONIUM BROMIDE			49-3	catalyst for making of APIs, epoxy resins
		78	PHENYLTRIMETHYL AMMONIUM CHLORIDE			138-24-9	Use as phase transfer catalyst for making of APIs, epoxy resins
		79 (A)	TETRABUTYL AMMONIUM ACETATE / TETRABUTYL AMMONIUM ACETATE SOLUTION			10534-59-5	Use as phase transfer catalyst for making of APIs, epoxy resins
		79 (B)	TETRA BUTYL AMMONIUM ACETATE 50%			5137-55-3	Use as phase transfer catalyst for making of APIs, epoxy resins
		80 (A)	TETRABUTYLAMMONIUM BROMIDE / TETRABUTYLAMMONIUM BROMIDE SOLUTION			1643-19-2	Use as phase transfer catalyst for making of APIs, epoxy resins
		80 (B)	TETRA BUTYL AMMONIUM BROMIDE 50% SOL.			1643-19-2	Use as phase transfer catalyst for making of APIs, epoxy resins
		80(C)	TETRA BUTYL AMMONIUM BROMIDE 75% SOL.			1643-19-2	Use as phase transfer catalyst for making of APIs, epoxy resins
		80 (D)	TETRA BUTYL AMMONIUM BROMIDE WITH 3.5% SILICA			1643-19-2	Use as phase transfer catalyst for making of APIs, epoxy resins
		81 (A)	TETRABUTYL AMMONIUM CHLORIDE / TETRABUTYL AMMONIUM CHLORIDE SOLUTION			37451-68-6	Use as phase transfer catalyst for making of APIs, epoxy resins
		81 (B)	TETRA BUTYL AMMONIUM CHLORIDE 50% SOL.			37451-68-6	Use as phase transfer catalyst for making of APIs, epoxy resins
		82	TETRABUTYLAMMONIUM FLUORIDE TRIYDRATE			87749-50-6	Use as phase transfer catalyst for making of APIs, epoxy resins
		83	TETRABUTYLAMMONIUM FLURODIE TRIHYDRATE 1 M IN THF			87749-50-6	Use as phase transfer catalyst for making of APIs, epoxy resins
		84	TETRABUTYLAMMONIUM HYDROGEN SULPHATE			32503-27-8	Use as phase transfer catalyst for making of APIs, epoxy resins
		85	TETRABUTYLAMMONIUM IODIDE			311-28-4	Use as phase transfer catalyst for making of APIs, epoxy resins

	86	TRIETHYL METHYL AMMONIUM CHLORIDE			75-57-0	Use as phase transfer catalyst for making of APIs, epoxy resins
	87	TETRAMETHYL AMMONIUM HYDROXIDE PENTAHYDRATE			75-59-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	88	TETRAOCTYL AMMONIUM BROMIDE			14866-33-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	89	TETRAPROPYL AMMONIUM BROMIDE / TETRAPROPYL AMMONIUM BROMIDE SOLUTION			1941-30-6	Use as phase transfer catalyst for making of APIs, epoxy resins
	90	TETRAETHYL AMMONIUM BROMIDE / TETRAETHYL AMMONIUM BROMIDE SOLUTION			71-91-0	Use as phase transfer catalyst for making of APIs, epoxy resins
	91	PROPYL TRIPHENYL PHOSPHONIUM BROMIDE			2091-46-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	92	TRI ETHYL BENZYL AMMONIUM CHLORIDE 50% AQ. SOLUTION			56-37-1	Use as phase transfer catalyst for making of APIs, epoxy resins
	93	TRIMETHYLSULPHONIUM BROMIDE			3084-53-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	94	TRIMETHYL BENZYL AMMONIUM DICHLOROIODIE			56-93-9	Use as phase transfer catalyst for making of APIs, epoxy resins
	95	BENZYL TRIBUTYL AMMONIUM BROMIDE			25316-59-0	Use as phase transfer catalyst for making of APIs, epoxy resins
	96	BENZYL TRIBUTYL AMMONIUM CHLORIDE			23616-79-7	Use as phase transfer catalyst for making of APIs, epoxy resins
	97	BENZYL TRIPHENYL PHOSPHONIUM BROMIDE			1449-46-3	Use as phase transfer catalyst for making of APIs, epoxy resins
	98	BENZYL TRIPHENYL PHOSPHONIUM CHLORIDE			1100-88-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	99	CETYL DIMETHYL BENZYL AMMONIUM BROMIDE			1119-97-7	Use as phase transfer catalyst for making of APIs, epoxy resins
	100	CETYL DIMETHYL BENZYL AMMONIUM			122-18-9	Use as phase transfer catalyst for making of

			CHLORIDE				APIs, epoxy resins
		101	DODECYL TRIMETHYL AMMONIUM CHLORIDE / LAURYL TRIMETHYL AMMONIUM CHLORIDE			112-00-5	Use as phase transfer catalyst for making of APIs, epoxy resins
		102	DODECYL TRIMETHYL AMMONIUM BROMIDE / LAURYL TRIMETHYL AMMONIUM BROMIDE			1119-94-4	Use as phase transfer catalyst for making of APIs, epoxy resins
		103	METHYLTRIPHENYL PHOSPHONIUM CHLORIDE			1031-15-8	Use as phase transfer catalyst for making of APIs, epoxy resins
		104	METHYLTRIPHENYL PHOSPHONIUM IODIDE			2065-66-9	Use as phase transfer catalyst for making of APIs, epoxy resins
		105	TETRA PHENYL PHOSPHONIUM BROMIDE			2751-90-8	Use as phase transfer catalyst for making of APIs, epoxy resins
		106 (A)	TETRAMETHYL AMMONIUM CHLORIDE			75-57-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		106 (B)	TETRA METHYL AMMONIUM CHLORIDE 50% SOLUTION			75-57-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		107	TRIETHYL BUTYL AMMONIUM BROMIDE			1643-19-2	Use as phase transfer catalyst for making of APIs, epoxy resins
		108	BENZYLTRIPHENYL PHOSPHONIUM IODIDE			1449-46-3	Use as phase transfer catalyst for making of APIs, epoxy resins
		109	ETHYLTRIPHENYL PHOSPHONIUM CHLORIDE			1530-32-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		110	ETHYLTRIPHENYL PHOSPHONIUM IODIDE			4736-60-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		111	BUTYL TRIPHENYL PHOSPHONIUM BROMIDE			1779-51-7	Use as phase transfer catalyst for making of APIs, epoxy resins
		112	BUTYL TRIPHENYL PHOSPHONIUM CHLORIDE			13371-17-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		113	ETHYL TRIPHENYL PHOSPHONIUM ACETATE SOLUTION			35835-94-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		114	ETHYL TRIPHENYL			35835-	Use as phase transfer

			PHOSPHONIUM ACID ACETATE / ETHYL TRIPHENYL PHOSPHONIUM ACID ACETATE SOLUTION			94-0	catalyst for making of APIs, epoxy resins
		115	TRIMETHYLSULPHONIUM IODIDE			2181-42-2	Use as phase transfer catalyst for making of APIs, epoxy resins
		116	PHENYL TRIMETHYL AMMONIUM BROMIDE			4207-56-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		117	PHENYL TRIMETHYL AMMONIUM TRIBROMIDE			4207-56-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		118	TETRABUTYL AMMONIUM CHLORIDE MONOHYDRATE			37451-68-6	Use as phase transfer catalyst for making of APIs, epoxy resins
		119	METHYL TRIALKYL(C8,C10) AMMONIUM CHLORIDE 80% / 90% OR TCPC-CAT-18			72749-59-8	Use as phase transfer catalyst for making of APIs, epoxy resins
		120	TETRAMETHYL AMMONIUM CARBONATE			58345-96-3	Use as phase transfer catalyst for making of APIs, epoxy resins
		121	MYRISTYL DIMETHYL BENZYL AMMONIUM CHLORIDE			139-08-2	Use as phase transfer catalyst for making of APIs, epoxy resins
		122	TRIETHYL METHYL AMMONIUM BROMIDE			57-09-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		123	TETRAETHYLAMMONIUM CHLORIDE			56-34-8	Use as phase transfer catalyst for making of APIs, epoxy resins
		124	TETRAETHYL SULPHONIUM IODIDE			1774-47-6	Use as phase transfer catalyst for making of APIs, epoxy resins
		125	(3-CHLORO-2-HYDROXYPROPYL) DODECYL DIMETHYL AMMONIUM CHLORIDE SOLUTION			3327-22-8	Use as phase transfer catalyst for making of APIs, epoxy resins
		126	(3-CHLORO-2-HYDROXYPROPYL) DODECYL DIMETHYL AMMONIUM CHLORIDE			3327-22-8	Use as phase transfer catalyst for making of APIs, epoxy resins

			SOLUTION			
		127	DIDECYL DIMETHYL AMMONIUM CHLORIDE SOLUTION		7173-51-5	Use as phase transfer catalyst for making of APIs, epoxy resins
		128	DIDECYL DIMETHYL AMMONIUM BROMIDE SOLUTION		2390-68-3	Use as phase transfer catalyst for making of APIs, epoxy resins
		129	TETRABUTYL AMMONIUM NITRATE		1941-27-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		130	TETRABUTYL AMMONIUM NITRITE		26501-54-2	Use as phase transfer catalyst for making of APIs, epoxy resins
		131	HEXAMETHANIUM DICHLORIDE		60-25-3	Use as phase transfer catalyst for making of APIs, epoxy resins
		132	HEXAMETHANIUM DIBROMIDE		55-97-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		133	(3-CHLORO-2-HYDROXYPROPYL) TRIMETHYL AMMONIUM CHLORIDE		3327-22-8	Use as phase transfer catalyst for making of APIs, epoxy resins
		134	2,3 EPOXY PROPYL TRI METHYL AMMONIUM CHLORIDE		3033-77-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		135	TETRADECYL TRIMETHYL AMMONIUM BROMIDE		1119-97-7	Use as phase transfer catalyst for making of APIs, epoxy resins
		136	TETRADECYL TRIMETHYL AMMONIUM BROMIDE		1119-97-7	Use as phase transfer catalyst for making of APIs, epoxy resins
		137	LAURYL TRIMETHYL AMMONIUM CHLORIDE 50% SOLUTION		112-00-5	Use as phase transfer catalyst for making of APIs, epoxy resins
		138	TETRA BUTYL AMMONIUM DIHYDROGEN ORTHO PHOSPHATE		5574-97-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		139	PROPYL TRIPHENYL PHOSPHONIUM BROMIDE		2091-46-5	Use as phase transfer catalyst for making of APIs, epoxy resins
		140	ETHYL PYRIDINIUM BROMIDE		1906-79-2	Use as phase transfer catalyst for making of APIs, epoxy resins
		141	BUTYL PYRIDINIUM		874-80-	Use as phase transfer

			BROMIDE			6	catalyst for making of APIs, epoxy resins
		142	TRIMETHYL PROPYL AMMONIUM BROMIDE			57-09-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		143	N-BENZYL QUINOLINIUM CHLORIDE			67174-25-8	Use as phase transfer catalyst for making of APIs, epoxy resins
		144	DIALLYL DIMETHYL AMMONIUM CHLORIDE			26062-79-3	Use as phase transfer catalyst for making of APIs, epoxy resins
		145	(4-CARBOXYBUTYL)TRIPHENYLPHOSPHONIUM BROMIDE			17814-85-6	Use as phase transfer catalyst for making of APIs, epoxy resins
		146	TETRAMETHYL AMMONIUM ACETATE			10581-12-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		147	EPOXY PROPYL TRIMETHYL AMMONIUM CHLORIDE			3033-77-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		148	TETRA BUTYL AMMONIUM BENZOATE			18819-89-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		149	TETRA ETHYL AMMONIUM BENZOATE			1863-63-4	Use as phase transfer catalyst for making of APIs, epoxy resins
		150	ISOBUTYL TRIPHENYL PHOSPHONIUM BROMIDE			22884-29-3	Use as phase transfer catalyst for making of APIs, epoxy resins
		151	1,4-DI(1-AZONIABICYCLO[2.2.2]OCTANE)BUTYL DIBROMIDE			90023-17-9	Use as phase transfer catalyst for making of APIs, epoxy resins
		152	CHOLINE CHLORIDE			67-48-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		153	BEHENYL TRIMETHYL AMMONIUM METHOSULPHATE + CETYL ALCOHOL 50:50			81646-13-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		154	TETRA ETHYL AMMONIUM FLUORIDE TRIHYDRATE			87749-50-6	Use as phase transfer catalyst for making of APIs, epoxy resins
		155	1-PROPANAMINIUM,2-HYDROXY-N-(2-HYDROXYETHYL)-			78182-00-0	Use as phase transfer catalyst for making of APIs, epoxy resins

			N,N-DIMETHYL-, CHLORIDE				
		156	1-PROPANIUM, 2-HYDROXY-N-(2-HYDROXYETHYL)-N,N,-DIMETHYL, ETHYL HEXANOATE			103969-80-8	Use as phase transfer catalyst for making of APIs, epoxy resins
		157	LAURYL DIMETHYL ETHYL AMMONIUM BROMIDE			3006-13-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		158	TETRABUTYLAMMONIUM-4-NITROPHENOLATE			3002-48-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		159	POLY - DIALLYL DIMETHYL AMMONIUM CHLORIDE 20% SOLUTION IN WATER			26062-79-3	Use as phase transfer catalyst for making of APIs, epoxy resins
		160	TETRA BUTYL PHOSPHONIUM FLUORIDE			87749-50-6	Use as phase transfer catalyst for making of APIs, epoxy resins
		161	BENZALKONIUM CHLORIDE DIHYDRATE SOLID (C-12 3%, C14 95%, C-16 2%) (M.WT.: 408)			8001-54-5	Use as phase transfer catalyst for making of APIs, epoxy resins
		162	TETRABUTYL PHOSPHONIUM BROMIDE			3115-68-2	Use as phase transfer catalyst for making of APIs, epoxy resins
		163	TRIPHENYL PHOSPHONIUM HYDROBROMIDE			6399-81-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		164	CETYL TRIMETHYL AMMONIUM HYDROGEN SULFATE			68214-07-3	Use as phase transfer catalyst for making of APIs, epoxy resins
		165	ADAMANTYL TRIMETHYL AMMONIUM METHOSULFATE			1872227-49-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		166	1-BROMO-6-(TRIMETHYLAMMONIUM) HEXYL BROMIDE			32765-81-4	Use as phase transfer catalyst for making of APIs, epoxy resins
		167	PENTAMETHONIUM DIBROMIDE			541-20-8	Use as phase transfer catalyst for making of APIs, epoxy resins
		168	ACRYLOXYETHYL TRIMETHYL AMMONIUM CHLORIDE			44992-01-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		169	CYCLOHEXYLMETH			2065-	Use as phase transfer

		YLTRIPHENYL PHOSPHONIUM IODIDE			66-9	catalyst for making of APIs, epoxy resins
	170	1,4-BUTANEETHONIUM DICHLORIDE			121-54-0	Use as phase transfer catalyst for making of APIs, epoxy resins
	171	1,4-BUTANEETHONIUM DIBROMIDE			110-52-1	Use as phase transfer catalyst for making of APIs, epoxy resins
	172	TETRABUTYLPHOSPHONIUM BIFLUORIDE			23868-34-0	Use as phase transfer catalyst for making of APIs, epoxy resins
	173	TRIMETHYL CYCLOHEXYL METHYL AMMONIUM CHLORIDE			25728-39-6	Use as phase transfer catalyst for making of APIs, epoxy resins
	174	TRIMETHOXY SILYL PROPYL OCTADECYL DIMETHYL AMMONIUM CHLORIDE			27668-52-6	Use as phase transfer catalyst for making of APIs, epoxy resins
	175	HEPTYL PHOSPHONIUM IODIDE (2-OXOHEPTYL) PHOSPHONIUM IODIDE			59378-88-0	Use as phase transfer catalyst for making of APIs, epoxy resins
	176	PHENYL PHOSPHONIUM IODIDE (2-OXOPHENYLBUTYL) TRIPHENYL PHOSPHONIUM IODIDE			147820-38-0	Use as phase transfer catalyst for making of APIs, epoxy resins
	177	PHOSPHONIUM, [5-(ETHYLAMINO)-5-OXOPENTYL]TRIPHENYL-, BROMIDE (1:1)			1201226-16-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	178	PROLONIUM CHLORIDE			55636-09-4.	Use as phase transfer catalyst for making of APIs, epoxy resins
	179	ISOSTEARAMIDOPROPYL ETHYLDIMONIUM ETHOSULFATE (ISEE)			67633-63-0	Use as phase transfer catalyst for making of APIs, epoxy resins
	180	1,6-BIS(2,3-DIMETHYLIMIDAZOLE)HEXANE DIBROMIDE			1301266-98-7	Use as phase transfer catalyst for making of APIs, epoxy resins
	181	N,N',N''-TRIMETHYL			53075-	Use as phase transfer

			ADAMANTANIUM SULPHATE (2:1)			09-5	catalyst for making of APIs, epoxy resins
		182	N-ETHYLPYRIDINIUM BROMIDE 50% SOLUTION IN WATER			1906-79-2	Use as phase transfer catalyst for making of APIs, epoxy resins
		183	CYCLOHEXYL METHYL TRIPHENYL PHOSPHONIUM IODIDE			2065-66-9	Use as phase transfer catalyst for making of APIs, epoxy resins
		184	HEPTANE-2-ONE-TRIPHENYL PHOSPHONIUM IODIDE			61553-35-3	Use as phase transfer catalyst for making of APIs, epoxy resins
		185	LAURAMIDOPROPYL TRIMETHYLAMMONIUM METHYL SULPHATE			10595-49-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		186	1-ADAMANTYL-6-HEXADECYL-1,1,6,6-TETRAMETHYL PENTANDIAMMONIUM DIBROMIDE			6240-11-5	Use as phase transfer catalyst for making of APIs, epoxy resins
		187	N-BUTYL-N-CYCLOHEXYL PYRROLIDINIUM BROMIDE			93457-69-3	Use as phase transfer catalyst for making of APIs, epoxy resins
		188	1-HEXYL-6-BEHENYL,1,1,6,6-TETRAMETHYL HEXANDIAMMONIUM BROMIDE			938-66-5	Use as phase transfer catalyst for making of APIs, epoxy resins
		189	1-METHYL-3-ETHYL IMIDAZOLIUM CHLORIDE			65039-09-0	Use as phase transfer catalyst for making of APIs, epoxy resins
		190	N-METHYL-N-PROPYL PYRROLIDINIUM CHLORIDE			528818-82-8	Use as phase transfer catalyst for making of APIs, epoxy resins
		191	ETHYL TRIMETHYL AMMONIUM BROMIDE			2650-77-3	Use as phase transfer catalyst for making of APIs, epoxy resins
		192	TETRABUTYL AMMONIUM TRIBROMIDE			38932-80-8	Use as phase transfer catalyst for making of APIs, epoxy resins
		193	TETRAMETHYL AMMONIUM IODIDE			75-58-1	Use as phase transfer catalyst for making of APIs, epoxy resins
		194	BENZYL TRIMETHYL AMMONIUM BROMIDE			5350-41-4	Use as phase transfer catalyst for making of APIs, epoxy resins
		195	TETRA METHYL			64-20-0	Use as phase transfer

	AMMONIUM BROMIDE				catalyst for making of APIs, epoxy resins
196	METHYL TRIBUTYL AMMONIUM BROMIDE			37026-88-3	Use as phase transfer catalyst for making of APIs, epoxy resins
197	TRIETHYL AMMONIUM CHLORIDE			554-68-7	Use as phase transfer catalyst for making of APIs, epoxy resins
198	N-BUTYL PYRIDINIUM CHLORIDE			1124-64-7	Use as phase transfer catalyst for making of APIs, epoxy resins
199	CETYL TRIMETHYL AMMONIUM NITRATE			3084-33-1	Use as phase transfer catalyst for making of APIs, epoxy resins
200	TETRA ETHYL AMMONIUM IODIDE			68-05-3	Use as phase transfer catalyst for making of APIs, epoxy resins
201	TETRA BUTYL AMMONIUM TETRAFLUORO BORATE			429-42-5	Use as phase transfer catalyst for making of APIs, epoxy resins
202	CETYL DIMETHYL ETHYL AMMONIUM BROMIDE			124-03-8	Use as phase transfer catalyst for making of APIs, epoxy resins
203	BENZYL TRIMETHYL AMMONIUM TRIBROMIDE			111865-47-5	Use as phase transfer catalyst for making of APIs, epoxy resins
204	TETRA BUTYL AMMONIUM HEXAFLUROPHOSPHATE			3109-63-5	Use as phase transfer catalyst for making of APIs, epoxy resins
205	BENZYL TRIMETHYL AMMONIUM IODIDE			4525-46-6	Use as phase transfer catalyst for making of APIs, epoxy resins
206	TRIETHYL BENZYL AMMONIUM BROMIDE			5197-95-5	Use as phase transfer catalyst for making of APIs, epoxy resins
207	TETRA METHYL AMMONIUM HYDROGEN SULPHATE			80526-82-5	Use as phase transfer catalyst for making of APIs, epoxy resins
208	ADAMANTYL TRIMETHYL AMMONIUM CHLORIDE			593-81-7	Use as phase transfer catalyst for making of APIs, epoxy resins
D. FINE, SPECIALITY CHEMICALS & INTERMEDIATES					
209	TRIOCTYL AMINE OR TRIALKYL (C8,C10) AMINE OR ALAMINE 336 OR TRIALKYL(OCTYL, DECYL)AMINE	**12000**	**1000**	57176-40-6	Use as phase transfer catalyst for making of APIs, epoxy resins
210	3 - AMINO PROPYL DODECYL DIAMINE			2372-82-9	Use as phase transfer catalyst for making of

						APIs, epoxy resins
	211	TRILAURYLAMINE			102-87-4	Use as phase transfer catalyst for making of APIs, epoxy resins
	212	TRIDECYLAMINE			2869-34-3	Use as phase transfer catalyst for making of APIs, epoxy resins
	213	LAURYLDIMETHYLAMINE			112-18-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	214	MYRISTYLDIMETHYLAMINE			112-75-4	Use as phase transfer catalyst for making of APIs, epoxy resins
	215	CETYLDIMETHYLAMINE			112-69-6	Use as phase transfer catalyst for making of APIs, epoxy resins
	216	OCTYLDIMETHYLAMINE			7378-99-6	Use as phase transfer catalyst for making of APIs, epoxy resins
	217	DECYLDIMETHYLAMINE			1120-24-7	Use as phase transfer catalyst for making of APIs, epoxy resins
	218	ADAMANTANE			281-23-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	219	ADAMANTADINE			768-94-5	Use as phase transfer catalyst for making of APIs, epoxy resins
	220	ADAMANTYL DIMETHYL AMINE			3717-40-6	Use as phase transfer catalyst for making of APIs, epoxy resins
	221	TETRAMETHYL- 1,6-HEXANEDIAMINE			111-18-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	222	N,N-Dimethylcyclohexylmethylamine			98-94-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	223	BIS-(3-AMINOPROPYL) LAURYLAMINE			2372-82-9	Use as phase transfer catalyst for making of APIs, epoxy resins
	224	N,N-DIMETHYL PROPYL AMINE			109-55-7	Use as phase transfer catalyst for making of APIs, epoxy resins
	225	AZEPANE			111-49-9	Use as phase transfer catalyst for making of APIs, epoxy resins
	226	DIISOPROPYL METHYL AMINE			108-18-9	Use as phase transfer catalyst for making of APIs, epoxy resins
	227	N-PROPYL PYRROLIDINE			7335-07-1	Use as phase transfer catalyst for making of APIs, epoxy resins
	228	3-AMINO PYRIDINE			462-08-8	Use as phase transfer catalyst for making of

						APIs, epoxy resins
	229	2-CHLORO-N,N-DIMETHYLBENZYLAMINE			10175-31-2	Use as phase transfer catalyst for making of APIs, epoxy resins
	230	MORPHOLINE			110-91-8	Intermediate for pharma manufacturing
	231	1,2-DIETHOXY ETHNAE / ETHYL GLYME BY ETHYL CHLORIDE ROUTE			629-14-1	Intermediate for pharma manufacturing
	232	1,2-DIETHOXY ETHNAE / ETHYL GLYME BY ZEOLITE ROUTE			629-14-1	Intermediate for pharma manufacturing
	233	Diethyl Disulfide			110-81-6	Intermediate for pharma manufacturing
	234	CETRIMIDE			1119-97-7	Intermediate for pharma manufacturing
	235	CETRIMIDE STRONG SOLUTION 40%			1119-97-7	Intermediate for pharma manufacturing
	236	CETYL PYRIDINIUM CHLORIDE			123-03-5	Intermediate for pharma manufacturing
	237	MESETRONIUM ETHOSULPHATE			3006-10-8	Intermediate for pharma manufacturing
	238	BENZALKONIUM CHLORIDE 50% /80%			8001-54-5	Intermediate for pharma manufacturing
	239	BEHENTRIMONIUM CHLORIDE 50% / 70% / 80%			17301-53-0	Intermediate for pharma manufacturing
	240	CHLORHEXIDINE GLUCONATE			18472-51-0	Intermediate for pharma manufacturing
	241	BENZETHONIUM CHLORIDE			121-54-0	Intermediate for pharma manufacturing
	242	DIMETHYL 1,1-CYCLOPROPANE DICARBOXYLATE			6914-71-2	Intermediate for pharma manufacturing
	243	3-Bromo benzotriflouride (BBTF)			401-78-5	Intermediate for pharma manufacturing
	244	2,5-Diemthyl-1,4-phenylenediamine (DMPD)			6393-01-7	Intermediate for pharma manufacturing
	245	2-(4-PHENYLBENZOYL) BENZOIC ACID			42797-18-2	Intermediate for pharma manufacturing
	246	2,3-DICHLORO-6-NITROANILINE			65078-77-5	Intermediate for pharma manufacturing
	247	1,2-Dimethoxy Ethane (Mono Glyme) BY METHYL CHLORIDE ROUTE			110-71-4	Intermediate for pharma manufacturing
	248	1,2-Dimethoxy Ethane			110-71-	Intermediate for pharma

			(Mono Glyme) BY ZEOLITEROUTE			4	manufacturing
		249	HYDROXY AMINOADAMANTANE			702-82-9	Intermediate for pharma manufacturing
		250	DIGLYME BY METHYL CHLORIDE ROUTE			111-96-6	Intermediate for pharma manufacturing
		251	DIGLYME BY ZEOLITE ROUTE			111-96-6	Intermediate for pharma manufacturing
		252	1,6-DIBROMO HEXANE			629-03-8	Intermediate for pharma manufacturing
		253	ETHYL BROMIDE			74-96-4	Intermediate for pharma manufacturing
		254	8-BROMOOCTYL ACETATE			53596-81-9	Intermediate for pharma manufacturing
		255	9-BROMONONYL ACETATE			2490287-87-9	Intermediate for pharma manufacturing
		256	ORTHO CHLOROBENZOIC ACID			118-91-2	Intermediate for pharma manufacturing
		257	METHYL 5-NITRO-4-FLUORO BENZOATE			329-59-9	Intermediate for pharma manufacturing
		258	1,3-DIAMINO PROPANOL			616-29-5	Intermediate for pharma manufacturing
		259	CHOLINE BICARBONATE			78-73-9	Intermediate for pharma manufacturing
		260	DIMETHYLDISULPHIDE			624-92-0	Intermediate for pharma manufacturing
		261	ORTHO CHLORO BENZAMIDE			609-66-5	Intermediate for pharma manufacturing
		262	ORTHO CHLOROBENZONITRILE			873-32-5	Intermediate for pharma manufacturing
		263	2-METHYL-3-NITRO-ANISOLE			4837-88-1	Intermediate for pharma manufacturing
		264	METAPHENOXY BENZALDEHYDE			39515-51-0	Intermediate for pharma manufacturing
		265	3-TRIFLOUROMETHYL BENZALDEHYDE			454-89-7	Intermediate for pharma manufacturing
		266	1,3-DIMETHYL-5-PYRAZALONE			2749-59-9	Intermediate for pharma manufacturing
		267	1-BROMO-3,5-DIFLUOROBENZENE			461-96-1	Intermediate for pharma manufacturing
		268	SEMICARBAZIDE HYDROCHLORIDE			563-41-7	Intermediate for pharma manufacturing
		269	2,3-DICHLORO PYRIDINE			2402-77-9	Intermediate for pharma manufacturing
		270	1-FLOURO NAPHTHALENE			321-38-0	Intermediate for pharma manufacturing
		271	2-METHYL-5-NITRO-1H-IMIDAZOLE			696-23-1	Intermediate for pharma manufacturing

	272	METHOXYL AMINE HYDROCHLORIDE			593-56-6	Intermediate for pharma manufacturing
	273	1,3-DIMETHYL UREA			202-498-7	Intermediate for pharma manufacturing
	274	2-CHLORO-5-METHYL-P-PHENYLENE DIAMINE			5307-03-9	Intermediate for pharma manufacturing
	275	(2-CHLOROBENZYL) DIMETHYL AMINE			89-97-4	Intermediate for pharma manufacturing
	276	Ethyl 2-bromoisobutyrate			600-00-0	Intermediate for pharma manufacturing
	277	2,6-DICHLORO BENZOXAZOLE			3621-82-7	Intermediate for pharma manufacturing
	278	PARA-BROMO-TOLUENE			106-38-7	Intermediate for pharma manufacturing
	279	BUTYL DIGLYME By Butyl Bromide Route			112-73-2	Intermediate for pharma manufacturing
	280	BUTYL DIGLYME By ZEOLITE Route (STAGE-01)			112-73-2	Intermediate for pharma manufacturing
	281	ETHYL CHLORIDE			75-00-3	Intermediate for pharma manufacturing
	282	NAPTHYL QUINOLINIUM CHLORIDE			65322-65-8	Intermediate for pharma manufacturing
	283	CETYL ETHYL HEXANOATE			59130-69-7	Intermediate for pharma manufacturing
	284	COCOALKYLTRIMETHYL AMMONIUM CHLORIDE			61789-18-2	Intermediate for pharma manufacturing
	285	ETHYL HEXYL PALMITATE			29806-73-3	Intermediate for pharma manufacturing
	286	1,5-DICHLOROPENTANE			628-76-2	Intermediate for pharma manufacturing
	287	1,6-DICHLORO HEXANE			2163-00-0	Intermediate for pharma manufacturing
	288	1,4-DICHLORO BUTANE			110-56-5	Intermediate for pharma manufacturing
	289	4-DIMETHYL AMINO PYRIDINE			1122-58-3	Intermediate for pharma manufacturing
	290	DIETHYL KETONE			96-22-0	Intermediate for pharma manufacturing
	291	CYCLOHEXYL ETHYLAMINE			108-91-8	Intermediate for pharma manufacturing
	292	PROPIOPHENONE			93-55-0	Intermediate for pharma manufacturing
	293	METHYL PHENYL KETONE			98-86-2	Intermediate for pharma manufacturing
	294	METHYL ISOPROPYL KETONE			108-10-1	Intermediate for pharma manufacturing
	295	N-METHYL			872-50-	Intermediate for pharma

		PYRROLIDIONE			4	manufacturing
	296	N-ETHYL PYRROLIDIONE			2687-91-4	Intermediate for pharma manufacturing
	297	1,5-DIMETHYL-2-PYRROLIDIONE			5075-92-3	Intermediate for pharma manufacturing
	298	DIISOPROPYL KETONE			565-80-0	Intermediate for pharma manufacturing
	299	4-HEPTANONE			123-19-3	Intermediate for pharma manufacturing
	300	PINACOLONE			75-97-8	Intermediate for pharma manufacturing
	301	CYCLOPENTANONE			120-92-3	Intermediate for pharma manufacturing
	302	TRIFLUOROMETHYL ACETOPHENONE			349-76-8	Intermediate for pharma manufacturing
	303	N-METHYL PYRROLIDINE BY ZEOLITE ROUTE			872-50-4	Intermediate for pharma manufacturing
	304	IMINODIBENZYL			494-19-9	Intermediate for pharma manufacturing
	305	IMINOSTILBENE			256-96-2	Intermediate for pharma manufacturing
	306	ETHYL METHYL CARBONATE			623-53-0	Intermediate for pharma manufacturing
	307	PROPYLENE CARBONATE			108-32-7	Intermediate for pharma manufacturing
	308	ORTHO TOLYL BENZONITRILE			157366-46-6	Intermediate for pharma manufacturing
	309	1-ETHYL-3-(TRIFLUOROMETHYL) BENZENE			27190-70-1	Intermediate for pharma manufacturing
	310	SALICYLIC ACID			69-72-7	Intermediate for pharma manufacturing
	311	DIETHYL CARBONATE			105-58-8	Intermediate for pharma manufacturing
	312	DIMETHYL CARBONATE			616-38-6	Intermediate for pharma manufacturing
	313	PIPERAZINE			110-85-0	Intermediate for pharma manufacturing
	314	N-METHYL PIPARIZINE			109-01-3	Intermediate for pharma manufacturing
	315	N-ETHYL PIPARIZINE			5308-25-8	Intermediate for pharma manufacturing
	316	BENZYL METHYL AMINE			103-67-3	Intermediate for pharma manufacturing
	317	BENZYL ETHYL AMINE			2941-20-0	Intermediate for pharma manufacturing
	318	METHYL CYCLOHEXYL ACETATE			5726-19-2	Intermediate for pharma manufacturing
	319	JULOLIDINE			479-59-4	Intermediate for pharma manufacturing

	320	DECABROMO BIPHENYL ETHANE			84852-53-9	Intermediate for pharma manufacturing
	321	TERT BUTYL ACETIC ACID			540-88-5	Intermediate for pharma manufacturing
	322	TERT BUTYL ACETYL CHLORIDE			7065-46-5	Intermediate for pharma manufacturing
	323	2-[2-(4-CHLOROPHENYL)ETHYL]-2-(1,1-DIMETHYLETHYL)OXIRANE			80443-63-6	Intermediate for pharma manufacturing
	324	4-AMINO-6-(TERT-BUTYL)-4H-1,2,4-TRIAZINE-3-THIONE-5-ONE			33509-43-2	Intermediate for pharma manufacturing
	325	ORTHO CHLORO TOLUENE			95-49-8	Intermediate for pharma manufacturing
	326	PARA CHLORO TOLUENE			106-43-4	Intermediate for pharma manufacturing
	327	ORTHO CHLORO BENZYL AMINE			89-97-4	Intermediate for pharma manufacturing
	328	ORTHO CHLORO BENZYL CHLORIDE			611-19-8	Intermediate for pharma manufacturing
	329	PARA CHLORO BENZALDEHYDE			104-88-1	Intermediate for pharma manufacturing
	330	TETRAHYDRO FURAN			109-99-9	Intermediate for pharma manufacturing
	331	BUTYL BROMIDE			109-65-9	Intermediate for pharma manufacturing
	332	PROPYL BROMIDE			106-94-5	Intermediate for pharma manufacturing
	333	ISOPROPYL BROMIDE			75-26-3	Intermediate for pharma manufacturing
	334	OCTYL BROMIDE			111-83-1	Intermediate for pharma manufacturing
	335	1,4-DIBROMO BUTANE			110-52-1	Intermediate for pharma manufacturing
	336	1,5-DIBROMO PENTANE			111-24-0	Intermediate for pharma manufacturing
	337	1,8-DIBROMO OCTANE			4549-32-0	Intermediate for pharma manufacturing
	338	ORTHO BROMO TOLUENE			95-46-5	Intermediate for pharma manufacturing
	339	Polly DIALLYL DIMETHYL AMMONIUM CHLORIDE			26062-79-3	Intermediate for pharma manufacturing
	340	ORTHOCHLORO BENZALDEHYDE			89-98-5	Intermediate for pharma manufacturing
	341	CETYL CHLORIDE			6004-24-6	Intermediate for pharma manufacturing
	342	LAURYL CHLORIDE			112-52-7	Intermediate for pharma manufacturing
	343	BUTYL CHLORIDE			109-69-	Intermediate for pharma

				3	manufacturing
344	2-METHOXY ETHANOL			109-86-4	Intermediate for pharma manufacturing
345	BROMO ADAMANTANE			768-90-1	Intermediate for pharma manufacturing
346	ISOPROPYL TRIPHENYL PHOSPHONIUM BROMIDE			1530-33-2	Intermediate for pharma manufacturing
347	1-BUTYL-3-METHYL IMIDAZOLIUM BROMIDE			85100-77-2	Intermediate for pharma manufacturing
348	1-BUTYL-3-METHYL IMIDAZOLIUM HYDROXIDE			528818-81-7	Intermediate for pharma manufacturing
349	PIPERIDINE			110-89-4	Intermediate for pharma manufacturing
350	1-METHYL PIPERIDINE			626-67-5	Intermediate for pharma manufacturing
351	1,3,5-TRIMETHYL PIPERIDINE			35794-11-7	Intermediate for pharma manufacturing
352	TETRABROMO BIS PHENOL-A ALLYL ETHER			25327-89-3	Intermediate for pharma manufacturing
353	CETYL PYRIDINIUM BROMIDE			202869-92-9	Intermediate for pharma manufacturing
354	PYRIDINIUM TRIBROMIDE			39416-48-3	Intermediate for pharma manufacturing
355	BUTYL THION			142-96-1	Intermediate for pharma manufacturing
356	PYRROLIDINE			123-75-1	Intermediate for pharma manufacturing
357	2-METHYL PYRROLIDINE			765-38-8	Intermediate for pharma manufacturing
358	META PHENOXY BENZYL ALCOHOL			13826-35-2	Intermediate for pharma manufacturing
359	META PHENOXY BENZOIC ACID			3739-38-6	Intermediate for pharma manufacturing
E. PILOT PLANT PRODUCTS		**336**	**28**		
F. R & D CENTRE PRODUCTS		**1.2**	**0.1**		
Total		**45937.2**	**3828.1**		

List of Products for R & D Lab / Pilot Plant

Sr. No.	Name of Product	R & D Lab Product (MT/Month)	Small Scale Pilot Plant Product (MT/Month)	Total Proposed (MT/Month)	End Use
1.0	Halogenation	0.1	2	28.1	For Validation of

	Compounds				Manufacturing Process& Sample approval with Overseas and Domestic Customer or if Batch will not prepared as per our specification then we will sending it for Incineration.
2.0	Hydrogenation Compounds		2		
3.0	Esterification Products		2		
4.0	Acylation & Acetylation Products		2		
5.0	Diazotization & Hydrolysis Products		2		
6.0	UV- Based Compounds		2		
7.0	Nitro & Dinitro Compounds		2		
8.0	Grignard Reaction Products		2		
9.0	Triazine & Benzophenone Derivatives		2		
10.0	Ethoxylation and research on various intermediates for pharma, agrochemicals, dyes, epoxy and petrochemicals etc.		2		
11.	Photo halogenation		2		
12.	Fixed Bed Catalytic Reaction		2		
13.	Zeolite and Zeolite based catalyst and catalytic reaction		2		
14.	Ultra-Low temperature chemistry		2		
	Total	**0.1**	**28**	**28.1**	

Justification of R&D and Pilot Plant

- Total Production capacity is 3850 MT/Month
- Total number of product is 359 Nos.
- Pilot Product capacity – 28 MT/Month
- Company has proposed total 14 numbers of process categories & production capacity of each process group will be 2 MT/Month.
- Company has proposed quantity of R&D products are 0.1 MT/Month.
- So, total pilot plant capacity against the total production capacity is (28/3850)*100 = 0.7 % of our total capacity which is less than 1 %.
- Total Production proposed is 28.1MT/Month So daily capacities would be 0.937 MT only

- In our overall proposal we are proposing 3850MT/Month as EC related Organic Products
- We have considered total Water consumption for R&D & Pilot Plant will be 10 KL/Day & Waste water generation will be 10 KL/Day.
- Total effluent generation will be 723 KL/Day and generation of waste water from R&D will be 10 KL/Day. So, (10/723)*100= 1.38 %

Generally new products are being developed at very small scale in R & D laboratory i.e., 100 gm – 5 Kgs to establish the process, quality, yield etc.

Once the process gets developed in laboratory scale, we generally submit the sample to concerned end users in Domestic as well as overseas countries for their approval. After approval of those product, our customers require 3 to 4 batches sample (100kg to 500kg) for validation of products. Generally overseas/foreign countries ask for the data of 4-Batch and this 4 batches approval customer generally ask for minimum in specific 500 Kg*4 Nos., so it comes out to 2 MT/Month (i.e. 500 kgs x 4).

So, ultimately production capacity of small scale pilot plant products will be 14 x 2 = 28 MT/Month

- The aim for certain new products whereby when products get approved, customer ask for sample of three-four batches & sometimes they give the commercial purchase order of 100 kg to 500 kgs.
- For sending this 100 kg or 500 kg to foreign countries to multiple customers, we have to follow all the protocols of exports.
- While sending this three batches sample i.e., 100 to 500 kg all documents are to be followed in term of tax Invoice, Gate pass and all related documents.

Company has already collaboration with CSIR-Indian institute of chemical technology, Hydrabad &CSIR- National Chemical Laboratory, Pune.

Company has a dedicated DSIR (Department of Scientific & Industrial Research) approved R&D Centre at our Vadodara facility where qualified and experienced in-house R&D team focuses on the development of new products and improvement in current manufacturing processes.

Plant & Machinery Facilities for Pilot Plant.

SR No	Descriptions/ Items	Capacity	MOC	Qty.
1	Stainless Steel Reactors of various Capacities	50 to 1000 lit	SS - 316	3
2	Glass Lined Reactors of Various Capacities	50 to 1000 lit	MS GL	3
3	MS Graphite/ Carbon lined Reactor Systems	100 to 250 lit	Graphite	3
4	Hast Alloy Reactor systems	100 to 250 lit	Hast Alloy	2
5	Pressure Reactors/ Autoclave Systems	10 to 250 lit	SS - 316	2
6	Continuous Hydrogenation Systems-pilot	10 to 50 lit/ Hr	SS - 316	2
7	Continuous Nitration System on Pilot Scale	50 to 50 lit/ Hr	SS - 316	2

8	Continuous Drying Systems /Pilot Scale Systems	10 to 50 Kg/ Hr	SS - 316	3
9	Continuous Gas -Liquid Reactors (Bubble Column)	25 to 50 lit/ hr	Glass	3
10	Continuous Flow Reactor – G -1 Systems	5 to 10 lit/ Hr	Glass	3
11	Continuous Flow Reactor – G - 4 Systems	100 to 250 lit/ Hr	Glass	3
12	Continuous Hydrolysis Reactor Systems	25 to 250 lit	SS - 316	3
13	Mild Steel Reactors of Various Capacities	25 to 250 lit	SS-3	5
14	HDPE Reactors of Various Capacities	25 to 250 lit	HDPE	3
15	SS- Tanks of Various Capacities	25 to 250 lit	SS - 316	5
16	Glass Lined Tanks of various Capacities	100 to 500 lit	MS GL	5
17	Mild Steel Tanks of various Capacities	25 to 250 lit	MS	3
18	HDPE Tanks of various capacities	25 to 250 lit	HDPE	3
19	Distillation Column	100 -250 mm Dia	SS / MSGL	5
20	Centrifuges	24 / 36 ''	SS/ MSGL	3
21	Filter Press	24/ 46 / 96 plates	PP	2
22	Agitated Nutsch Filters and dryer	5 -25 lits	SS/MSGL	2
23	Dryers	5 lit – 100 lit	SS	2
24	Vacuum Systems	2.0- 0.1 Torr	SS/ Graphite	2
25	Boilers	3.0 TPH	MS	1
26	Cooling Towers	50 – 250 TR	FRP	3
27	Chilling Plants	50 TR at + 8 * C	MS	1
28	Brine Chilling Plants	10 TR at -15 * C	MS	1
29	Thermo pack Systems	4Lakh Kcal/hr	MS	1
30	Nitrogen Generation Plants	50 m3/ Hr	MS	1
31	Single Stage Evaporators (SSE)	260 KLD	SS -316 Ti	1
32	DG Sets	500 KVA	MS	1

33	Electrical Panels		MS	1
34	Electric Transformers	50 KVA	MS	1

 # Brief Note of Product Profile:

1. No of Manufacturing Plants: 3
2. Brief Note regarding number of Products to be manufactured considering plant capacity: at a time 6 products will be manufacture

Details of incineration Facility for Hazardous Waste with capacity

Sr. No.	Name of Facility	Capacity
1	Proposed incineration Facility for Hazardous Waste	2 MT/Hr (i.e. 14400 MT/Annum)

6) **PROJECT DETAILS (COST/LAND OWNERSHIP/NA PERMISSION ETC.)**

a) Total **cost of Proposed** Project (Rs. in Crores):

Total
60 Crores (including incineration facility Cost : 10 Crores)

Break-up of proposed project Cost:

Details	Total (Rs. In Crores)
Land	15Cr
Building	12Cr.
Plant & Machinery	25.39 Cr.
EMP	7.61 Cr.
Total	60Cr

b) **Details of Land / Plot ownership details:** (Linking between Land ownership and PP is required.)

i. **Total Plot area (sq mt):** 50400 Sq. m.

c) GIDC Plot Allotment letter/ NA documents: Unit has purchased Plot from GIDC Dahej-III, vide letter no. GIDC/RM/ANK/TRF/PTO/DAH6/32 dated 20/11/21

ii. **Rent agreement, if any-** Not Applicable

iii. **Other Land Possession documents, if any**Not Applicable

7) **IF IT IS EXPANSION WHETHER CCR/EARLIER EC COMPLIANCE GIVEN:**

- **Not Applicable.This is a New Project**

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8) **PUBLIC HEARING APPLICABILITY AND ITS COMPLIANCE:**

Main Issues raised by stake holders	Commitments by Project proponent and Action Plan	Action Plan
Not Applicable. Unit is located in Notified Industrial Area of GIDC, Dahej-III which is fall in PCPIR. Hence, Public Hearing is exempted. PCPIR has obtained EC vide File no. 21-49/2010-IA-III Dated 14th September, 2017		

Comments:

The public consultation is not applicable as per paragraph 7(i) III (i) (b) of the Environment Impact Assessment Notification-2006.

9) **SITING CRITERIA DETAILS (OTHER THAN GIDC):**

This unit is located in GIDC area Dahej-III, so siting criteria is not applicable.

Sr. no.	Environmental Sensitivity	Name/Specific details	Siting criteria as per GPCB guidelines dated: 05.06.2022 & its amendment	Aerial Distance in Km
1	Habitat (Residential Area)	Vadadla Village	250 meter	1.50 Km
2	Water Bodies			
	River	Narmada River	--	7.25 Km
	Natural Nallah/Drain	--	--	--
	Lake/Pond/Wetlands	Vadadla Lake	--	1.42 Km
	Water supply Tanks/Reservoirs	GIDC Reservior	--	4.00 Km
	Canal	Narmada Canal	--	13.12 Km
3	Protected Monuments/Heritage sites/Public Buildings i.e School, colleges, etc.	Shishu Vihar	--	9.40 Km
4	National/State Highway OR Express way	State Highway-6 NH-8	--	2.85 Km 42.88 Km
5	Coastal Regulation Zone (CRZ) (In case of Coastal area projects)	Gulf of Khambhat	NA	29.64 Km

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Comments:

This unit is located in GIDC area, so siting criteria is not applicable.

10) **A. APPLICABILITY OF GENERAL CONDITIONS AND COMMENTS WITH SPECIFIC CLARIFICATION OF MOEF&CC GUIDELINES:** Any project or activity specified in Category 'B' will be appraised at Central level as Category 'A' if located in whole or in part within 5 Km radius from the project boundary of:-

Sr No	Particulars	Aerial Distance in Km
1.	Protected Areas notified under the Wildlife (Protection) Act 1972 (53 of 1972)	No Protected Areas within 10 km radius from the project site. Shoolpaneshwar Wildlife Sanctuary is 86.24 Km away from the project site.
2.	CPA/SPA (Critically Polluted Area/Severely Polluted Area) as identified by the CPCB	This unit is located in GIDC area Dahej-III which is not fall in CPA/SPA. Ankleshwar GIDC is 40.23 km from the Project Site.
3	Eco sensitive areas as notified under sub-section (2) of section 3 of EPA-1986	No Eco sensitive areas within 10 km radius from the project site. Shoolpaneshwar Wildlife Sanctuary is 86.24 Km away from the project site.
4	Interstate boundaries and international boundaries	No Interstate boundaries and international boundaries within 10 km radius from the project site. Interstate boundaries of Gujarat and Maharashta is 130.21 Km away from the project site.

Comments:

As per MoEF&CC's notification dated: 25.06.2014 and as per details submitted by PP, General condition is not applicable.

B. Ensure compliance of category as defined in the amendment to EIA Notification, 2006 vide SO 1599 (E) dated 25/06/2014. i.e. Conditions of small units: (in case of 5 (f) category units and outside the GIDC)

Sr no.	Condition	Compliance with justification
1	Water consumption less than 25 M3/day;	No. Total Water Requirement is 1110 KL/Day (Fresh: 502KL/Day + Reuse: 608 KL/Day)
2	Fuel consumption less than 25 TPD;	No, Fuel consumption such as Agro waste- 30 MT/Day; Natural Gas - 50000 Nm^3/Day, LDO - 40 MT/Day, HSD - 6 KL/Day
3	Not covered in the category of MAH units as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989 as per the legal undertaking submitted with EIA report.	Yes

Comments:

Unit is located within the GIDC so this small scale condition is not applicable**.**

11) **AREA ADEQUACY AND COMMENTS**

Total Land area: 50400 Sq. m.

Floor-wise land area break-up table

NAME OF THE BUILDING	G.F	F.F.	S.F.	T.F.	FOURTH. F.	TOTAL	% AREA COVERED
Admin & OHC	797	0	0	0	0	797	1.58
Time Security	444	0	0	0	0	494	0.88
Tank Farm-1 (Toxic /Flammable Tank)	1140	0	0	0	0	1140	2.26
Tank Farm (Corrosive Tank)	1016	0	0	0	0	1012	2.02
Gas Tank Farm	932	0	0	0	0	854	1.85
Cl2 Tonner Storage	553	0	0	0	0	550	1.10
Nitrogen plant	387	350	350	350	350	1947	0.77
Hydrogenation plant & H2 Skid Shed Storage Blog.	1125	0	0	0	0	1294	2.23
Raw Material Storage	1590	0	0	0	0	770	3.15
FG Storage	800	0	0	0	0	770	1.59
Gas Tonner Storage (Methyl Chloride & Ethyl Chloride)	487	150	0	0	0	300	0.97
Bromine Bottle storage	649	0	0	0	0	200	1.29
MPP Plant-1	1125	988	988	988	988	5262	2.23
MPP Plant-2	1125	988	988	988	0	4012	2.23
MPP Plant-3	1125	988	988	988	988	5160	2.23
Utility	650	0	0	0	0	700	1.29
Boiler	478	0	0	0	0	400	0.95
Spray Dryer	338	0	0	0	0	335	0.67
Hazardous Waste Storage	293	0	0	0	0	292	0.58
ETP Plant	308	0	0	0	0	308	0.61
MEE Plant	276	270	270	270	270	1356	0.55
STP area	50	0	0	0	0	50	0.10
Fly Ash Storage	156	0	0	0	0	156	0.31
Solvent Storage	260	230	230	230	230	1180	0.52
Greenbelt Area	16632	0	0	0	0	16632	33.00
Road & Open Area	13247	0	0	0	0	15120	26.28
Incineration Plant	1000	0	0	0	0	1000	1.98
Hazardous Incineration Waste (Semi Solid/Liquid) Storage Area	1000	0	0	0	0	1000	1.98

Hazardous Incineration Waste (Solid) Storage Area	1000	0	0	0	0	1000	1.98
Fire Hydrant Water Tank & Pump room	200	0	0	0	0	200	0.40
UG Water Tank	551	0	0	0	0	551	1.09
Waste separation area	462	0	0	0	0	462	0.92
Vehicle Tyre Washing	192	0	0	0	0	192	0.38
Weigh bridge	12	0	0	0	0	12	0.02
Total Area	**50400**						**100.00**

Note: Distance between MEE & solvent storage is 50 meter.

Area Adequacy table:

Sr No	Components	Area required (Sq m)	Area Provided (sq m)	Percentage
1	Tank Farm-1 (Toxic /Flammable Tank)	1140	1140	2.26
2	Tank Farm (Corrosive Tank)	1016	1016	2.02
3	Gas Tank Farm	932	932	1.85
4	Cl2 Tonner Storage	553	553	1.10
5	Nitrogen plant	387	387	0.77
6	Hydrogenation plant & H2 Skid Shed Storage Blog.	1125	1125	2.23
7	Raw Material Storage	1590	1590	3.15
8	FG Storage	800	800	1.59
9	Gas Tonner Storage (Methyl Chloride & Ethyl Chloride)	487	487	0.97
10	Bromine Bottle storage	649	649	1.29
11	MPP Plant-1	1125	1125	2.23
12	MPP Plant-2	1125	1125	2.23
13	MPP Plant-3	1125	1125	2.23
14	Utility	650	650	1.29
15	Boiler	478	478	0.95
16	Spray Dryer	338	338	0.67
17	Hazardous Waste Storage	293	293	0.58
18	ETP Plant	308	308	0.61
19	MEE Plant	276	276	0.55
20	STP area	50	50	0.10
21	Fly Ash Storage	156	156	0.31
22	Solvent Storage	260	260	0.52
23	Incineration Plant	1000	1000	1.98
24	Hazardous Incineration Waste (Semi Solid/Liquid) Storage Area	1000	1000	1.98
25	Hazardous Incineration Waste (Solid) Storage Area	1000	1000	1.98

Comments:

SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.

12) **GREEN BELT CONDITIONS AND MEASURES ALONG WITH AREA:**

Total Plot area (Sq meter)	Total Green belt area (Sq meter)	% of Greenbelt
50400	**Inside:** 16632 **Outside:**NA	33%

Details of copy of permission letter of concern GIDC/ Panchayat/etc. for greenbelt development (in case of greenbelt development outside the premises: Not applicable

Comments:

- The PP shall develop green belt within premises (16632 Sq. m i.e. 33 % of the total plot area) as submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

13) **EMPLOYMENT GENERATION:**

Permanent	Contractual	Total
400	0	400

-

14) **SOURCE OF WATER SUPPLY WITH QUANTITY AND PERMISSION (DETAILS OF CGWA IF BOREWELL**

a) **Source of water supply:** GIDC water supply, Dahej

b) **Total Fresh water quantity (KLD):** 502 KL/Day

c) **Permission of concerned authority (Name and quantity (in KLD):**Permission of 950KL/Day vide letter no. GIDC/DEE/WS/BRH/464 Dated 24/04/2023.

Comments:

PP has obtained permission from GIDC water supply, Dahej for procurement of water of 950KL/Day which is found satisfactory.

15) **WATER CONSUMPTION RELATED DETAILS WITH COMMENTS**

Category	Water Consumption KL/Day	Remark
(A) Domestic	55	
(B) Gardening	50	
(C) Industrial		

Process	280	
Washing	50	
Boiler	165	
Cooling	160	
Others (scrubbing)	120	
R&D	10	
(D) Incineration Process	220	[Incineration Process water consumption: 220 KL/Day (Incinerator Scrubber: 210 KL/Day + Cooling Tower: 10 KL/Day)]
Total water consumption	**1110**	

Comments:

PP has submitted the above water consumption which is calculated considering the worst case scenario and in no case the water requirement shall not exceed the same which is found satisfactory.

16) **WASTE WATER GENERATION AND DISPOSAL**

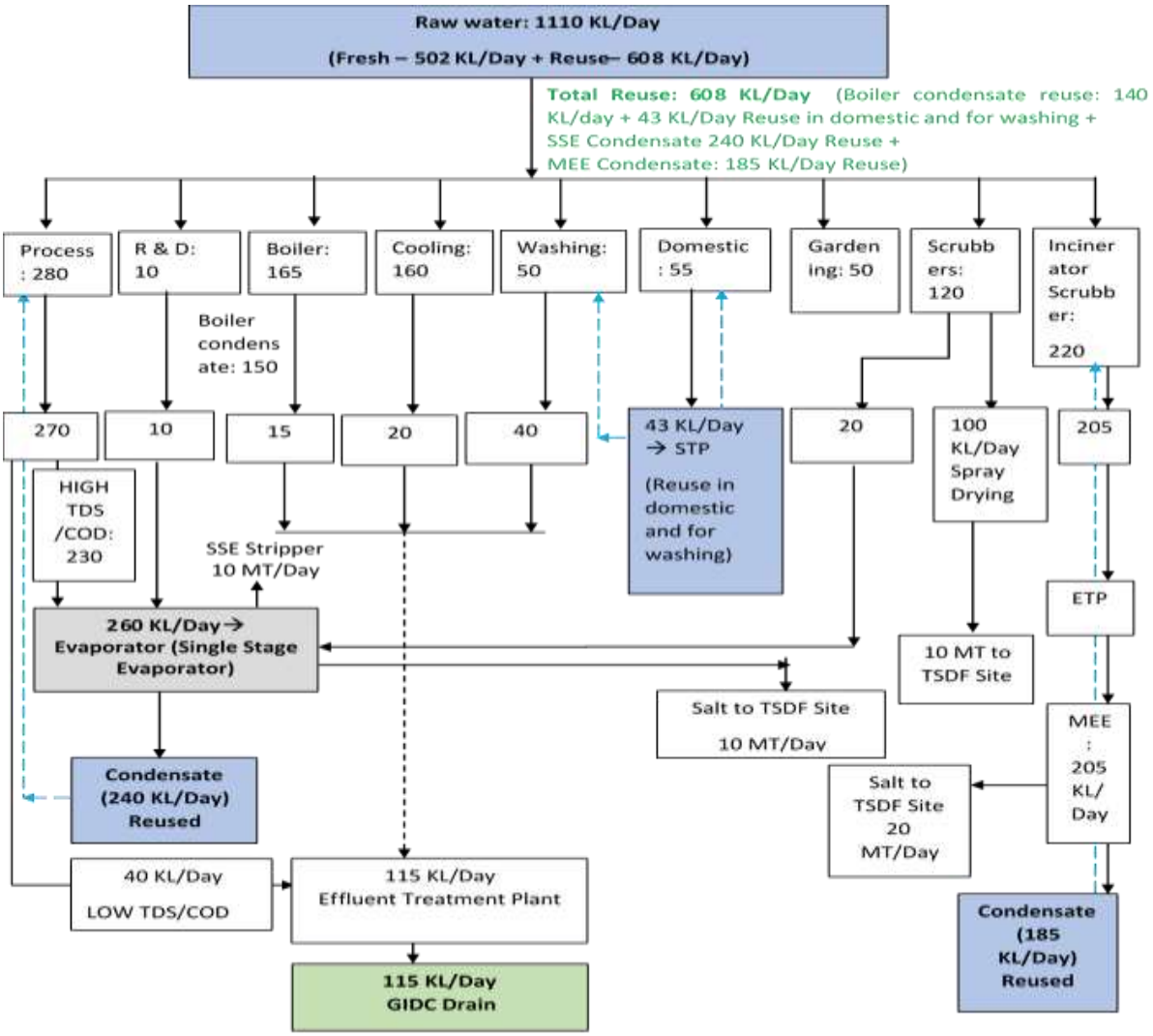
Category	**Wastewater Generation KL/Day**	**Remark**
(A) Domestic	43	Treated in STP and Reuse in domestic and for washing
(B) Gardening	0.0	--
(C) Industrial		
Process	270	Waste water generation is less as compare to water consumption because during the process, water will react with NaCL &NaBr converted into Dil. HCL & HBr Solution. The quantity of the same mentioned in hazardous waste table.
Washing	40	--
Boiler	15	Boiler Condensate:140 KLD reuse in boiler
Cooling	20	
Others (scrubbing)	120	
R&D	10	
(D) Incineration Process	205	MEE Condensate: 185 KLD [Incineration Process waste water generation: 205 KL/Day (Incinerator Scrubber: 200 KL/Day + Cooling Tower: 5 KL/Day)]
Total Industrial water consumption	**723**	

Justification in case of increase/ drastic reduction in wastewater generation than water Consumption:

Waste water generation is less as compare to water consumption because during the process, water will react with NaCL & NaBr converted into Dil. HCL & HBr Solution. The quantity of the same mentioned in hazardous waste table.

Comments:

	PP has submitted the above wastewater generation which is calculated considering the worst case scenario and in no case the wastewater generation shall not exceed the same which is found satisfactory.
17)	**SIMPLIFIED WATER BALANCE DIAGRAM**



18) **BREAKUP OF WASTE WATER DISPOSAL (DOMESTIC & INDUSTRIAL BOTH)**

Sr. no.	Quantity KLD	Facility
1	115KL/Day	Low COD Stream: Process effluent (40 KL/Day) & utility effluent (75 KL/Day) will be treated in ETP and sent to CETP Dahej (115 KL/Day).
2	260KL/Day	High COD Stream: Process effluent (230 KL/Day), R & D effluent (10 KL/Day) & Scrubbing media (20 KL/Day) will be sent to SSE (260 KL/Day). Single Stage Evaporator with stripper followed by ATFD and RO. Effluent from stripper (10 KL/Day)will remove solvent from effluent & Remaining Salt from ATFD will be sent

		to TSDF site(10 MT/Day). SSE Condensate (240 KL/Day) will be reused in process.
3	100 KL/Day	Scrubbing media (Inorganic Stream: 100 KL/Day) will be collected into Collection Tank from where it is pumped to Spray Dryer.
4	43KL/Day	Domestic wastewater (43 KL/Day) will be treated in STP and treated waste water will be reuse for domestic purpose and for washing.
5	205 KL/Day	High TDS Stream for Incineration Plant Wastewater: Effluent from incineration scrubber (205 KL/Day) will be treated in ETP and sent to MEE. MEE Condensate (185 KL/Day) will be reuse in incineration scrubber. MEE Salt will be sent to TSDF Site (20 MT/Day).
Total	**723KL/Day**	

Comments for Domestic Effluent:

- Domestic wastewater generation shall not exceed 43 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for washing purpose within premises.

Comments for Industrial Effluent:

1. Management of Industrial effluent shall be as under:

Concentrated Stream (465 KLD)

- 260 KLD effluent generated from High TDS/COD (process effluent -230 KLD,R & D effluent -10 KLD & Scrubbing media -20 KLD)shall be treated Primary ETP followed by Single Stage Evaporator (SSE) having Stripper facility. Condesnate of Single Stage Evaporator (SSE) -240 KLD shall be reused in industrial process. And remaining Salt -10 MTD shall be sent to TSDF site.
- 205 KLD effluent generated from scrubber of incineration plant shall be treated in ETP having primary, secondary and tertiary treatment units followed by MEE. MEE Condensate -185 KL/Day) shall be reused in incineration scrubber.And salt – 20 MTD will be send to TSDF site

Dilute Stream (Low COD/ TDS) - (215 KLD):

- 115 KLD effluent generated from Low TDS/COD (Process -40 KLD, cooling tower -20 KLD, Boiler -15 KLD, and Washing -40 KLD) shall be treated in ETP and send to CETP Dahej (115 KLD) only after complying with the inlet norms of

CETP prescribed by GPCB to ensure no adverse impact on Human Health and Environment.

- 100 KLD effluent generated from Scrubbing media from inorganic stream (100 KLD) shall be collected&treated into Collection Tank and further send for Spray Dryer.Generated salt from Spray dryer 10 MTD shall be send to TSDF site.

19) **MECHANISM AND METHODOLOGY OF STREAM SEGREGATION**

Effluent will be collected at source point only and it will be collected in designated collection tanks. Separate ETP for High COD & Low COD stream will be provided.
This effluent stream will be different Color Codes for different effluent streams and its separate Collection drain/sumps.
We will Provide Adequate Collection Tank & ETP for Effluent Streams for Segregation of waste water from the Process.
We have Segregated our waste water into High COD / High TDS & Low COD / Low TDS Stream as explained below:

Sr. No.	Group	High COD / High TDS stream KL/Day	Low COD / Low TDS stream KL/Day	Treatment
1.	Group 1: (Product name: 1,4-Butyl Bis(N-Methyl pyrrolinium) di hydroxide&1,5-Pentyl Bis(N-Methyl pyrrolinium) di hydroxide)	--	22.67	Primary, Secondary and tertiary Treatment
2.	Group 2: (Product name: LITHIUM HEXA FLUOROPHOSPHATE BY LIF INHOUSE PREPARED AND USE)	60.00	17.33	Primary, Secondary and tertiary Treatment & Primary treatment followed by SSE
3.	Group 3: (TETRAMETHYL AMMONIUM HYDROXIDE PENTAHYDRATE &TETRA ETHYL AMMONIUM BENZOATE)	34.67	--	Primary treatment followed by SSE
4.	Group 4: (2-METHYL-5-NITRO-1H-IMIDAZOLE)	135.33	--	Primary treatment followed by SSE
		230	**40**	

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20) **STP AND/OR ETP SPECIFICATION AND DESIGN AND ITS CAPACITY**

STP Capacity – 60 KL/Day.
Domestic wastewater (43 KL/Day) will be treated in STP and treated waste water will be reuse for domestic purpose and for washing.

Sr. No.	Name of Unit	Capacity/Size	Nos.	MOC
1.	Screen Chamber (SC-01)	4 KL	1	RCC M30
2.	O & G Trap (OGT-01)	8 KL	1	RCC M30
3.	Collection Tank (CT-01)	55 KL	1	RCC M30
4.	MBBR Tank (MBBR-01)	50 KL Tank with side platform, MS ladder with railing	1	MSFRP
5.	Tube Settler Tank (TST-01)	12 KL hopper bottom	1	MSFRP
6.	Intermediate Tank (IT-01)	10 KL, close tank with manhole & vent	I	HDPE
7.	Hypochlorite Dosing System (SHDS-01)	500 Lit., Vertical circular tank with Mixer & dosing Pumps	1 Lot	HDPE/PP
8.	Pressure sand Filter (PSF-01)	4 m3/hr., Vertical type, Día 600 mm X Ht 1500 (HOS),	1	FRP
9.	Activated Carbon Filter (ACF-01)	4 m3/hr., Vertical type, Día 600 mm X Ht 1500 (HOS),	1	FRP
10.	Treated Water Tank (TWT-01)	40 KL, Close Tank with manhole & vent, vertical circular Tank, Make: Siddhi/Eqvt.	1	HDPE
11.	Sludge Drying Beds (SDB-01)	3.0 x 2.0 with media filling	2	MSFRP /Bk. Masonry

Capacity of ETP & its specification

ETP Capacity

ETP-1: 126 KL/Day

ETP-2: 270 KL/Day

ETP-3: 100 KL/Day

ETP-4: 225 KL/Day

SSE Capacity: 300 KL/Day

MEE Capacity: 220 KL/Day

The details of the ETP are as under: -

The details of separate streams and its proposed treatment scheme are described in subsequent sections:

Stream - 1: The stream having low COD, TDS slightly acidic /alkaline

Stream - 2: The stream having high COD

Stream - 3: The stream having high TDS

Stream - 4: The stream having high TDS (For Incineration)

Unit will make a provision of segregated sumps for each stream of effluent (i.e. stream-1, stream -2, stream-3 & Stream-4) within their industrial premises. The minimum storage capacity or equivalent to one-day generation (whichever is higher) will be mandatory for each of the sump for segregated stream and then give treatment.

We shall segregate the waste streams properly and sent for proper treatment and disposal.

For Low COD Stream I (115 KL/Day)

M/s. TATVA CHINTAN PHARMA CHEM LIMITED. shall have an Effluent treatment plant consisting of primary, secondary and advanced treatment units. The effluent confirming to inlet standards of GIDC drain. The details of ETP are as follows.

First all non-toxic and biodegradable streams (low COD) of wastewater shall pass through Screen Chamber (SC-01) where floating material shall be removed with help of Screen (S-01). Then effluent shall be collected in Collection cum Equalization tank-1 (CET-01). Pipe grid is provided at bottom of the CET-01 to keep all suspended solids in suspension and to provide proper mixing by mixer.

Then after, equalized wastewater shall be pumped to Neutralization Tank-1 (NT-01) where the continuous addition and stirring of Acid solution is done to maintain neutral pH of wastewater from Acid Dosing Tanks (ACDT-01) as per requirement by gravity. Then after, neutralized wastewater shall go to Flash Mixer-1 (FM-01) by gravity. Alum and Polyelectrolyte shall be dosed from Alum Dosing Tank (ADT-1) and Polyelectrolyte Dosing Tank (PEDT-01) respectively by gravity into FM-1 to carry out coagulation by using a Flash Mixer.

Then after, wastewater shall go to Secondary Settling Tank-1 (SST-01) from MBBR-1. Here,

the suspended solids shall be settled. Activated sludge from SST-1 shall be sent to Sludge Sump (SS-01). Clear supernatant from SST-1 shall go to Moving Bed Bio Reactor Tank-02 (MBBR-02). Here biodegradation of left out organic matter of the wastewater shall be carried out by bacteria (suspended growth) and for that oxygen shall be supplied by two nos. of blowers (B-02) with help of diffusers.

Then after, wastewater shall go to Secondary Tube Settler-2 (SST-2) from MBBR-02. Here, the suspended solids shall be settled. Activated sludge shall be removed from bottom of SST-02 and will be sent to SS-01. Nutrients will be added from NDTs to Aeration Tank-2 for growth of Bacteria.

Clear supernatant from SST-02 shall be collected in Treated Effluent Sump(TES-01) before sent to CETP for final disposal.

Sludge settled in PTS-01&2 and excess sludge from SST-01/2 shall be collected in Sludge Sump then sludge shall be pumped to Filter Press where, dewatering shall be carried out before storage in HWSA and ultimate disposal to TSDF. Leachate from FP shall be sent back to CET-1 for further treatment.

<u>For High COD Stream II (260 KL/Day)</u>

The High COD stream effluent from Process, R & D and Scrubber will be sent to Single Stage Evaporator with stripper followed by ATFD and RO. Organic volatile from Single Stage Evaporator will be sent to co-processor or common incineration site. Semi solids from ATFD will be sent to co-processor or common incineration site. Condensate from Evaporator shall be reused in plant premises.

All High TDS streams of wastewater from Process shall be collected in Collection cum Equalization Tank -2(CET-02). Mixer is Provided of the CET-02 to keep all suspended solids in suspension. Then equalized effluent shall be pumped to Neutralization Tank-2 (NT-02) where Acidic shall be added from acid Dosing tank as per requirement to maintain neutral pH of waste water. Mixer is provided in NT-01 for proper mixing.

<u>For High TDS Stream III (100 KL/Day)</u>

High TDS effluent – 100 KL/Day (Inorganic Stream) shall be collected into Collection Tank (CT-01) from where it is pumped to Spray Dryer (SD-01). In Spray Dryer, produce a dry powder from a liquid or slurry by rapidly drying with a hot gas. Salt from SD-01 shall be selling as by product.

<u>For High TDS Stream for Incineration Plant Wastewater stream (205 KL/Day)</u>

All High TDS streams of wastewater from Process shall be collected in Collection cum

Equalization Tank -2(CET-02). Mixer is Provided of the CET-02 to keep all suspended solids in suspension. Then equalized effluent shall be pumped to Neutralization Tank-2 (NT-02) where Acidic shall be added from acid Dosing tank as per requirement to maintain neutral pH of waste water. Mixer is provided in NT-01 for proper mixing.

Clear effluent from FM-01 shall be collected in Holding Tank (HT-01) before pumped to strippers. Effluent from stripper to remove solvent from effluent. Then it shall be collected in MEE Feed Tank (MFT-01) and then pumped to Multi Stage Effect Evaporator (MTEE-01) to remove dissolved solids from effluent. Condensate from MTEE-01 shall be reuse in plant. Salt slurry shall be sent to common Incinerator. Multi Stage Evaporator with stripper followed by ATFD and RO. Organic volatile from Single Stage Evaporator with stripper will be sent to co-processor or common incineration site. Semi solids from ATFD will be sent to common incineration or inhouse incinerator. Condensate from Evaporator shall be reused in plant premises.

S. N.	Name of unit	Size (m x m x m) L x B x (LD+FB)	No.	MOC/ Remark
Stream I (Low COD & TDS Stream) 115 KL/Day				
1	Screen Chamber (SC-01)	4.0 X 0.7 X (0.1+0.5)	1	RCC M25+A/A Bk. Lining
2	Collection cum Equalization Tank-1 (CET-01)	4.0 X 4.0 X (2.5+0.7)	1	RCC M25+A/A Bk. Lining
3	Neutralization Tank-1 (NT-01)	1.0 X 1.5 X (2.0+0.5)	1	RCC M25+A/A Bk. Lining
4	Flash Mixer-1 (FM-01)	1.0 X 1.5 X (2.0+0.5)	1	RCC M25
5	Primary Tube Settler-1 (PTS-01)	3.0 X 2.0 X (2.0 + 1.0 +0.3)	1	RCC M25
6	Moving Bed Bio Reactor Tank (MBBR-01)	7.0 X 4.0 X (4.0+0.5)	1	RCC M25
7	Secondary Settling Tank-1 (SST-01)	3.5 X 2.5 X (2.5+0.5)	1	RCC M25
8	Moving Bed Bio Reactor Tank (MBBR-02)	5.0 X 4.0 X (4.0+0.5)	1	RCC M25
9	Secondary Settling Tank-1 (SST-02)	3.5 X 2.5 X (2.5+0.5)	1	RCC M25
10	Treated effluent Sump (TES-01)	4.0 X 2.5 X (3.0+0.7)	1	RCC M25
11	Sludge Sump(SS-01)	2.0 X 2.0 X (3.0+0.7)	1	RCC M25
12	Filter Press(FP-01)	5.0 X 4.0 X (2.5+0.7)	1	PP

13	Acid Dosing Tank (ACDT-01)	1000 lit	1	HDPE
14	Alum Dosing Tank (ADT-01)	1000 lit	1	HDPE
15	Poly Dosing Tank (PDT-01)	100 lit	1	HDPE
16	Nutrient Dosing Tank(NDT-01)	1000 lit	1	HDPE
Stream II High COD Stream(260 KL/Day)				
1	Collection cum Equalization Tank-2 (CET-02)	3.0 x 3.0 x (2.5+0.5)	1	RCC M25+A/A Bk. Lining
2	Neutralization Tank-2 (NT-02)	3.0 x 3.0 x (2.0+0.5)	1	RCC M25+A/A Bk. Lining
3	Strippers (ST-01)	400 m3/day	1	SS
4	Evaporator Feed Tank (MFT-01)	5.0 x 3.0 x (2.5LD+0.5 FB)	1	RCC M25
5	Single Stage Evaporator with ATFD	200 m3/day	1	SS
Stream III High TDS (100 KL/Day)				
1	Collection tank(CT-01)	4.0 X 2.5 X (3.0+ 0.5)	1	RCC M25
2	Spray Dryer (SD-01)	100 KLD	1	SS

Stream IV High TDS Stream(205 KL/Day)					
Sr. No.	**Name of Unit**	**Tag No.**	**Size in Meters (L X B X (LD+FB)**	**Nos.**	**MOC**
1.	Collection cum Neutralization Tanks-1	CNTs-01-A/B	103.0 KLD	1	RCC M30+ A/A Bk. Lining
2.	Flash Mixer-1	FM-01	8.0 KLD	1	RCC M25
3.	Primary Settling Tank-PST-01	PST-01	52.0 KLD	1	RCC M30
4	RO Feed Tank	ROFT-01	150 KL	1	RCC M30
5	RO Unit	RO-01	205 KL	1	PVDF
6	MEE Feed Tank	MFT-01	42 KL	1	RCC M30
7	Multi Effect Evaporator (MEE-01) with Agitated Thin Film Dryer (ATFD-01)	MEE-01/ ATFD-01	100 KL	1	SS316L
8	Sludge Drying Beds	SDBs-01	3.0 x2.0	1	B.K with PCC Bedding
9	Condensate storage tank	CST-01	35.0 KL	1	RCC M30/HDPE
10	Alum Dosing Tank	ADT-01	1000 Lit	1	HDPE
11	Poly Dosing Tanks	PDT-01/02	1000 Lit	1	HDPE
12	Caustic Dosing Tanks	CDT-01	1000 Lit	1	HDPE

21) **TREATABILITY OF WATER**

LOW COD STREAM-I:

Sr. No.	Parameter	Characteristics (mg/L)				CETP Dahej
		Untreated	Primary Treated	Secondary treated	Tertiary Treatment	
1.	pH	3.5	7.5	7.5	7.5	6.5-7.5
2.	TDS	2300	2800	2800	2500	--
3.	COD	3600	2600	600	240	250
4.	BOD_3, 27^0C	1080	700	200	80	100
5.	Ammonical Nitrogen	10	10	10	10	50

HIGH COD STREAM-II

Sr. No.	Parameter	Characteristics (mg/L)			
		Untreated	Stripper	Primary	SSE
1.	pH	4.2	7.5	7.5	7.5
2.	TDS	10000	10000	10000	100
3.	COD	5500	800	390	150
4.	BOD_3, 27^0C	1700	250	130	50

High TDS STREAM for Incineration

Characteristics of untreated waste water			TREATED WASTEWATER
No.	Parameters	Quality	Quality
1.	PH	3 – 5	7.5 – 8.5
2.	BOD	10 mg/L	< 10 mg/L
3.	COD	100 mg/L	< 100 mg/L
4.	SUSPENDED SOLIDS	3000 mg/L	< 10 mg/L
5.	TDS	3000-4000 mg/L	< 1,1000 mg/L
6.	Acidity	5-6%	Nil

22) **SUMMARY OF WATER USE AND REQUIREMENT OF FRESH/REUSED WATER**

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project **(A)**	1110 KL/Day	
Quantity to be **recycled (B)**	608 KL/Day	Total Reuse: 608 KL/Day (Boiler condensate reuse: 140 KL/day + 43 KL/Day Reuse in domestic and for washing + SSE Condensate 240 KL/Day Reuse + MEE Condensate: 185 KL/Day Reuse)
Total **fresh water** requirement **(C)**	502 KL/Day	
Ensure **Total water requirement = Recycled water + Fresh water i.e. A = B + C**		

23) **REUSE, REDUCE, RECYCLE RECOVERY MEASURES ADOPTED**

a) Reduce

Sr. No.	Item	Quantity	% percentage

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b) Reuse

Sr. No.	Item	Quantity	% percentage
1	SSE Condensate	240 KL/Day	21
2	MEE Condensate	185 KL/Day	16.6
3	Domestic treated wastewater reuse for domestic purpose and for washing	43 KL/Day	3.87
4	Boiler condensate	140 KL/Day	12.6

c) Recycle

Sr. No.	Item	Quantity	% percentage

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24) **FLUE GAS EMISSION**

Sr. no.	**Source of emission With Capacity**	**Stack Height (meter)**	**Name of the fuel**	**Quantity of Fuel**	**Type of emissions i.e. Air Pollutants**	**APCM**
1	Boiler-1(R&D) (3 TPH)	30	LDO or Natural Gas or Agro Waste	4 MT/Day or 5000 Nm3/Day or 12 MT/Day	SPM SO2 NOx	Adequate Stack Height or Multi cyclone separator with bag filter
2	Boiler-2 (3 TPH)	30		4 MT/Day or 5000 Nm3/Day or 12 MT/Day		Adequate Stack Height or Multi cyclone separator with bag filter
3	Thermic Fluid Heater -1 (R&D)	30	LDO or Natural Gas	2 MT/Day or 2500 Nm3/Day		Adequate Stack Height

	(4Lakh Kcal/hr.)					
4	Boiler-3 (5 MT/Hr)	30	LDO or Natural Gas or Agro Waste	6.6 MT/Day or 8000 Nm3/Day or 20 MT/Day		Adequate Stack Height or Multi cyclone separator with bag filter + Scrubber
5	Boiler-4 (5 MT/Hr)	30		6.6 MT/Day or 8000 Nm3/Day or 20 MT/Day		Adequate Stack Height or Multi cyclone separator with bag filter + Scrubber
6	Boiler-5 (5 MT/Hr)	30		6.6 MT/Day or 8000 Nm3/Day or 20 MT/Day		Adequate Stack Height or Multi cyclone separator with bag filter + Scrubber
7	Thermo pack-2 (4 Lakh Kcal/hr.)	30	LDO or Natural Gas	2 MT/Day or 2500 Nm3/Day		Adequate Stack Height
8	D.G. Set (500 KVA) - Stand By (2 Nos.) (1 Nos. for R&D)	15	HSD	6 KL/Day		Adequate Stack Height
9	Spray Dryer 1	15	LDO or Natural	2 MT/Day or 2500	PM	Cyclone Separator

			Gas	Nm3/Day		
10	Spray Dryer 2	15	LDO or Natural Gas	2 MT/Day or 2500 Nm3/Day	PM	Cyclone Separator

Flue gas emission from incineration facility

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Name of the fuel	Quantity of Fuel	Type of emissions i.e. Air Pollutants	APCM
1	Incinerator Scrubber	30	PNG/ LDO	5000 Nm3/ Day or 2 MT/Day	PM HCL CL2 SO2 NOx CO TOC Total Dioxin & Furans Sb+As+Pb+ Cr+ mn+ Ni+ V and other compound	Venturi scrubber or Packed Tower Scrubber with Demister, Liquid Separator, Packed Cartridge Carbon Filter or Alkali Scrubber

Comments:

- The proposed fuel to be used is approved fuel for the requirement of the heat energy and proposed Air pollution Control measures and stack height so as to achieve the emission norms prescribed by the competent authorities are found satisfactory.

25) **PROCESS GAS EMISSION**

Sr. no.	Specific Source of emission	Type of emission	Stack/Vent Height (meter)	APCM
1	Process Vent-1– 2 Nos.	HCl	15	Two Stage Water Scrubber
2	Process Vent-2– 2 Nos.	Cl2	15	Two Stage Alkali Scrubber
3	Process Vent-3– 2 Nos.	NH3	15	Two Stage Water Scrubber
4	Process Vent-4– 2 Nos.	SO_2	15	Two Stage Alkali scrubber
5	Process Vent-5– 2 Nos.	HBr	15	Two Stage Alkali scrubber

6	Carbon Tower – 2 Nos.	VOC	15	Organic Scrubber
7	Solvent tank farm – 2No.	VOC	15	Water/Safety Scrubber
8	Plant 1– 2 Nos.	VOC	15	Water/Safety Scrubber
9	Plant 1– 2 Nos.	VOC	15	Water/Safety Scrubber
10	Plant-1 – 2 Nos.	VOC	15	Water/Safety Scrubber
11	Plant-2 – 2 Nos.	VOC	15	Water/Safety Scrubber
12	Plant-2 – 2 Nos.	VOC	15	Water/Safety Scrubber
13	Plant-3 – 2 Nos.	VOC	15	Water/Safety Scrubber
14	Plant-3 – 2 Nos.	VOC	15	Water/Safety Scrubber
15	Plant-3 – 2 Nos.	VOC	15	Water/Safety Scrubber

Process Gas Emission from Incineration facility

No Process gas will be generated from incineration facility.

Comments:

- The proposed Air pollution Control measures and stack height so as to achieve the emission norms prescribed by the competent authorities are found satisfactory.

26) **FUGITIVE GAS EMISSION**

Sr. No.	Source	Probable Pollutant Emission	Control Measures/ APCM
1	Solvent storage tank	Air pollutant (VOC)	i) Carry out work place area monitoring to find out concentration level in ambient air Close handling system. ii) Provision of breather valve cum flame arrester.
2	Solvent recovery system	Air pollutant (VOC)	i) Solvent recovery system with steam condensation system. Pumps & motors areMechanical seal type.
3	Handling of raw material bags in storage area	Air pollutant (PM)	i) Provision of exhaust ventilation Provision of PPE. ii) Provision of Job rotation to reduceexposure.
4	Flange joints of pipeline, pump & motors	Air pollutant (VOC)	i) Routine &periodic inspection to checkleakage. ii) Preventive maintenance, Follow SOP formaintenance. iii) Pumps & motors will be mechanical sealtype. LDAR program will be followed.Provision of Flange guard.

5	Solid raw material transferring to reactor	Air pollutant (PM)	Hopper will be provided with powder transfer system.
6	Liquid raw material transferring to reactor	Air pollutant (VOC)	Feeding of liquid raw material will be carried out by closed pipeline and mechanical sealpump.
7	Loading /unloading at storage area	Air pollutant (VOC)	Unloading through pipeline totank in a close system.

Comments:

The air pollution control measures proposed for fugitive gas emission are found satisfactory.

27) **HAZARDOUS PROCESSES AND ITS SAFETY MEASURES**

Types of process	Safety measures including Automation
Amination	• DCS System will be provided for control the process • Valve, pipeline will be checked and maintain, in good condition. • All Gaskets will be checked periodically & if new one replaces found defective. • Joints will be checked regularly to found any Leakage. • ADEQUATE PPE will be kept to handle the Hazard. • ISI Portable fire extinguisher & Hydrant line will be provided as per TAC norms. • Sufficient amount of sand/soil are kept to control any spillage. • Flame proof fitting provided. • Eye washer cum shower will be provided near tank-farm area. • Spark arrester will be installed on all vehicles inside the premises. • SBA set, Canister mask and airline mask will be provided. • Earthing& bonding on tanks will be provided. • Vent line dipped in water will be provided.
Bromination	• DCS System will be provided for control the process • Glasses, Acid-Alkali Proof Gloves etc. will be provided to the employees. • Safety measures will be adopted from the design stage. • Safety Valve and pressure gauge will be provided on reactor and its jacket (if jacket is provided). • Utility like Chilling, cooling, vacuum, steaming and its alternative will be provided to control reaction parameters in a safe manner. • Free Fall of any flammable material in the vessel will be avoided. • Static earthing provision will be made at design stage to all solvent handling equipments, reactors, vessels; powder handling equipments. • Any reaction upsets will be confined to the reaction vessel itself. • All emergency valves and switches and emergency handling facilities will be easily assessable. • Further all the vessels will be examined periodically by a recognized competent person under the Gujarat Factory Rules. • All the vessels and equipments will be earthed appropriately and protected against Static Electricity. Also for draining in drums proper earthing facilities will be provided. • Glasses, Acid-Alkali Proof Gloves etc. will be provided to the employees. • Safety measures will be adopted from the design stage.
Chlorination	• DCS System will be provided for control the process

			• Chlorine Emergency Kit will be procured and kept ready at chlorine shed. • Chlorine Hood with blower will be provided with scrubbing arrangement. • SCBA sets will be kept ready at chlorine handling area. • Safety Shower and eye wash will be provided in Chlorine shed area. • Chlorine absorption system will be provided. In case of chlorine leakage in chlorine shed it will be suck through blower and it will be scrubbed in Caustic scrubber. • Emergency siren and wind sock will be provided.
		Hydrogenation	• DCS system will be provided as basic process control system • Hydrogen Gas detectors and flame detectors will be placed near cylinder area and reactor area • Static dissipation points for control of static hazards will be provided. • Earthing relays with interlock will be provided to stop charging of hydrogen if earthing continuity is not there. • Hydrogen cylinder will be placed away from plant area. • Fire hydrant system, sprinkler system and suitable fire extinguisher will be provided. • Wheel choke will be provided. • Ballard will be provided to avoid collision of truck with hydrogen header and piping. • Flame arrestor will be provided on vent line. • Non sparkling tools will be used for maintenance.
		Nitration	Not applicable
		Sulphonation	• DCS System will be provided for control the process • A dyke will be provided to accommodate the full quantity in tank. • Periodic testing of storage tank will be done by competent person. • Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective TLVs. Storage tank vent is connected to scrubber system. • Flange guard provided to prevent splash of material. • Level interlock • Keep container dry. Never add water to this product. • In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. • Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, organic materials, metals, alkalis, moisture. • Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. • While handling always use face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or

	equivalent. • Ensure that eyewash stations and safety showers are proximal to the work-station location.
Others, if any	Not applicable

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28) **SOLVENT MANAGEMENT**

Product No.	Product Name	Solvent	Qty. Used MT/ MT	Qty. Recovered MT/MT	solvent Losses in air (A)	solvent Loss in (Effluent - stripped out) (B)	Distillation Residue (C)	Total Losses (A + B+ C)	Solvent Recovery %
10	ADAMANTYLTRIMETHYAMMONIUM HYDROXIDE	Acetonitrile	0.12	0.06	0.0072	0.018	0.0348	0.06	97
49	1-ETHYL-3-METHYL IMIDAZOLIUM TETRAFLUOROBORATE SOLUTION	Methanol	1	0.8	0.024	0.06	0.116	0.2	98
		Acetone	2	1.9	0.01	0.04	0.05	0.1	98
64	Cychlohexayl dimethylethyl Ammonium Bromide	ETHYL ACETATE	0.4167	0.3749	0.0048	0.0129	0.024	0.0417	96
		ISO PROPANOL	0.0833	0.06249	0.0024	0.0068	0.0116	0.0208	97
219	ADAMANTADINE	ACETONITRILE	0.1	0.05	0.006	0.015	0.029	0.05	98
		BUTANOL	3	2.7	0.036	0.09	0.174	0.3	98

29) **VOC EMISSION AND MITIGATION MEASURES FOR ACHIEVING MAXIMUM SOLVENT RECOVERY AND MINIMUM VOC GENERATION**

Sr. No.	Emission Source	Probable Pollutant Emission	Control measures
1	Solvent Storage are	VOC (Air Pollutant)	Carry out work place area monitoring to find out concentration level in ambient air. Connected with vent condensers with child brine circulation. Close handling system. Provision of breather valve cum flame arrester

2	Solvent Recovery System	VOC (Air Pollutant)	Vacuum distillation Close handling system. There will be recovery of minimum96% solvent.
3	Solvents & Liquid raw material transferring to reactor	VOC, Acid fumes (Air Pollutant)	Feeding of Solvents & liquid raw materials will be carried out by closed pipeline and mechanical seal pump
4	Flange joints of pipeline, pump & motors	VOC	Routine & periodic inspection to check leakage. Preventive

Comments for Sr No: 27,28 and 29:

- Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

30) **LDAR PROPOSED**

S. N.	Component	Frequency of monitoring	Repair preventive maintenance schedule
1.	Valves / Flanges	Quarterly (semi-annual after two consecutive period with < 2% leaks and annual after 5 periods with < 2% leaks)	Repair shall be started within 5 working days and shall be completed within 15 working days after detection of leak.
2.	Pump seal	Quarterly	
3.	Compressor seals	Quarterly	
4.	Pressure relief devices	Quarterly	
5.	Pressure relief devices (after venting)	Within 24 hrs.	
6.	Process drains	Annually	Repair shall be started within 5 working days and shall be completed within 15 working days after detection of leak.
7.	Components that are difficult to monitor	Annually	
8.	Pump seals with visible liquid dripping	Weekly	Immediately
9.	Any component with visible leaks	Weekly	Immediately
10.	Any component after repair / replacement	Within a week	-

The Following methodology to be adopted during LDAR study:

- Identify the Chemical streams that must be monitored.
- Types of components (pumps, valves, connectors, etc.) to be monitored
- Frequency of monitoring.
- Actions to be taken if a leak is detected.
- Length of time in which an attempt to repair the leak must be performed.
- Actions that must be taken if a leak cannot be repaired within guidelines.
- Record-keeping and reporting requirements.

31) **LDAR FOR SPECIFIC SOLVENT**

Sr. No.	Solvent Name	Type of Storage	Mode of Transfer	Charging	Sources of Leakage	Mitigation Measure For find out leakages	Mitigation Measure (If leakages shall be occur)	Action taken for prevention of leakages
1	Toluene, EDC, Xylene, Acetone, Acetonitrile, Ethyl Acetate, Iso Propanol Alcohol, Triethyl Amine, Haxane, Methyl Chloride, Ethyl Chloride, Tri methyl amine, Dimethyl carbonate	Tank	By Pump & Fix Pipe line	Direct Vessel	• Leak from Valve (failure of the valve packing & O-ring) • Leak from pump (Occur at seal) • Leak from tank • Leak from Connectors • Leak from open ended lines	• For using Gas Detector by PID Sensor technology.	• If valve shall be leak stop pumping system and replace with new valve. When pump seal shall be leak immediately stop solvent transfer and immediately repair or replace with new seal.	• Check Thickness of tank • Using fix pipeline for solvent transfer • Minimum use of Connectors & Joins • Provided sufficient Space (Solvent Unloading area) for Solvent Tanker
2	Methanol, Ethanol, Formaldehyde, Ethyl Acetate	Tank/ Drum	By Pump & Fix Pipe line	Direct Vessel	• Leak from Valve (failure of the valve packing & O-ring) • Leak from pump (Occur at seal)	• For using Gas Detector by PID Sensor technology.	• If valve shall be leak stop pumping system and replace with new valve. When	• Check Thickness of tank • Using fix pipeline for solvent transfer • Minimum use of Connectors & Joins

						• Leak from tank • Leak from Connectors • Leak from open ended lines		pump seal shall be leak immediately stop solvent transfer and immediately repair or replace with new seal.	• Provided sufficient Space (Solvent Unloading area) for Solvent Tanker
	3	EDC, DMC, Formic Acid, COSTIC LYE, Thionyl Chloride, Nitric Acid, Triethyl Amine	Tank/ Drum	By Pump & Fix Pipe line	Direct Vessel	• Leak from Valve (failure of the valve packing & O-ring) • Leak from pump (Occur at seal) • Leak from tank • Leak from Connectors • Leak from open ended lines	• For using Gas Detector by PID Sensor technology.	• If valve shall be leak stop pumping system and replace with new valve. When pump seal shall be leak immediately stop solvent transfer and immediately repair or replace with new seal.	• Check Thickness of tank • Using fix pipeline for solvent transfer • Minimum use of Connectors & Joins • Provided sufficient Space (Solvent Unloading area) for Solvent Tanker

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32) **HAZARDOUS WASTE MANAGEMENT MATRIX**

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

	1	ETP Sludge	ETP	SCH-I/35.3	12000	Collection, Storage, Transportation & disposal in TSDF.
	2	Residue from Distillation	Distillation & R&D	SCH-I/20.3	2400	Collection, Storage, Transportation & send to cement industries for co-processing/incineration in CHWIF or inhouse incinerator.
	3	Organic Process Waste	Process & R&D	SCH-I/28.1	3000	
	4	Discarded Drum	Raw Materials/ Products & R&D	SCH-I/33.1	15600 Nos./ Annum	Collection, Storage, Transportation & Sent to GPCB authorized Decontamination facility
	5	Discarded Bags / Liner	Raw Materials/ Products & R&D	SCH-I/33.1	132	Collection, Storage, Transportation & Sent to GPCB authorized Decontamination facility
	6	Used Oil	Machineries/ Utilities	SCH-I/5.1	240	Collection, Storage, Transportation & Sell to GPCB registered re-processor.
	7	Recovered Solvents	Process	SCH-I/28.6	16000	Collection, Storage, Transportation & Sell to end user having rule-9 permission or reuse in plant premises.
	8	Inorganic Salts	Process& Spray Dryer	SCH-I/28.1	3600& 3600	Collection, Storage, Transportation & Disposal in TSDF.
	9	Evaporated Waste and stripper waste	Evaporator (SSE)	SCH-I/35.3	3600	Collection, Storage, Transportation & Disposal in TSDF/incineration in CHWIF or inhouse incinerator
	10	Spent Catalyst	Process	SCH-I/28.2	240	Collection, Storage, Transportation & Sell to regenerator/ Disposal in TSDF/incineration in CHWIF or inhouse incinerator.
	11	Spent Carbon	Carbon Tower	SCH-I/28.3	240	Collection, Storage, Transportation & send for co-processing in cement industries or Disposal to CHWIF or inhouse incinerator.
	12	Off Specification Products	Process	SCH-I/28.4	240	Collection, Storage, Transportation & send for co-processing /incineration in CHWIF or inhouse incinerator.
	13	Sodium Chloride	Process	SCH-II/B2040	1200	Collection, Storage, Transportation & Sell to

						end user having rule-9 permission or reuse within plant premises.
	14	Sodium Sulfate	Process	SCH-II/A4010	1200	Collection, Storage, Transportation & Sell to end user having rule-9 permission or reuse within plant premises.
	15	Dil. HCl	Process & Scrubber	SCH-I/28.1	12000	Collection, Storage, Transportation & Sell to end user having rule-9 permission or Chlorine recovery within premises.
	16	Liqour Ammonia	Scrubber	SCH-I/28.1	240	Collection, Storage, Transportation & Sell to end user having rule-9 permission or reuse within plant premises.
	17	Hydrobromic Acid	Process	SCH-I/28.1	1200	Collection, Storage, Transportation & Sell to end user having rule-9 permission or send to bromine recovery within premises.
	18	Ammonium Chloride	Process	SCH-I/28.1	1200	Collection, Storage, Transportation & Sell to end user having rule-9 permission or reuse within plant premises.
	19	Ammonium Bromide	Process	SCH-I/28.1	1200	Collection, Storage, Transportation & Sell to end user having rule-9 permission or send to bromine recovery.
	20	Sodium Hydrogen Sulphate	Process	SCH-I/28.1	600	Collection, Storage, Transportation & Sell to end user having rule-9 permission or reuse within plant premises.
	21	Sodium Formate	Process	SCH-I/28.1	600	Collection, Storage, Transportation & Sell to end user having rule-9 permission or reuse within plant premises.
	22	Potassium Bromide	Process	SCH-I/28.1	2400	Collection, Storage, Transportation & Sell to end user having rule-9 permission or send to bromine recovery within premises.
	23	Potassium Chloride	Process	SCH-I/28.1	840	Collection, Storage, Transportation & Sell to end user having rule-9 permission or reuse

					within plant premises
24	Sodium Acetate	Process	SCH-I/28.1	360	Collection, Storage, Transportation & Sell to end user having rule-9 permission or reuse within plant premises.
27	Sodium Bromide	Process	SCH-I/28.1	3200	Collection, Storage, Transportation & Sell to end user having rule-9 permission or send to bromine recovery within premises.
28	Magnasium Sulfate	Process	SCH-I/28.1	1200	Collection, Storage, Transportation & Sell to end user having rule-9 permission or reuse within plant premises.
29	Sodium Sulfite/Sodium Bisulfite	Scrubber	Sch-II/ B36	1000	Collection, Storage, Transportation & Sell to end user having rule-9 permission or reuse within plant premises.
30	Dil. HBr	Scrubber	SCH-I/28.1	1000	Collection, Storage, Transportation & Sell to end user having rule-9 permission or send to bromine recovery within premises.
31	Di Methyl Ether	Process	SCH-I/28.1	1200	Collection, Storage,Transportation Sell to end user having rule-9 permission

Hazardous Waste Management from Incinerator facility

Sr. no.	Type/Name of Hazardous waste	Source of generation	Category and Schedule as per HW Rules	Quantity (MT/Annum)	Disposal Method
1	Incineration ash	Incineration Process	SCH-I/ 36.2/ BMW Cat. No. 9	900	Collection, Storage, Transportation & Disposal to TSDF.
2	ETP Sludge	ETP	SCH-I/ 35.3	2920	Collection, Storage, Transportation & Disposal to TSDF.
3	MEE Salt	MEE	SCH-I/ 35.3	7200	Collection, Storage, Transportation & Disposal to TSDF.

Comments:

- Hazardous waste management includes collection, storage, transportation and disposal at TSDF, captive/ common incineration, co-processing/ pre-processing, sold to authorized actual users having Rule-9 permission and recycle/ reuse of waste. SEAC examined the details provided and found it as per requirement.

33) **NON-HAZARDOUS WASTE MANAGEMENT MATRIX**

Sr. no.	Type/Name of non-hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Quantity (MT/Annum)	Management of HW
1	STP Sludge	STP	155	Collection, Storage, Transportation &used as a manure.
2	Fly Ash	Utility	540	collected, stored and transported & sell to brick manufacture.

Comments:

- Other wastes management includes collection, storage,transportation and disposal by selling to actual users and recycle / reuse of waste. SEAC examined the details provided and found it as per requirement.

34) **STORAGE SAFETY MEASURES**

a) Storage of Hazardous chemicals in Tanks

Sr. no	Name of Chemical	Capacity of Tank in MT	Number of Tanks	Hazardous Characteristics of Chemical
TANK FARM (NON-PESO)				
1	Acetone	40	2	Flammable/ Toxic
2	Toluene	10	1	Flammable/ Toxic
3	LDO	30	1	--
4	Formaldehyde	20	1	Flammable
5	Acetonitrile	20	1	Flammable/Toxic
6	Ethyl Acetate	20	1	Flammable
7	Iso Propanol Alcohol	20	1	Flammable
8	Methanol	20	1	Flammable
9	Triethyl Amine	20	1	Flammable/Toxic
10	Butanol	20	1	Flammable
11	Ammonia	20	1	Toxic
12	BTMS	60	1	Corrosive

			(Behentrimonium methosulfate)				
		13	TQ61H (Cyclohexyltrimethy Cyclohexyl Ammonium Hydroxide)	60	1	Flammable/Toxic	
		14	TQ2H (Tetraethyl Ammonium Hydroxide)	60	1	Flammable/Toxic	
		15	ADAMOH	120	2	--	
		16	Haxane	20	1	Flammable/Toxic	
		17	MONOGLYM	120	4	Flammable/Toxic	
		18	DIMETHYL PIPERIDINE(3,5 DMP)	10	1	Flammable	
		19	ETHYLENE GLYCOL MONOMETHYL ETHER	60	1	Flammable	
		20	COSTIC LYE	60	1	Corrosive	
		21	EDC	60	1	Corrosive	
		22	DMC	60	1	Corrosive	
		23	Formic Acid	20	1	Corrosive	
		24	METHYL TRIBUTYL AMMONIUM CHLORIDE 75%	60	1	Corrosive	
		25	TETRA BUTYL AMMONIUM BROMIDE	60	1	Corrosive	
		26	TQ51H TMP-OH 35% [1,1,3,5-Tetra Methyl Piperidinium Hydroxide]	60	1	Corrosive	
		27	CYCHLOHEXYL DIMETHYL ETHYL AMMONIUM BROMIDE	60	1	Corrosive	
		28	MONO METHYL ETHER	60	2	Flammable	
		29	Hydrogen Peroxide	60	2	Corrosive	
		32	TRIPROPYLAMINE (TPA)	60	1	Flammable/ Corrosive	
		33	TRIBUTYLAMINE (TBA)	60	1	Flammable/ Toxic	
		34	Methyl Chloride (Liquefied Gas)	20 KL	1	Flammable	
		35	Ethyl Chloride (Liquefied Gas)	20 KL	1	Flammable	
		36	Tri methyl amine (Liquefied Gas)	20 KL	1	Flammable	
		37	Tri methyl amine	60	1	Flammable	

38	Dimethyl carbonate	60	1	Flammable/Toxic
TANK FARM (PESO)				
1	Bromine	60	2 (including 1Nos. Spare Tank)	Corrosive
2	Sulphuric acid	20	2 (including 1 Spare tank)	Corrosive
3	Hydrochloric Acid	20	2	Corrosive

Safety Measures for PESO Underground storage tank farm: Not applicable as PESO Tanks will be install above the ground.

Safety Measures for PESO storage tank farm

- Isolated storage area, away from process area.
- Full-fledged fire hydrant system with fire water storage tank is provided within plant premises
- Water sprinkler system/ hydrant system is provided at all flammable material storage area.
- Static dissipation points for control of static hazards is provided.
- Fire extinguishers and foam trolleys are provided at strategic locations.
- Online gas detectors system is provided near hydrogen yard, and tank farm.
- Safety instruction boards are displayed for handling & emergency response.
- Dyke walls are provided for containment of liquid spills.
- DCS based safety interlocks, control valves and emergency relief system is provided.
- Flame proof fitting is installed at all areas as per Hazardous Area Classification.
- Double earthing& grounding to the system is provided.
- Earthing relays with interlock is provided to stop transfer of material if earthing continuity is not there.
- Lock & key arrangements are provided for critical chemicals pipeline valves.
- Tanker loading stations with retractable life lines are provided.

b) <u>Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.</u>

Sr. no	Name of Chemical	Capacity of Drum/Bag/ Cylinder/ Glass Bottle	Number of Drum/Bag/ Cylinder/ Glass Bottle	Hazardous Characteristics of Chemical
1	Methyl Chloride	600 Kg	10	Flammable
2	Ethyl Chloride	600 Kg	10	Flammable
3	Formaldehyde	200 Kg	80	Flammable
4	Formic Acid	200 Kg	100	Flammable
5	Ethanol	200 Kg	60	Flammable
6	Hydrogen Peroxide	200 Kg	35	Corrosive

7	Octanol	200 Kg	45	Flammable/Toxic
8	Acetonitrile	200 Kg	25	Flammable/Toxic
9	EDC	200 Kg	25	Flammable/Toxic
10	Ethyl Acetate	200 Kg	30	Flammable
11	Iso Propanol	200 Kg	30	Flammable
12	Methanol	200 Kg	30	Flammable
13	Acetic Acid	200 Kg	50	Flammable/Toxic
14	Diethyl Carbonate	200 Kg	60	Flammable
15	Dimethyl Carbonate	200 Kg	30	Flammable
16	Thionyl Chloride	200 Kg	25	Corrosive
17	Nitric Acid	200 Kg	35	Flammable/Toxic
18	Triethyl Amine	200 Kg	50	Flammable/Toxic
19	Butanol	200 Kg	20	Flammable
20	Ammonia	200 Kg	10	Toxic
21	Hydrogen Gas (2Nos. Bank)	600Kg	2	Explosive
22	Chlorine gas	900Kg	10	Corrosive
23	DI METHYL ETHER	60 Kg	100	Flammable
24	Methyl Chloride	600 Kg	10	Flammable
25	Ethyl Chloride	600 Kg	10	Flammable

- FLP type light fittings will be provided.
- Proper ventilation will be provided in Godown.
- Proper label and identification board /stickers will be provided in the storage area.
- Conductive drum pallets will be provided.
- Drum handling trolley / stackers/fork lift will be used for drum handling.
- Separate dispensing room with local exhaust and static earthing provision will be made.
- Materials will be stored as per its compatibility study and separate area will be made for flammable, corrosive and toxic chemical drums storage.
- Smoking and other spark, flame generating item will be banned from the Gate.
- Ensured that all storage areas have doors with locks.
- Ensured that all containers are properly closed.
- Handling of materials from Drum shall be done only through Mechanical Transfer System.

Safety measures for Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE CHEMICALS	➢ Storage in compatible storage unit with flame proof fitting, also provide firefighting measures. ➢ Only trained person allowed handling. Safety Shower cum eye washer provided. ➢ Drums to be stored on pallet with the suitable trap. Cautionary notice boards will be displayed. ➢ FLP type light fittings will be provided. ➢ Proper label and identification board /stickers will be provided in the storage area. ➢ Conductive drum pallets will be provided. Proper earthling will be provided. ➢ Provision of earth pit and its regular inspection. ➢ Drum handling trolley / stackers/fork lift will be used for drum handling. ➢ Separate dispensing room with local exhaust and static earthling provision will be available. ➢ Materials will be stored as per its compatibility study and separate area

		will be available for flammable, corrosive and toxic chemical drums storage. ➢ Smoking and other spark, flame generating item will be banned from the Gate. ➢ NFPA labels will be provided on drums for hazard identification of the chemicals. ➢ Exhaust will be provided at ground level and upper level of drum storage area for proper ventilation. ➢ Drum loading unloading procedures will be prepared and implemented. ➢ Fire extinguishers will be provided as per class of fire. ➢ Spill Kit for any kind of leakage control will be provided.
	CORROSIVE CHEMICALS	➢ Storage in compatible storage unit with flame proof fitting, also firefighting measures will be provided. ➢ Only trained person allowed handling. ➢ Safety Shower cum eye washer provided. Drums to be stored on pallet with the suitable trap. ➢ Cautionary notice boards will be displayed. ➢ Preventing or minimizing contact between corrosive substances and skin, mucous membranes and eyes. ➢ Corrosive substances should not be allowed to come in contact with materials that may react. ➢ All the containers, pipes, apparatus, installations and structures used for the manufacture, storage, transport or use of these substances may be protected by suitable coatings, impervious to and unaffected by corrosives. ➢ All containers or receptacles should be clearly labelled to indicate their contents and should bear the danger symbol for corrosives. ➢ A high standard of maintenance and good housekeeping will be essential. ➢ Adequate ventilation and exhaust arrangement whether general or local, should be provided whenever corrosive toxic gases or dust are present. Personal protective devices should be used depending upon the nature of work viz. (a) Corrosion-resistant and impervious suits, or hand-gloves, aprons etc. (b) Respirator, gas mask or self-contained breathing apparatus, (c) Barrier cream when exposure is not severe. First aid treatment facilities should be provided and all concerned should be instructed to follow safe practices such as (a) Prolonged washing with water (b) Removing contaminated clothing (c) Seeking immediate medical help. (d) Safety showers and eye washers should be provided.
	TOXIC CHEMICALS	➢ Storage area should be cool, dry, well ventilated, and clean and protected from external heat source. ➢ It should be remote from elevators, gangways or ventilating systems. ➢ Ventilation must be sufficient to prevent accumulation of vapour pockets. All fan switches should be outside the storage area. ➢ The building for the storage should be entirely of noncombustible construction and separate from other building. In case the storage will be not in a different building it should be ground floor with at least two exists opening outside and separated from other parts of the building by fire resisting walls and floors. ➢ Keep "emergency kits' handy and in proper working condition to control leakage and train workers in their use. ➢ Appropriate facility for absorption through caustic soda/lime/soda ash solutions should be established and maintained in the event of leakage. The containers should not be immersed in same absorption media.

		➢ Self-breathing apparatus, gas mask and 'emergency kits' should be located at strategic points under working condition and to be easily accessible in the event of emergency. ➢ Appropriate minimum safety distances as stipulated in the above mentioned rules have to be maintained.
	REACTIVE CHEMICALS	--
	Others, if any	--

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35) **FIRE LOAD CALCULATION**

Total Plot Area:	50400 Sq. mt
Area utilized for plant activity:	40411 Sq. mt
Area utilized for Hazardous Chemicals Storage:	5260
Number of Floors:	Ground floor + 4 floor
Water requirement for firefighting in KLD:	400 KLD*2
Water storage tank provided for firefighting in KL:	400 KLD*2
Details of Hydrant Pumps:	Diesel operated FM pump (581 m3/hr), Diesel operated Standard pump (108 m3/hr) and Electrical Jockey pump (10.8 m3/hr) will be provided.
Nearest Fire Station :	By Road Distance Dahej SEZ fire station is 9.62 meter away from the Project Site.
Applicability of Off Site Emergency Plan:	-

Comments:

The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 400 KLD*2. SEAC found it as per the requirement.

36) **WORKERS SAFETY AND OCCUPATIONAL HEALTH MANAGEMENT**

- The Occupational health center (OHC) will be declared as Emergency communication center (ECC) which is near the administrative building and out of reach all the hazardous area. Its internal telephone contacts will be provided.
- A well-equipped Occupational Health Center (OHC) will be developed with PFT Machine, Blood Pressure Monitor, First Aid Kit, etc. First-Aid Center with necessary arrangements, 2 Nos. of Bed facility will be available at OHC, 1 Nos. of Room will be available, 1 Nos. of stretcher, 1 Nos. of set have medicated Oxygen Cylinder and Permanent Medical Officer. It is equipped all necessary medicines and Antidotes.

Occupational Health and Safety Program will be established Considering following:
Pre-employment Medical Check Up
1) Physical test
2) General Examination like Temp., Pulse, Pressure,
4) Cardiogram
5) Vision test
6) Colour blindness test
7) Lung function test
8) Blood Group
Periodical Medical Check up

1) Physical test
2) General Examination like Temp., Pulse, Pressure,
4) Cardiogram
5) Vision test
6) Colour blindness test
7) Lung function test
8) Blood Group

Comments:

Project proponent has provided PPEs, Occupational health center (OHC) with adequate provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

37) **DETAILS OF MEMBERSHIP OF COMMON FACILITIES:**

Sr. No.	Membership for Common Facility	Membership Certificate issuing agency along with Date of Issue and validity of membership
01	CETP	**Name of CETP:** Dahej CETP **Date of Issue of membership along with validity:** **Capacity of CETP (KLD):** 03/09/2022 **Allotted Capacity (KLD) to member unit:** 115 KL/Day **Spare Capacity (KLD) of CETP: --**
02	TSDF site	**Name of TSDF:** M/s. BEIL Infrastructure Limited **Date of Issue of membership along with validity:** Issue date: 04/08/2023 **Capacity of TSDF (MT):** 1900000 MT **Allotted Capacity (MT) to member unit:** 20340 MT **Spare Capacity (MT) of TSDF:**0792614.39 MT
03	Common Hazardous Waste Incineration Facility	M/s. BEIL Infrastructure Limited Membership Certificate issued date 04/08/2023
04	Common Spray Drying Facility	Not Applicable
05	Common MEE Facility	Not Applicable
06	Common Conveyance System	Not Applicable
07	PESO permission	Unit will obtain Fire NOC after getting EC and before getting CTO.
08	FIRE permission	Unit will obtain Fire NOC after getting EC and before getting CTO.
09	Health Certificate	Pre-Employment medical checkup will be carried out.

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38) **EMERGENCY MEASURES PROPOSED AND PREPAREDNESS ACTION PLAN**

The management structure at M/s. Tatva Chintan Pharma Chem Limited

The following personnel for onsite emergency plan

- Chief Emergency Controller
- Incident Controllers and Deputy Incident Controllers

- Site Main Controllers
- Essential Workers
- Assembly points
- Emergency control center
- Fire control arrangements
- Medical arrangements

STANDARD OPERATING PROCEDURE (SOP) - (EMERGENCY)

- As soon as emergency alarm will have heard, all essential workers shall report to IC or SMC.
- They shall carefully listen to the instructions given by IC or SMC
- According to the type of emergency/accident, they shall get equipped with PPE/Firefighting equipment and devices.
- The runner among the workers shall inform SMC/IC and key personnel if they are not at site.
- The messenger amongst the workers shall deliver messages to nearby units as per the instructions of SMC/IC.
- The in-charge of medical arrangements shall prepare first-aid and other required facilities for the injured.
- The other essential workers shall try to control the emergency as per the instructions given to IC.
- IC would keep SMC informed about the status of control measures being taken at the site and ask for other requirements e.g. Mutual aid, equipment etc., if necessary.
- SMC would co-ordinate with outside agencies regarding control measures being taken, need for external help, evacuation, medical treatment etc.

39) **CER ACTIVITIES PROPOSED YEAR WISE/ IN CASE OF EXPANSION ANY ADDITIONALITY SUGGESTED AND ITS COMPLIANCE (AS PER THE MOEF & CC GUIDELINES)**

Total cost of Project (Rs in Crores)	**Total Cost of CER (Rs in Crores or Lakhs)**	**Percentage (%)**
Rs. 60 Crores (including cost of Incinerator facility i.e. Rs. 10 Crores)	Rs. 1.20Crores	2%

Sr No	**Activities**	**Name of Villages**	**Cost (Rs in Lakhs or Crores)**
1	Installing Solar Light and panels in Vav Village to promote green energy. (250 kWp) [a 250kW system would require an area of 2300 Sq.mt.]	Vav	0.99 Crores
2	Beautification of surrounding pond develop greenbelt periphery and cleaning of Vav village pond and Provision of fencing at border of pond. Total 2100 Nos. of trees*500 Rs.= 14.70 Lakhs and Protection(Cage) & fencing at border of pond = 0.30 Lakhs	Vav	0.108 Crores

3	Afforestation programmes: Joining hand with Gujarat Forest department of Dahej and help in installing approx. 4000 local trees per year	Dahej	0.10 Crores

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Comments:

As per MoEF&CC's OM dated: 01.05.2018 and 30.09.2020, SEAC examined that the proposed cost of CER i.e 2 % (Rs 1.20 Crores) which is as per the requirement.

40) **ENVIRONMENT MANAGEMENT PLAN (ESPECIALLY WITH CEPI AND NON CEPI GUIDELINES, AS MAY BE APPLICABLE)**

Sr. No	Unit	Detail	Capital Cost (Rs. In Lakhs or Crores)	Total Recurring Cost (Rs. In Lakhs or Crores per Annum)
1	Wastewater	Installation of ETP, MEE, SSE, STP, Cost of membership of CETP	137 Lakhs	114.35 Lakhs
2	Air	Adequate Stack Height with MCS with Bag Filter + Water Scrubber for better dispersion of pollutants. Adequate pollution control system will be provided for control of gaseous emission.	101 Lakhs	2 Lakhs
3	Hazardous Management	Proper collection, Safe Handling, Storage within premises and disposal of waste at approved TSDF, re-cyclers, re-processors.	16 Lakhs	687 Lakhs
4.	Fire & Safety	Safety measures for Hydrogenation i.e.O2 detector, auto damping system, with DCS will be Installed, Cost of safety measures for Ammoniation i.e. Water Sprinkler System, Cost of safety measures for Bromination i.e. FRP based bromine scrubber with DCS will be Installed, Fire Hydrant System	135.664 Lakhs	2.6 Lakhs
5	Green Belt Development	33% of the area will be developed as greenbelt.	29.106 Lakhs	2 Lakhs
6.	Occupational Health	Cost of PPE, 2 Beds, oxygen Cylinder & Antidote (OHC), Imparting safety training to employees every 6 months, Medical examination of	27.5 Lakhs	8.3 Lakhs

		employees (Permanent Doctor with Paramedical Staff)		
7.	Noise Control	Provision of sound enclosures and Ear plugs	1 Lakhs	0.2 Lakhs
8.	VOC Control & LDAR	Cost of LDAR system with cooling and chilling unit and DCS	15 Lakhs	--
9	Environment Monitoring Program	Regular monitoring of various environmental parameters will be carried out to check the effectiveness of the control system.	10 Lakhs	2.5 Lakhs
10	CER Activity	• Installing Solar Light and panels in Vav Village to promote green energy • Beautification of surrounding pond develop greenbelt periphery and cleaning of Vav village pond and Provision of fencing at border of pond. • Afforestation programmes: Joining hand with Gujarat Forest department of Dahej and help in installing approx. 4000 local trees per year	120 Lakhs	--
11	Cost of conservation plan of Schedule-I species, if any	5 Nos. of Schedule-1 Species found within the study area	6.125 Lakhs	--
12	Incinerator facility	Incineration scrubber, Cost of maintenance of APCM System, Installation of Online continuous monitoring system	163.30 Lakhs	86.00Lakhs
Total			**761.69 Lakhs**	**904.95 Lakhs**

Comments:

The overall environment management plan (EMP) provided for capital and recurring cost for wastewater treatment, air emission control, noise control, hazardous waste disposal, fire & safety, occupational health, environment monitoring program, green belt and corporate environmental responsibility was deliberated and found satisfactory.

41) **RECOMMENDATIONS OF SEAC**

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development

	planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and **unanimously** recommends the same to SEIAA for environmental clearance." **Conditions with which Environment Clearance is recommended:**
42)	**GENERAL CONDITIONS** **Construction Phase** a) "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades. b) "No uncovered vehicles carrying construction material and waste shall be permitted." c) "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured." d) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads). e) No excavation of soil shall be carried out without adequate dust mitigation measures in place. f) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing. g) Grinding and cutting of building materials in open area shall be prohibited. h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited. i) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable). **SPECIFIC CONDITIONS:** 1. Unit shall install CEMS **[Continuous Emission Monitoring System]** in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. **[For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].**

2. (a) The pollution load of R & D products shall remain the same as committed. (b) Project proponent shall not take continuous/commercial production of the R & D materials. Necessary approvals shall be obtained from the concern authorities prior to commercial production of R & D materials. (c) Unit shall submit relevant details of R & D products like raw materials, its safety measures to the regulatory authority well before R & D activity. (d) Unit shall submit relevant details of R & D products like different wastes generated (Quantity & Quality) and its management to the regulatory authority within a month of R & D activity. (e) PP shall not sold R&D Products.
3. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
4. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
5. National Emission Standards for Bulk drug and formulation (Pharmaceuticals) Industry issued by the Ministry vide G. S. R. 541 (E) dated 06/08/2021 and amended from time to time shall be followed.
6. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
7. All measures shall be taken to avoid soil and ground water contamination within premises.

8. <u>Safety & Health:</u>

a) PP shall obtain PESO permission for the storage and handling of hazardous chemicals. (If applicable).

b) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.

c) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.

d) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.

e) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.

f) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.

g) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.

h) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.

i) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.

j) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.

k) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

l) The projectmanagement shall prepare a detailed Disaster ManagementPlan (DMP) for the project as per the guidelinesfromDirectorateof IndustrialSafety and Health.

m) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals.

n) Provide double earthling to solvent storage tanks: (1) Unit shall provide effective fire hydrants, water monitors & foam application system at solvent storage tank farm area. (2) Unit shall provide adequate safety system such as water sprinklers, water curtains, foam pouring system etc. to restrict cascade fire emergency in solvent tank farm.

o) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.

p) Unit shall provide water sprinkler to the ammonia storage cylinder.

q) Unit shall provide a spare tank with emergency transfer system and bund/ dyke wall to Br2 storage tank.

r) Unit shall provide safety valve & rupture disc to the Hydrogenation vessel.

s) Unit shall provide chlorine leakage control emergency kit and FRP hood with scrubber system for chlorine safety.

WATER

9. Total water requirement for the project shall not exceed 1110 KLD. Unit shall reuse 608 KLD of treated effluent within premises. Hence, fresh water requirement shall not exceed 502 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority shall be obtained for procurement of water.
10. The industrial effluent generation from the project shall not exceed 680 KLD.
11. Management of Industrial effluent shall be as under:

Concentrated Stream (465 KLD)

- 260 KLD effluent generated from High TDS/COD (process effluent -230 KLD,R & D effluent -10 KLD & Scrubbing media -20 KLD)shall be treated Primary ETP followed by Single Stage Evaporator (SSE) having Stripper facility. Condesnate of Single Stage Evaporator (SSE) -240 KLD shall be reused in industrial process. And remaining Salt -10 MTD shall be sent to TSDF site.
- 205 KLD effluent generated from scrubber of incineration plant shall be treated in ETP having primary, secondary and tertiary treatment units followed by MEE. MEE Condensate -185 KL/Day) shall be reused in incineration scrubber. And salt – 20 MTD will be send to TSDF site

Dilute Stream (Low COD/ TDS) - (215 KLD):

- 115 KLD effluent generated from Low TDS/COD (Process -40 KLD, cooling tower -20 KLD, Boiler -15 KLD, and Washing -40 KLD) shall be treated in ETP and send to CETP Dahej (115 KLD) only after complying with the inlet norms of CETP prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
- 100 KLD effluent generated from Scrubbing media from inorganic stream (100 KLD) shall be collected & treated into Collection Tank and further send for Spray Dryer. Generated salt from Spray dryer 10 MTD shall be send to TSDF site.

12. Domestic wastewater generation shall not exceed 43 KL/day for proposed project and it shall be treated in STP.It shall not be disposed off into soak pit.Treated sewage shall be utilized for washing purpose within premises. There shall be no dishcrgae of treated domestic wastewater in to surrounding environment.
13. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
14. Treated waste water shall be sent to common facilities (CETP) only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
15. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.
16. Unit shall feed wastewater to in-house MEE only after ensuring content of effluent for COD/VOC so as not to get air borne during evaporation in order to achieve no adverse impacts on Environment and Human Health.

17. Treated wastewater shall be subjected to in-house spray dryer only after achieving inlet norms prescribed by GPCB ensuring content of effluent for COD so as not to get air borne during spray drying after APCM in order to achieve no adverse impacts on Environment and Human Health.
18. Unit shall provide STP and ETPs with adequate capacity.
19. The unit shall providemetering facility at the inlet and outlet of ETP, resue and maintain records for the same.
20. Proper logbooks of ETP; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent sent to common facilitiesCETP Dahej; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

21. Unit shall not exceed fuel consumption for Boilers, Thermic Fluid Heaters, Spray DryerIncinerator and D G Sets etc as per the point no. 24 as mentioned above.
22. PP shall use only approved fuelsin Boilers, Thermic Fluid Heaters, Spray DryerIncinerator and D G Sets etc
23. Unit shall provide adequate APCMs with flue gas generation sources to achieve the norms prescribed by GPCB/ CPCB as mentioned in Sr no. 24
24. Unit shall provide adequate APCM with process gas generation sources as the point no. 25 as mentioned above.
25. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety& Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
    - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
    - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
26. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
27. For control of fugitive emission, VOCs, following steps shall be followed :
    a. Closed handling and charging system shall be provided for chemicals.
    b. Reflux condenser shall be provided over Reactors / Vessels.
    c. Pumps shall be provided with mechanical seals to prevent leakages.

d. Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.

28. Solvent management shall be carried out as follows:
    - ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
    - ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
    - ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
    - ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
    - ✓ Solvents shall be stored in a separate space specified with all safety measures.
    - ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
    - ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.
29. Close loop solvent recovery system with adequate condenser system shall be provided to recover solvent vapours in such a manner that recovery shall be maximum and recovered solvent shall be reused in the process within premises.
30. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
31. Regular monitoring of ground level concentration of PM10, PM2.5, SO2, NOx, HCl, Cl2, CO, TOC, Total Dioxin & FuransSb+As+Pb+Cr+ mn+ Ni+ V and other compound, HBr, NH3 and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

32. All the hazardous/ solid waste management shall be taken care as per the point no. 32 and 33 as mentioned above.
33. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
34. Unit shall explore the possibilities for environment friendly methods like co-processing of

hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.

35. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
36. STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.
37. Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.
38. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

39. The PP shall develop green belt within premises (16632 Sq. m i.e. 33 % of the total plot area) as submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

40. The project proponent shall carry out the activities of amount of Rs 1.20 Crores (Installing Solar Light and panels in Vav Village to promote green energy. (250 kWp) [a 250kW system would require an area of 2300 Sq.mt.] at Vav, Beautification of surrounding pond develop greenbelt periphery and cleaning of Vav village pond and Provision of fencing at border of pond Total 2100 Nos. of trees*500 Rs.= 14.70 Lakhs and Protection(Cage) & fencing at border of pond = 0.30 Lakhs at Vav and Afforestation programmes: Joining hand with Gujarat Forest department of Dahej and help in installing approx. 4000 local trees per year at Dahej] proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
41. As proposed, at least Rs. 6.125 lakhs shall be allocated for the conservation plan Schedule- I species. (MoEF&CC)

	42. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Aqua Air Environmental Engineering Pvt. Ltd. and submitted by the project proponent and commitments made during presentation before SEAC and proposed In the EIA report shall be strictly adhered to in letter and spirit.
43)	**COMPLIANCE AND ADMINISTRATION/APPEAL OF EC ORDERS** 1. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded. 2. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities. 3. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government. 4. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions. 5. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded. 6. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010. 7. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com& (b) seacgujarat@gmail.com

2.	SIA/GJ/IND3/429750/2023	**M/s Ramesh Chemical Industries** Survey No. 172, Jetwadi, Kapura Road, Tal: vyara, Dist: Tapi, Gujarat.	**EC-Reconsideration**
Category: **5(f) – B1**			

Project status: **EC- Expansion**

Project located either in CEPI or non CEPI **: non CEPI**

PP submitted salient features of the project including Water, Air and Hazardous waste management are as under from Sr. No. 1, 3 to 40. And in Sr. No. 2 detailed deliberation of Committee is mentioned. Comments of SEAC is given in relavant points.

1) **DETAILS OF APPLICATION:**

1.1 Type of application:	Brownfield Project
1.2 Proposal no.	SIA/GJ/IND3/429750/2023
1.3 Category of Project:	5(f)-B1
1.4 Date of application:	21/06/2023
1.5 Date of EDS by SEIAA a) EDS Raised b) Reply by PP	Not applicable
1.6 Date of EDS by SEAC a) EDS Raised b) Reply by PP c) Accepted by SEAC	EDS Raised: 18/08/2023 Reply By PP: 23/08/2023 Accepted: 01/09/2023
1.7 TOR No. & Date:	TOR Letter No. SEIAA/GUJ/TOR/5(f)/954/2021 dated 24.06.2021
1.8 Date and place of Public Hearing	The Public Hearing was conducted dated: 29.06.2022 at 11:00 hrs. at Project Site Survey No. 172, Jetwadi, Kapura Road, Tal.: vyara, Dist.: Tapi, Gujarat.
1.9 Name of accredited Environmental Consultant & address along with Accreditation No. & Validity	**M/S. ECOGREEN ENVIRO SERVICES Accreditation Vide -** NABET/EIA/2124/SA 0185 & Issue Date: January 24, 2023 Valid Till: December 24, 2023 & its extension vide letter no.QCI/NABET/ENV/ACO/23/3073, dated: Dec 19, 2023, valid up to March 18, 2024
1.10 SEAC Meeting No. and Date:	AGENDA NO. 03 – 710TH SEAC VC MEETING DATED: 18 OCTOBER, 2023.
1.11 ADS raised by SEAC meeting No & date:	AGENDA NO. 03 – 710TH SEAC VC MEETING DATED: 18 OCTOBER, 2023.
1.12 Reply Submitted by PP dated:	23/12/2023
1.13 Revised Consideration SEAC Meeting No. and Date:	AGENDA NO. 02 – 768TH SEAC VC MEETING DATED: 25th JANUARY, 2024.

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2) **DELIBERATIONS OF SEAC:**

1) PP remained absent during SEAC meeting dated 18.10.2023. Also, PP has not submitted any email regarding remaining absent during meeting dated: 18.10.2023.
2) Committee noted that PP is remained absent during meeting dated: 18.10.2023.
3) **After deliberation, SEAC unanimously decided to defer the proposal and consider the same in one of the upcoming meeting of SEAC.**
4) PP has submitted reply of above query generated on SEAC VC meeting, through

Parivesh portal.

5) This proposal is reconsidered in SEAC VC meeting dated: **25.01.2024.**
6) PP along with their technical expert/consultant, M/s.ECOgreen ENVIRO SERVICESremains present in the meeting and made presentation before Committee.
7) Technical Expert/Consultant M/s. Gaurang Environmental Solutions Pvt. Ltd. has submitted undertaking stating that they valid NABET accreditation certificate and entire EIA/EMP work and report preparation is been carried out by them and their staff. Original Baseline survey (Baseline Period – Dec-20 to Feb-21) was carried outout by M/s Noida Testing Laboratories (NABL accrdiated laboratory). Both have done MoU for the same.
8) Technical Expert/Consultant M/s. ECOgreen ENVIRO SERVICES has submitted undertaking stating that they valid NABET accreditation certificate and entire field study, data collection, data analysis and report preparation is been carried out by them and their staff. Re-validation of Baseline survey (Revalidation Period – Dec-23) was carriedout by M/s Aditya Environ(NABL accrdiated laboratory). Both have done MoU for the same.
9) This is an existing unit and now proposed for expansion in manufacturing of Synthetic Organic Chemicals.
10) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
11) SEIAA has issued ToR vide letter No. SEIAA/GUJ/TOR/5(f)/954/2021 dated 24.06.2021.
12) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
13) During the meeting, the project was appraised based on the information furnished in the EIA Report, various issues raised during the public hearing and details presented during the meeting.
14) Committee deliberated on public hearing proceedings. Public hearing was conducted on dated 29.06.2022 at Survey No. 172, Jetwadi, Kapura Road, Tal: vyara, Dist: Tapi, Dist: Navsari PP presented the issues raised by participant and issues received through written representation and its reply given by Project Proponent.
15) Committee deliberated on baseline environmental data and quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect.
16) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures

including On-Site / Off-Site Emergency Plan has been covered in the RA report.

17) Committee noted that as per MoEF&CC's notification dated: 25.06.2014, it fulfils the criteria i.e the fresh water consumption is 24.299~24.3 KLD which is less than 25 KLPD, fuel consumption is Boiler-Imported Coal/Bio coal: 0.800 TPD, Bio coal: 1 TPD, Diesel: 20 Litre/hrwhich is less than 25 MTPD and Not covered in the category of MAH units as no use of such chemicals as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989 (beyond threshold limit) as per the legal undertaking submitted with EIA report, thus project fall in category "B" and hence applied at State level. In this regard PP has submitted a Notorised undertaking dated 01.02.2024
18) PP has submitted Non –Agricultural persmission for the Survey Number. 172 dated 16.03.1985 in the name of Shri Chootubhai Govindbhai Bhakt
19) PP has submitted sale deed for Survey No. 172 in name of Ramesh Chemical Industries.
20) PP submitted satellite map showing that there is no any villages, School etc. within 500 m radius of the project site. Aerial distance of nearest habitat of village Panwadi is @ 0.96 Km, Jetwadi is @ 1.78 Km and Vyara is @ 3.96 Km, Aerial distance of nearest Water Bodies of Mindhola River is @ 0.163 Km and Aerial distance of nearest Hanuman Temple is @ 0.47 Km PP also submitted that there are no Eco sensitive zones, wild life sanctuaries within the 10 km area from the boundary of the project site.
21) There is no earlier EC. The unit is having valid Consolidated Consent & Authorization (CC&A) from GPCB vide CC&A order no.: AWH-109425 dated 24.09.2020 with validity upto 16.05.2025 for existing Product i.e 1. Chloral – 18 MT/M, Ethyl Chloride- 6 MT/M andPure HCL (30 %) – 59.760 MT/M at Plot No. 172, Jetwadi, Kapura Road, Vyara – 394650, Tal: vyara, Dist: Tapi.
22) PP has submitted Certified Compliance Report (CCR) from concerned authority i.e from GPCB for existing CCA vide letter dated 11.04.2023as per MoEF &CC's OM dated 08.06.2022. PP mentioned that all conditions are complied, hence no any partly and non-complied conditions.
23) PP has submitted that, during last three years GPCB has issued a one Show Cause Notices on 09.07.2021for which PP has submitted a reply to the GPCB. PP has also submitted that, there is no legal court case and public complaint against this unit.
24) During meeting committee asked for following details:
    - ✓ PP has been asked to submit revised Product Table and Raw Material Tableconsidering removal of proposed 497 MT/Month of HCL from the product table.
    - ✓ PP has been asked to mention spent solvent generation quantity in

hazardous waste Table.

- ✓ PP has been asked to clarify the maximum number and quantity of chlorine tonners for not falling in MAH unit as per threshold quantity mentioned in MSIHC Rules, 1989 and amendment thereof.

25) Later on PP has submitted following details through email dated 01.02.2024:

- ✓ PP has presentedthat,theyremoved proposed quantity of HCL (30%) - 497 MT/Month from Producttable and it is mentioned in Hazardous Waste Generation Table. After getting EC, we will also obtain amendment in CC&A considering removal of pure HCL (30%) as By-product and adding it in Hazardous Waste Table.
- ✓ PP has submitted revised Hazardous Waste Tableand same details are given in format at Sr. No. 32.
- ✓ PP has mentioned that threshold Quantity of Chlorine as per MSIHC Rules: 10 MT (900 Kg-Tonner x 11 Nos), Our maximum quantity of Chlorine storage: 9 MT (900 Kg-Tonner x 10 Nos.) The quantity of Chlorine stored is <10 MT (<11 Nos.) i.e., 9 MT (10 Nos.). Henceforth, our unit does not fall in MAH units as per MSIHC Rules, 1989. License to store compressed gas in cylinders and certificate from PESO i.e., Petroleum and Explosives Safety Organisation for 9 MT i.e.,10 Nos.. In this regard PP has submitted a notoriased undertaking dated 01.02.2024

26) Committee found presentation and reply submitted by PP was satisfactory.

3) **EIA REPORT (BASELINE STUDIES AND RISK ANALYSIS)**

Sr. no.	Particulars	Details (Give brief note / Conclusion of the particular subject)	Page no., Section no. & chapter no. of EIA report
a	Ensure that there is no change in EIA report w. r. t. ToR i.e. Form-1 & PFR	As compared to TOR application i.e., Form –I & PFR, there is no change in EIA Report.	--
b	Baseline environmental monitoring period	**Previous Baseline Monitoring Period**: December 2020 to February 2021 **Revalidation Baseline Monitoring period**: December-2023	Refer Page no.: 105 of chapter 3 of EIA Report.
c	Whether baseline data is primary or secondary data? 1) If baseline data carried out by other NABL	The data is primary and has been collected during period of December 2020 to February 2021. And then again collected during December – 2023 for revalidation purpose.	Refer Page no.: 105 of chapter 3 of EIA Report.

<table>
<tr><td></td><td></td><td>accredited laboratory then MoU between both.
2) If baseline data is taken from another EIA report, then MoU between NABET consultant and industry whose data used in preparing present EIA report and time period of baseline data shall be as per MoEF&CC's OM dated: 08.06.2022.</td><td>1) Re-validation of Baseline survey (Revalidation Period – Dec-23) was carried out by NABL Accredited Lab M/s. Aditya Environ. The MoU has been done between M/s. ECOgreen Enviro Services and M/s. Aditya Environ (NABL accredited laboratory) vide letter no.: EGES_HOO_230331_00018. The original Baseline survey (Baseline Period – Dec-20 to Feb-21) was carried out by NABL Accredited Lab M/s. Noida Testing Laboratories.

2) The baseline data is not taken from another EIA report.</td><td>Refer Annexure - XVI (NABL certificate)</td></tr>
<tr><td></td><td>d</td><td>Baseline study area (Km)</td><td>10 km from the project site</td><td>Pg. No. 120, Fig. No.: 3.10 of Chapter- 3 in EIA Report</td></tr>
<tr><td></td><td>AIR</td><td></td><td></td><td></td></tr>
<tr><td></td><td>e</td><td>No. of AAQM stations including project site</td><td>8 AAQM Stations: Project Site
Downwind: Kapura, Khanpur, Jetwadi.
Upwind: Panvadi, Musa, Chikhli.
Crosswind: Bhatpur</td><td>Refer Page no.: 153 of chapter 3 of EIA Report.</td></tr>
<tr><td></td><td>f</td><td>Parameters considered for AAQM including project specific parameters.</td><td>PM_{10}, $PM_{2.5}$, SO_2, NO_x, CO, HCl& VOC</td><td>Refer Page no.: 156 of chapter 3 of EIA Report.</td></tr>
<tr><td></td><td></td><td colspan="3">
<table>
<tr><th>Sr. no.</th><th>Parameters</th><th>Range of Concentrations (µg/m^3)</th><th>Remarks</th></tr>
<tr><td>1</td><td>PM_{10}</td><td>50 µg/m^3 to 97 µg/ m^3</td><td rowspan="5">Results are found within limit of NAAQS</td></tr>
<tr><td>2</td><td>$PM_{2.5}$</td><td>22 µg/m^3-45 µg/m^3</td></tr>
<tr><td>3</td><td>SO_2</td><td>5.0 µg/m^3 to 11.2 µg/m^3</td></tr>
<tr><td>4</td><td>NO_x</td><td>10.2 µg/m^3-18.9 µg/m^3</td></tr>
<tr><td>5</td><td>CO</td><td>0.35 mg/m^3-0.54 mg/m^3</td></tr>
<tr><td>6</td><td>HCl</td><td>BDL</td><td></td></tr>
</table>
Note: With reference to the above comparison of Baseline results (December-2020 to February-2021) and reanalysis/revalidated results carried out in December-2023, it is concluded that the reanalysis/revalidated result of all the parameters of Ambient Air Monitoring are nearer to the results submitted during baseline monitoring (December-2020 to February-2021).
</td></tr>
</table>

<table>
<tr><td></td><td>g</td><td>Whether the results of AAQM is within the norms prescribed in NAAQS?
If no, give reasons as per EIA report</td><td>Ambient air quality results considering all parameters (PM10, PM2.5, SO2, NOx, CO, HCl & VOC) are found well within the permissible limit of NAAQS during the baseline period.</td><td>Refer Page no.: 157 & Table: 3-30 & 3-31 of chapter 3 of EIA Report.</td></tr>
<tr><td></td><td>h</td><td>Commentsfor AAQM results w. r. t. NAAQS</td><td>Ambient air quality results considering all parameters (PM10, PM2.5, SO2, NOx, CO, HCl & VOC) are found well within the permissible limit of NAAQS during the baseline period.</td><td>Refer Page no.: 157 & Table: 3-30 & 3-31 of chapter 3 of EIA Report.</td></tr>
<tr><td></td><td>i</td><td>Software used for the mathematical Modelling for anticipated incremental GLCs (Ground Level Concentrations</td><td>AERMOD VIEW 9.8.1. The Industrial Source Complex – Short Term (ISCST3) dispersion model is a steady-state Gaussian plume model</td><td>Refer Pg no. 197 Section 4.7.1. Fig: 4.1 of Chapter-4 in EIA Report.</td></tr>
<tr><td></td><td>j</td><td>The resultant concentrations w. r. t. NAAQS and its conclusion.</td><td>After Proposed Project, incremental ground level resultant concentration has been found within Limits w.r.t. NAAQS with respect to all air sampling locations (8 Nos.).
<table>
<tr><th>Parameter</th><th>Max Conc (µg/m3)</th><th>Distance and Direction from the project center</th></tr>
<tr><td>PM10</td><td>1.03</td><td rowspan="6">1 KM, S</td></tr>
<tr><td>PM2.5</td><td>0.82</td></tr>
<tr><td>NOx</td><td>0.90</td></tr>
<tr><td>SO2</td><td>1.85</td></tr>
<tr><td>HCl</td><td>0.028</td></tr>
<tr><td>Cl2</td><td>0.011</td></tr>
</table>
However, the ambient air quality of the surrounding may not have any significance increase due to the project activity because unit will provide Multi Cyclone Separator, Bag Filter & Adequate stack height with Boiler & Thermopack to control flue gas emission within the permissible limit. Also, two stage Water Scrubber & Alkali Scrubber will be provided with reactor vessel to control process gas emission.
Unit will also develop greenbelt area (52.12 % of plot area) within the plant premises to reduce the impact emission with respect to the magnitude and distance. Unit will also develop LDAR programme to control the VOC emission</td><td>Refer Pg no. 197 Section 4.7.1., Table: 4.7 & 4.8 Fig: 4.1 of Chapter-4 in EIA Report.</td></tr>
</table>

			within the permissible limit at regular interval.	
	WATER			
	k	No. of monitoring stations including project site wrt water a) Groundwater b) Surface water	a) Ground water: 08 nos. b) Surface water: 04 nos.	Refer Page no.: 129 & Table: 3-13 of chapter 3 of EIA Report.
	l	Conclusion of the Monitoring during baseline study of water (ground water and surface water)	**Conclusion for Surface water**: • The pH values of all analyzed samples ranged between 7.64 – 8.32 and are within the Class A limit (6.5-8.5). • The TDS levels range was observed to be 206 -272 i.e Class A limit (500 mg/l) while TDS Levels of SW-3 i.e Ukai Left bank Canal were found to have surpassed the limits of even Class E Category. • The dissolved oxygen values ranged between 2.2 to 6.9 mg/l and were within the Class A limit of 6 mg/l or more at all location (SW1, SW2 & SW4) and SW3 were observed to be in Class E category. • The chlorides level in surface water samples were observed in range 29.35-43.15 mg/l which is below 250 mg/l within “Class A” whilein SW-3 i.e Ukai Left bank Canal, Chlorides levels were 23972 mg/l i.e., higher than limits of Class E. • The sulphates level ranged from 16 to 25 mg/l which is below 400 mg/l and therefore can be classified under “Class A” except in SW3 i.e Ukai Left bank Canal Sulphates were observed to be 2890 mg/l were observed to be in Class E category. • The Total Coliform levels of all samples were found to be within 5000 MPN/100 ml i.e can be categorized under “Class C”. • The BOD of all samples were found to be in range of 4.1 to 6.5 mg/l i.e exceeding the limit of 3 mg/l of Class C. • Comparing the values of pH, DO, BOD and Total Coliforms with ‘Use based classification of surface waters’ published by Central Pollution Control Board; the analyzed surface waters is moderately polluted and classified as “Class C”. Thus, all the analyzed parameters were within the limits specified for suitable for “**Drinking water source after conventional treatment and disinfection**.”	

				Note: **With reference to the above comparison of Baseline results (December-2020 to February-2021) and reanalysis/revalidated results carried out in December2023, it is concluded that the reanalysis/revalidated result of all the parameters of Surface Water monitoring are nearer to the results submitted during baseline monitoring (December-2020 to February-2021). Results have been also compared / validated with other secondary data available and they found nearby to the results.** **Conclusion for Ground water:** • The pH ranged between 6.42 to 7.62, which are well within the specified standards of 6.5 to 8.5 limit. • Total hardness was recorded to range from 10.0 to 440 mg/l, which is within the permissible limit 600 mg/l at all location. • The Total Dissolved Solids (TDS) concentration recorded ranged between 20.14 to 552 mg/l and was within the permissible limits (2000 mg/l) at all locations. • Chlorides at all the locations were within the desirable limits (250 mg/l) as it ranged between 5.87-113.4 mg/l. • Sulphates at all the locations were within the permissible limits (400 mg/l) as it ranged between 22 –214 mg/l. • Bacteriological studies reveal that no coliform bacterial are present in the samples. The heavy metal contents were observed to be in below detectable limits. • All physical and general parameters were observed within the permissible limit as per IS10500:2012 (Second Revision). Thus, it is recommended that "Water should be filtered and disinfected prior to be given for drinking water requirement". **"Water should be filtered and disinfected prior to be given for drinking water requirement".** **Note: With reference to the above comparison of Baseline results (December-2020 to February-2021) and reanalysis/revalidated results**	

			carried out in December2023, it is concluded that the reanalysis/revalidated result of all the parameters of Ground Water monitoring are nearer to the results submitted during baseline monitoring (December-2020 to February-2021). Results have been also compared / validated with other secondary data available and they found nearby to the results.	
	m	No. of monitoring stations including project site wrt soil	Monitoring location of soil: 02 nos.	Refer Page no.: 122& Table: 3-8of chapter 3 of EIA Report.
	n	Conclusion of the Monitoring during baseline study of land / soil	The porosity of soil varied from 27.68 % to 34.52 % and can be considered as very well for air and water movement in the soil. The water holding capacity varied from 12.22 % to 14.32 % which is very well for proper plant root development. Bulk density varied from 1.209 to 1.162 g/cm3. pH varied from 7.10 to 7.44 which indicates soil is Slightly Alkaline nature. Calcium varied from 1068 to 1152 mg/kg. Magnesium varied from 432 to 462 mg/kg. The electrical conductance is ranges from 328 to 320 µS/cm that shows good condition of soil for seed germination and plant growth. Nitrogen varied from 298 to 304 kg/h, Phosphorous varied from 28.66 to 34.22 kg/h and Potassium varied from 158 to 165 kg/h that indicates good physical condition and with good availability of nutrients like Nitrogen, Potassium, and Phosphorus. **Note: With reference to the above comparison of Baseline results (December-2020 to February-2021) and reanalysis/revalidated results carried out in December- 2023, it is concluded that the reanalysis/revalidated result of all the parameters of Soil monitoring are nearer to the results submitted during baseline monitoring (December-2020 to February-2021). Results have been also compared / validated with other secondary data available and they found nearby to**	--

			the results.	
	o	No. of monitoring stations including project site wrt Noise	Monitoring location of Noise: 08 nos.	Refer Page no.: 144 & Table: 3-22 of chapter 3 of EIA Report.
	p	Conclusion of the Monitoring during baseline study of Noise	The noise level at all monitoring location in study area were observed to be within CPCB noise limit of the categorized zone. The noise levels in the study area varies from 44.3 dB(A) to 58.6 dB(A) during day time and 39.1 dB(A) to 46.6 dB(A) during night time. The source of noise in the study area was observed to be community noise in residential and commercial area and traffic noise at location in proximity to road. **Note: With reference to the above comparison of Baseline results (December-2020 to February-2021) and reanalysis/revalidated results carried out in December2023, it is concluded that the reanalysis/revalidated result of all the parameters of Noise monitoring are nearer to the results submitted during baseline monitoring (December-2020 to February-2021). Results have also been compared / validated with other secondary data available and they found nearby to the results.**	--
	q	Any other details: **a) Details of carbon footprint:** Difference between Carbon footprint & Sequestration = (1312.5 – 356.9) CO_2 TPA= 955.6 CO_2 TPA. In Nutshell, we will save / capture / reduce approx. 356.9 tons within first 5 year or 27.2 % of total carbon dioxide generated during year (considering direct as well as indirect Source of CO2 emission) through mitigation measures suggested. After 5 years, remaining 955.6 Tons will be sequestrated/reduced in next 15 years throughadditional mitigation measures. Hence, it will take avg. 20 years to achieve carbon neutral through mitigation measures implemented during this year. **b) Details of water footprint:** To reduce the water foot print, we have proposed recycle / reuse of distilled water in process, i.e.,0.089 KLD or 32.49 KL/Year i.e. 0.4 %&7.6% by Rain water Harvesting in monsoon season. Hence, overall,8.0 % water will be reuse/recycle within plant premises to reduce the water foot print. **c) Details of carbon sequestration:** 955.6 tons within first 5 years CO2 will be sequestrated by the unit through using solar panels, Segregation of MSW at source, transportation of RM & FG by CNG / EV / hydrogen fuel-based HMV, transportation of Employees by Electric Vehicles, tree plantation near ETP area as well as within plant premises and also outside the plant premises. After 5 years, remaining 955.6 Tons		

		will be sequestrated/reduced in next 15 years throughadditional mitigation measures. Hence, it will take avg. 20 years to achieve carbon neutral through mitigation measures implemented during this year. **d) Details of roof top rain water harvesting and reuse within premises:** Approx. 7.4 KLD rain water will be harvested and 8 KL*1 No. storage tank will be provided for the storage of rain water.
	r	Details of Schedule-I species and its conservation plan, if any
		The proposed project is located at Jetwadi Village. There is seven schedule – I species i.e., Nolio (*Urva edwardsi*), Shikra (*Accipiter badius*), Indian Peafowl (*Pavo cristatus*), Indian Python (*Python molurus*), Bengal Monitor (*Varanus bengalensis*), Indian Rat Snake (*Ptyas mucosa*), and Indian Cobra (*Naja naja*) found during baseline survey. For that, we have prepared conservation plan (Plantation, Awareness Program & Water Tank, Cash Price, Recue Kit etc.) and submitted to PCCF & Chief Wildlife Warden, Gandhinagar. Refer **Annexure-XXII** for Wildlife Conservation Plan.

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4) **RISK ANALYSIS & ITS MITIGATION MEASURES IN GENERAL AS GIVEN IN EIA REPORT**

(Refer pg. no. 338 - 350, Section 7.3.7, Table 7.17 to 7.23 & Fig 7.7 to 7.12 of Chapter 7 in EIA.)

Company will take all mitigation measures to prevent accidents like: -

- ✓ High velocity Sprinkler system to be installed in R.M, F.G, Solvent yard area.
- ✓ Airline respirator & SCABA provision to be made in plant area.
- ✓ Fire hydrant system with hose rill, fire extinguishers, foam type trolley (9 kg & 50 kg each capacity) for proposed plant to be installed as per TAC/NFPA Norms in each plant and buildings i.e., Hazardous chemical storage area, ETP area.
- ✓ All the PPEs and Fire proximity suits procured shall conform to BIS or other equivalent standards to all employees. Work zone monitoring shall be carried out for safe working condition during 8 hr of shift.
- ✓ Use of PPEs in the form of visuals (with instruction in local language) has to be displayed at appropriate places.
- ✓ Provision of Occupational Health Center and OHS (occupational Health & Safety) Training to all employees as per the provisions under the Gujarat Factories Rules, 1963 and It's amendments.
- ✓ Periodic On-Site Emergency Mock Drills and occasional Off Site Emergency Mock Drills to be conducted.
- ✓ Emergency handling facilities to be maintained in operating condition at all time.
- ✓ Safe operating procedure to be prepared for hazardous process and material handling process.
- ✓ Safety devices and control instruments to be calibrated once in a year.
- ✓ Proper color work as per IS 2379 to plant pipeline, equipment to be done once in a six month to protect from corrosion.
- ✓ Permit to work system to be implemented 100 % for hazardous work in the plant.
- ✓ The details of emergency equipment are given in on site emergency Plan along with its quantity.

- ✓ Manual call points for fire location identification to be installed in plant premises.
- ✓ Induction safety course to be prepared and trained all new employees before starting duties in plant.
- ✓ Unit shall have to obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules.
- ✓ Unit shall have to provide effective Isolation for Process area and storage of hazardous chemicals.
- ✓ Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
- ✓ Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
- ✓ Flame proof electrical fittings shall have been provided in the plant premises, wherever applicable.

Please Refer Ch.7 of EIA Report for detailed Risk Analysis & Its Mitigation Measures.

5) **PRODUCT PROFILE AND BRIEF NOTE OF PRODUCT PROFILE**

Sr. No.	Name of Product	Chemical Formula	CAS No.	Existing Capacity (MT/Month)	Proposed Capacity (MT/Month)	Total After expansion Capacity (MT/Month)	Use
Main Group: A							
A1	Chloral	CCl3CHO	75-87-6	18	117	135	Manufacturing of Rose crystal or Pharmaceuticals Intermediate
	Ethyl Chloride	C2H5Cl	75-00-3	6	54	60	Dyes Intermediate
A2	Ethyl Chloride	C2H5Cl	75-00-3	---	150	150	Dyes Intermediate
Main Group: B							
B1	Diethyl meta–amino phenol (DMAP)	C10H15NO	91-68-9	---	5	5	Dyes Intermediate
B2	Rhodamine – B	C28H31ClN2O3	81-88-9	--	5	5	Dyes Intermediate
B3	Crysopheni ne G	C30H28N4NaO8S2+	2870-32-8	---	10	10	Dyes Intermediate

B4	Rose crystal	C10H9Cl3O2	90-17-5	---	10	10	Perfumeries product
B5	Mono Chloro Benzene	C6H5Cl	108-90-7	--	250	250	Pharma Intermediates, Solvents, Air freshener, Rubber chemical, Pigments etc.
	Ortho dichloro benzene	C6H4Cl2	95-50-1		33	33	
	Meta dichloro benzene	C6H4Cl2	541-73-1		7	7	
	Para dichloro benzene	C6H4Cl2	106-46-7		60	60	
	1,2,3 trichloro benzene	C6H3Cl3	87-61-6		5	5	
	1,2,4 trichloro benzene	C6H3Cl3	120-82-1		5	5	
B6	Tri Chloro Acetyl Chloride	C2Cl4O	76-02-8	---	100	100	Pharma Intermediates
B7	Chloro Acetyl Chloride	C2H2Cl2O	79-04-9	---	250	250	Pharma Intermediates
B8	Mono chloro acetic acid	C2H3O2Cl	79-11-8	---	200	200	Detergents, coating, Pharma, cosmetics manufacturing
B9	2,4 Di chloro phenol	C6H4Cl2O	120-83-2	---	250	250	Use in synthesis of antiseptics and Pharma
B10	2,6 Di chloro phenol	C6H4Cl2O	87-65-0	---	250	250	Use in synthesis of antiseptics and Pharma
B11	Chlorinated Paraffin Wax (Plasticizer)	CnH2n-4Cl6	63449-39-8	---	200	200	PVC pipe manufacturing
B12	Benzyl chloride	C7H7Cl	100-44-	---	75	75	dyes and

								pharmaceutical intermediate
		Benzaldehyde	C_7H_6O	100-52-7		75	75	Pharma intermediate
		Sodium benzoate	C7H5NaO2	532-32-1		6.75	6.75	Food preservatives
		Benzyl benzoate	C6H5CH2O2CC6H5	120-51-4		65.24	65.24	Pharma intermediate
	B13	Ortho Chloro phenol	C6H5ClO	95-57-8	---	254	254	Use into manufacturing of 2,6 Dichloro phenol
		Para Chloro phenol	C6H5ClO	106-48-9		230	230	Use into manufacturing of 2,4 Dichloro phenol
	B14	Benzo trichloride (Trichloro Toluene)	C7H5Cl3	98-07-7	---	228	228	dyes and pharmaceutical intermediate
	B15	Meta Chloro Propio Phenone	C9H9ClO	34841-35-5		20	20	Intermediate of Bupropion Hydrochloride
	Main Group: C							
	C1	Iso Propyl Alcohol Hydrochloric Acid (IPA HCl)	CH3CH2CH2OH. HCl	67-63-0	--	20	20	Pharma Intermediate
	C2	Methanolic Hydrochloride	CH3OH.HCl	7647-01-0				
	C3	Ethyl Acetate Hydrochlor	C4H8O2.HCl	6945-92-2				

	ide						
C4	Ethyl Alcohol Hydrochloride	C2H5OH.HCl					
C5	Dimethyl Amine Hydrochloride	(CH3)2.NHCl	506-59-2				
C6	Benzoic acid	C_7H_6O2	65-85-0				Food Preservative
C7	Sodium Benzoate	C7H5NaO2	532-32-1				Food preservatives
Main Group: D							
D1	Sulphuric acid 75 %	H2SO4	7664-93-9	--	96.5	96.5	Sell to Fertilizers plant, Alum Plant, Lab grade & Batteries manufacturer
Total				**24**	**287.5 or 750.4**	**311.5 or 774.5**	

Note: - At present manufacturing of only Chloral and ethyl chloride (A1 line) as per CC&A is carried out. After proposed expansion, Plant will be engaged in production activity in four series namely A, B, C and D. Only one product will be produced at a time in four different series A, B, C and D. As and when manufacturing of A1 product from A group will be produced, manufacturing of B group product will not be carried out.

- Either product A1 or A2 will be manufactured at a time from series A.
- Any one product from B1 to B15 product will be manufactured at a time from series B.
- Any one product from C1 to C7 product will be manufactured at a time from series C.
- Any one product from D1 to D2 product will be manufactured at a time from series D.

After expansion Total production capacity shall not exceed 774.5 MT/month.

 # Brief Note of Product Profile:

1. No of Manufacturing Plants: 2
2. Brief Note regarding number of Products to be manufactured considering plant capacity: 2-3products to be manufactured considering plant capacity of 38 MT/DAY.

6) **PROJECT DETAILS (COST/LAND OWNERSHIP/NA PERMISSION ETC.)**

a) Total **cost of Proposed**Project (Rs. in Crores):

Existing	Proposed	Total
0.30	3.25	3.55

Break-up of proposed project Cost:

Details	Existing (Rs. In Crores)	Proposed (Rs. In Crores)	Total (Rs. In Crores)
Land	0.30	---	3.55
Building		0.36	
Plant & Machinery		0.85	
EMP		2.04	
Total	**0.30**	**3.25**	**3.55**

b) **Details of Land / Plot ownership details:** (Linking between Land ownership and PP is required.)

i. **Total Plot area (sq mt): 7182.93**

ii. **GIDC Plot Allotment letter/ NA documents:** Survey No. 172 Jetwadi, Kapura road, Vyara, Dist. Tapi, Gujarat 394650 has been allotted to M/s. Ramesh Chemical Industries.

iii. **Rent agreement, if any:** Not Applicable

iv. **Other Land Possession documents, if any:** The land is already in possession of M/s Ramesh Chemical Industries and land use of the land is already changed to industrial. Land document is attached as **Annexure-VIIof EIA report.**

7) **IF IT IS EXPANSION WHETHER CCR/EARLIER EC COMPLIANCE GIVEN:**

Sr. no.	Particulars	Brief Information/ Details	Remarks
1	Earlier Environmental Clearance **(EC)** details [EC letter no. and date & obtained from MoEF&CC/SEIAA.]	**Not Applicable** as the Project was established and is operational before 2006, since than no change/increase in the production has been carried out hence Environmental Clearance under EIA Notification 2006 for the existing unit was **not applicable**.	**Not Applicable** as the Project was established and is operational before 2006
2	In case EC not obtained for existing project: Copy of first CTE (NOC) & CCA obtained from GPCB i.e. before 14/09/2006. (For justification that you have not obtained EC for existing project).	The existing unit have Obtained Consolidated Consent and Authorization i.e., CC&A obtained before 2006 vide**Consent order No:13085, Date: 11.10.1999, Validity up to 31/12/99.** The unit also has valid CC&A Copy vide consent order no: AWH-109425 Issue date: 24.09.2020 Validity: 16.05.2025.	Existing unit have Obtained Consolidated Consent and Authorization & CTE for existing

			Unit has been obtained Consent to Establish (CTE after TOR) for proposed expansion project vide **CTE order No.: 52395, dated: 2/3/2022.**	products.
	3	**Certified Compliance Report (CCR)** from the concern authority **(IRO-MoEF&CC/MS-GPCB) for existing EC/ CCA** as per the MoEFCC's OM no.F.No: IA3-22/10/2022-IA.III [E 177258] dated: 08/06/2022.	**Unit has obtained Certified Compliance Report (CCR)** vide file no.: GPCB/CCA-NAV-376/ID-21152 dated 11th April, 2023.	Unit has obtained Certified Compliance Report (CCR)
	4	**Summary of CCR and Time bound action taken report/ plan of conditions i.e partly complied/ non-complied**	Unit has obtained Certified Compliance Report (CCR) vide file no.: GPCB/CCA-NAV-376/ID-21152 dated 11th April, 2023. **Also, all conditions are complied with. Hence, no any partly and non-complied conditions.**	Unit has obtained Certified Compliance Report (CCR) from the GPCB.
	5	Details of latest Consent to Operate (CTO/CC&A) obtained from GPCB along with date of issue and validity	Existing unit have Obtained Consolidated Consent and Authorization under water Act and Hazardous waste Act CC&A vide **consent order no: AWH-109425** **Issue date: 24.09.2020** **Validity: 16.05.2025.** Certified Compliance Report (CCR) is submitted with EIA Report.	Existing unit have Obtained Consolidated Consent and Authorization
	6	Details of **Improvement notice, Show- cause notice, Notice of direction, Directions, Closure direction etc**. issued by the GPCB to the existing unit in **last 3 years**. Details in tabular format comprise **issues, actions taken and current status**.	Show-cause notice was issued by GPCB vide letter no.: **SCN-594594** on **dated:9/07/2021** and action taken summary is submitted in to EIA report. **Compliance of the show cause notice was given on 23rd July, 2021.**	--

	As per the latest XGN screen shot.		
7	Details of **Public Complaints** (If any)	No public complaints.	--
8	Details of **litigation** pending before any court of Law against the Project (If any)	No litigation pending against the unit	--

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Comments:

As per MoEF&CC's OM dated: 08.06.2022, PP has submitted CCR from concerned authority with action taken report of all conditions are complied with. Hence, no any partly and non-complied conditionswhich is found satisfactory. Also, PP has submitted that, during last three years GPCB has issued a one Show Cause Notices on 09.07.2021for which PP has submitted a reply to the GPCB. PP has also submitted that, there is no legal court case and public complaint against this unit.

8) **PUBLIC HEARING APPLICABILITY AND ITS COMPLIANCE:**

Main Issues raised by stake holders		**Commitments by Project proponent and Action Plan**	**Action Plan**	**Budgetary Allocation**
Shri Jivanbhai Madhubhai Chaudhary Village: Ambiya Ta: Vyara Dist.: Tapi	He stated that this factory is running for many years, and it will continue to operate in the future as well. We have no objection against the company.	-	None	Nil
The chairman asked that is there any problem to the surrounding villages from the existing factory?		-	None	Nil
The representative replied that the existing factory has not created any problem till date.				
Shru Nareshbhai Mangabhai Gamit Vill: Bhatpur, Ta: Vyara Dist.: Tapi	I hope the company will expand and get approval soon. So that the surrounding villages develop.	-	None	Nil

Shri Jigneshbhai Thakorbhai Gamit Vill.: Andharwadi Najik, Ta.: Vyara Dist.: Tapi	He stated that we do not have any objection against the expansion of the company. How many people will get employment from the proposed project?	The representative of the company replied that seven persons will get employment from the proposed project.		
The chairman asked that will be surrounding villagers get employment?		The representative of the company replied that locals are employed in the existing factory.	Emphasis on local employment will be given for additional employee required for the expansion. Selection of candidate shall be based on the company requirement standards.	Nil
As per requirement of the company, educated locals should be given priority in employment.		Locals will be given priority in employment after the expansion as well.		
Shri Rajeshbhai Parmar Vill.: Madav, Ta.: Vyara Dist.: Tapi	He stated that we have no objection if the production of the company increases.	-	None	Nil
Shri Rameshbhai Makanbhai Bhakta Vill.: Kapura Ta.: Vyara Dist.: Tapi	He stated that my land is adjacent to the company in Jetwadi Village. I have been farming for the last 40 years and this factory is 35 years old but till date no incident of any kind of loss or side effect has been reported from this factory. We do not mind the gradual development of this company. No air pollution generated by the company till date. We wish progress of	-	In the proposed expansion one additional 1000U thermo pack, 8 reactor vessel (process stack) and one distillation unit is proposed. However, to mitigate the air pollution additional Multicyclone with Bag filter to stack	Budgetary provision of Capital 110 lacs and recurring cost of 46.5 Lac is already made under air pollution and water pollution control of the proposed expansion.

	the company and provide employment.		attached to Thermo pack, Two stage water and Alkali scrubber for each process stack and Water scrubber followed by caustic scrubber is proposed in stack attached to distillation unit. With proposed air pollution control system, the air emission shall be well within the statutory limit.	
Shri Nayanbhai Parmar Vill.:Panwadi , Ta.: Vyara, Dist.: Tapi	He stated that we have no objection if the production of the company increases.	-	None	Nil
The H'ble Chairman asked that		The representative of the company replied that		
What are the provisions of fire safety in the existing plant and after the expansion as well?		We have installed fire hydrant system, fire alarm, foam type and powder type, fire extinguishers and we have installed powder type fire extinguishers in electric panel as well.		
Have the staff been trained on how to use this instrument in case of any incident?		Yes, we have provided training to the		

	staff.		
Are you going to use borewell as source of water?	Yes, we are using bore well as source of water in the existing plant and we will use the same after the expansion as well, for which the company has obtained approval from CGWA.		
Which activities are you going to carry out under CSR after proposed expansion?	We will carry out activities for education, drinking water, healthcare, development of women and children and plantation under CSR.		
He further stated that the government is planning to build Amrut Sarovars for water conservation and water storage, in which 75 Amrut Sarovars are to be constructed in all the districts. The company should check if any Amrut Sarovar is going to be built within the affected area of the factory and if any, the company should provide help for the same. Amrut Sarovar will be built at the expense of the government, but the government expect decoration around the Amrut Sarovar and develop picnic point from the corporate sector under CSR. A board will be displayed for helping under CSR for beautification of Amrut Sarovar.	The representative of the company replied that we will provide help as far as possible.	Nearest Amrut sarovars site as per list of the proposed under mission Amrit Sarovars from the project are at Chikhalda and Dadakvan where Amrit Sarovar are going to be developed. Ramesh Chemical proposed to donate 2 lakhs at each site for the beautification of the same.	· 4 Lacs under CER.

Comments:

PP presented the issues raised by participant and issues received through written representation and its reply given by PP as mentioned in Public Hearing proceedings. Also,

	time bound action plan for issues raised during public hearing are found satisfactory.
9)	**SITING CRITERIA DETAILS (OTHER THAN GIDC):**

Sr. no.	Environmental Sensitivity	Name/Specific details	Siting criteria as per GPCB guidelines dated: 05.06.2022 & its amendment	Aerial Distance in Km
1	Habitat (Residential Area)	• Jetwadi Village • Panwadi Village • Vyara City	500 m	• 1.78 Km in SW • 0.96 Km in NE • 3.96 Km in NE
2	Water Bodies			
	River	• Mindhola River • Purna River	500 m	• 0.163 Km in N • 4.65 Km in S
	Natural Nallah/Drain	Non-Within 10 km Study area	500 m	None
	Lake/Pond/Wetlands	• Ram Talav	500 m	• 3.14 Km in NNE
	Water supply Tanks/Reservoirs	• Rampura Check Dam	500 m	• 6.57 Km in N
	Canal	• Ukai Left Bank Canal	500 m	• 0.5 Km in E
3	Protected Monuments/Heritage sites/Public Buildings i.e School, colleges, etc.	• Vibrant Science school • K M Gandhi Primary School • College of Agriculture in Polytechnic Vyara • Vyara General Hospital • Dhanvantri Clinic, Vyara • Hanuman Temple • Vyara Sub Post Office • Vyara Municipal Fire Station	500 m	• 2.45Km in N • 2.47 km in N • 1 Km in N • 2.38 km in N • 2.86 km in NW • 0.47 Km in SE • 2.89 Km in N • 2.42 Km in NE
4	National/State Highway OR Express way	• SH176 • NH-56	Project Construction Shall be 0.040 km away from centerline of the state highway road & 0.075 km away from centerline of the National highway road	• Adjacent to project site • 2.16 Km in N
5	Coastal Regulation Zone (CRZ) (In case of Coastal area projects)	Not Applicable as this is not Coastal area project.	0.500 km from HTL	Not Applicable as this is not Coastal area project.

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Comments:

1) SEAC has been coming across various cases by existing industrial units, located outside GIDC, operating under CCA and not needing EC, but now seeking EC due to expansion or due to new products requiring EC. In such projects, located outside GIDC, SEAC, has been examining the rationale of examining such cases from siting criteria which are required to be seen, in case of new projects. SEAC felt that while applying the siting criteria in new units, is fine but applying siting criteria, in units which have been existing and have come for seeking EC on account of any genuine reason, is not proper. It felt that in fast-paced development, urbanization industrial development, upcoming various infrastructure, the existing units, for no reason of theirs, become sitting duck, from criteria parameters.
2) SEAC felt that in expansion cases - for existing industrial units- the siting criteria become a retrospective application which is not proper. SEAC also felt that if such cases, which are coming forward to seek EC and are showing positive approach towards environmental compliance, they need to be considered in a holistic perspective.In view of above discussion, SEAC decided that siting criteria will not be applied for industrial units coming for expansion because these units are already in operation and any adverse decision- on grounds of siting criteria at this stage-will not be appropriate-administratively and procedurally."

SEAC has deliberated on siting criteria i.e habitation, river/ natural drain/ lake/ pond/canal/ reservoirs, protected monuments/ heritage sites/public buildings i.e. Schools, colleges, Coastal Regulation Zone (CRZ), etc and found that aerial distance of nearest Water Bodies of Mindhola River is @ 0.163 Km and aerial distance of nearest Hanuman Temple is @ 0.47 Km are found satisfactory.

10) **A. APPLICABILITY OF GENERAL CONDITIONS AND COMMENTS WITH SPECIFIC CLARIFICATION OF MOEF&CC GUIDELINES:** Any project or activity specified in Category 'B' will be appraised at Central level as Category 'A' if located in whole or in part within 5 Km radius from the project boundary of:-

Sr No	Particulars	Aerial Distance in Km
1.	Protected Areas notified under the Wildlife (Protection) Act 1972 (53 of 1972)	**None Within 10 km Study area** Vansda National Park**: 37.40 Km in SSE** Purna wildlife sanctuary**: 31.76 Km in SE.** Dandi Eco Sensitive Zone**: 64.96 km in SW**
2.	CPA/SPA (Critically Polluted Area/Severely Polluted Area) as identified by the CPCB	**None Within 10 km Study area** **Sachin GIDC: 54.66 Km in W.**
3	Eco sensitive areas as notified	**None Within 10 km Study area**

	under sub-section (2) of section 3 of EPA-1986	Vansda National Park**: 37.40 Km in SSE** Purna wildlife sanctuary**: 31.76 Km in SE.** Dandi Eco Sensitive Zone**: 64.96 km in SW**
4	Interstate boundaries and international boundaries	**None Within 10 km Study area** **Gujarat- Maharashtra Inter-state Boundary: 21.46 km in NE.**

Comments:

As per MoEF&CC's notification dated: 25.06.2014 and as per details submitted by PP, General condition is not applicable.

B. Ensure compliance of category as defined in the amendment to EIA Notification, 2006 vide SO 1599 (E) dated 25/06/2014. i.e. Conditions of small units: (in case of 5 (f) category units and outside the GIDC)

Sr no.	Condition	Compliance with justification
1	Water consumption less than 25 M3/day;	Total water requirement of the unit after proposed expansion shall be 24.299~24.3 KLD.
2	Fuel consumption less than 25 TPD;	Boiler-Imported Coal/Bio coal: 0.800 TPD; Bio coal: 1 TPD; Diesel: 20 Litre/hr. Total quantity of fuel will be 1.82 TPD which is less than 25 TPD.
3	Not covered in the category of MAH units as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989 as per the legal undertaking submitted with EIA report.	**Complied.** Not covered in the category of MAH units as no use of such chemicals as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989 (beyond threshold limit) as per the legal undertaking submitted with EIA report.

Comments:

As per details submitted by Project Proponent, it is small scale unit.

11) **AREA ADEQUACY AND COMMENTS**

Total Land area: 7182.93 Sq. m.

Floor-wise land area break-up table

Sr.No.	Component	GF (Sq. m.)	FF (Sq. m.)	SF (Sq. m.)	Percentage of Ground Floor
1	Security cabin 1	6	-	-	0.1
2	Finished Goods Area	250			3.5

3	Raw Material Area	250			3.5
4	Toxic Drum storage area	104	-	-	1.4
5	Flammable Drum storage area	50	-	-	0.7
6	Tank Farm Area(Peso)	20	**-**	**-**	0.3
7	Haz. waste storage area	80	-	-	1.1
8	ETP area	50	-	-	0.7
9	Plant Building(Existing)	350	350	350	4.9
10	Plant Building(Proposed)	250	250	250	3.5
11	Boiler & Utility Area	105	-	-	1.5
12	Chlorine Gas Cylinder Storage	50	-	-	0.7
13	Fuel Storage	15	-	-	0.2
15	Admin building, OHC & Lab	96	96	96	1.3
16	Road and Open Area	1,763.24	-	-	24.5
17	Green Belt (52%)	3743.69	-	-	52.1
Total		**7182.93**	**696**	**696**	**100**

Area Adequacy table:

Sr. No.	Component	Area required (Sq. m.)	Area proposed (Sq. m.)	GF (Sq. m.)	FF (Sq. m.)	SF (Sq. m.)	Percentage
1	Security cabin 1	6	6	6	**-**	**-**	0.1
2	Finished Goods Area	100	250	250			3.5
3	Raw Material Area	200	250	250			3.5
4	Toxic Drum storage area	90	104	104	-	-	1.4
5	Flammable Drum storage area	45	50	50			0.7
6	Tank Farm Area (Peso)	15	20	20	**-**	**-**	0.3
7	Haz. waste storage area	76	80	80	-	-	1.1
8	ETP area	30	50	50	-	-	0.7
9	Plant Building (Existing)	800	1050	350	350	350	4.9

10	Plant Building (Proposed)	500	750	250	250	250	3.5
11	Boiler & Utility Area	80	105	105	-	-	1.5
12	Chlorine Gas Cylinder Storage	40	50	50	-	-	0.7
13	Fuel Storage	10	15	15	-	-	0.2
15	Admin building, OHC & Lab	50	288	96	96	96	1.3
16	Road and Open Area	1,763.24	1,763.24	1,763.24	-	-	24.5
17	Green Belt (52%)	3743.69	3743.69	3743.69	-	-	52.1
Total		**7548.93**	**8574.93**	**7182.93**	**696**	**696**	**100**

***Remark: Plot area is adequate as per area adequacy for Existing and Proposed production.**

Comments:

SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.

12) **GREEN BELT CONDITIONS AND MEASURES ALONG WITH AREA:**

Total Plot area (Sq meter)	Total Green belt area (Sq meter)	% of Greenbelt
7182.93	**Inside:** 3743.69 **Outside:**0.0	52.11

Details of copy of permission letter of concern GIDC/ Panchayat/etc. for greenbelt development (in case of greenbelt development outside the premises*:* Not Applicable as 3743.69 sq. m (52.11 %) green belt will be developed within plant premises.

Comments:

- The PP shall develop green belt within premises (3743.69 Sq. m i.e. 52.11 % of the total plot area) as submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

13) **EMPLOYMENT GENERATION:**

Permanent	Contractual	Total

7	15	22	

-

14) **SOURCE OF WATER SUPPLY WITH QUANTITY AND PERMISSION (DETAILS OF CGWA IF BOREWELL**

a) **Source of water supply: CGWA Water Supply**

b) **Total Fresh water quantity (KLD): 24.21**

c) **Permission of concerned authority (Name and quantity (in KLD):**Permission for water supply has been obtained from (Central Ground Water Authority) CGWA NOC vide Letter No CGWA/NOC/IND/ORIG/2021/13202, dated: 13/9/2021 & valid up to: 12/9/2024.

Comments:

PP has obtained permission from CGWA Water Supplyfor procurement of water of 24.12 KLD which is found satisfactory.

15) **WATER CONSUMPTION RELATED DETAILS WITH COMMENTS**

Sr. No.	Particulars	Existing (KLD)	Additional Proposed (KLD)	Total After Expansion (KLD)
1.	A. Domestic	0.675	0.325	1.0
2.	B. Gardening	0.775	2.225	3.0
3.	C. Industrial			
4.	Boiler	0.5	1.0	1.5
5.	Cooling	0.5	1.5	2.0
6.	Process	-	2.02	2.02
7.	Washing	-	1.5	1.5
8.	Scrubbing Media (Others)	1.55	11.64	13.19
9.	Total (C)	2.55	17.66	20.21
10.	**Grand Total (A+B+C)**	**4.0**	**20.21**	**24.21**

Water Consumption for Worst Case Product: As per mass balance, only 1.17 KLD water will be used for manufacturing of Diethyl meta amino phenol(DMAP)& 0.85 KLD water will be used for manufacturing of Sulphuric acid 75 % considering worst case scenario. Hence, total 2.02 KLD water was proposed in process head.

Worst case scenario breakup comparison of water consumption & wastewater generation for manufacturing process (Existing & Proposed) is as below;

Product Name	Production Capacity (MT/Month)	Water Consumption (MT/MT)	Water Consumption (KLD)	Waste Water Generation (MT/MT)	Waste Water Generation (KLD)
Ethyl Chloride	150	**-**	**-**	2.79	13.95
Diethyl meta amino phenol(DMAP)	5	**7.00**	**1.17**	-	-

Sodium Benzoate	20	-	-	0.44	0.29
Sulphuric acid 75 %	96.5	**0.27**	**0.85**	-	-
Crysophenine G	10	-	-	17.20	5.73
Total	**281.5**	**7.27**	**2.02**	**20.43**	**19.98**

Comments:

PP has submitted the above water consumption which is calculated considering the worst case scenario and in no case the water requirement shall not exceed the same which is found satisfactory.

16) **WASTE WATER GENERATION AND DISPOSAL**

Sr. No.	Particulars	Existing (KLD)	Additional Proposed (KLD)	Total After Expansion (KLD)	Remarks
1.	A. Domestic	0.50	0.25	0.75	Sent to Primary ETP then treated water will be sent to CMEE.
2.	B. Industrial				
3.	Boiler	0.05	0.10	0.15	Sent to Primary ETP then treated water will be sent to CMEE.
4.	Cooling	0.05	0.15	0.20	
5.	Process	-	19.98	19.98	Sent to Primary ETP then treated water will be sent to CMEE. 0.089 KLD distilled water will be generated from process it will be reuse in process
6.	Washing	-	1.25	1.25	Sent to Primary ETP then treated water will be sent to CMEE.
7.	Scrubbing	0.05	3.72	3.77	
8.	Total (B)	0.15	25.2	25.35	
9.	Grand Total (A+B)	0.65	25.45	26.1	

Waste water From Worst Case Product: As per mass balance, 13.95 KLD wastewater will be generated from Ethyl Chloride & 0.29 KLD wastewater will be generated from Sodium Benzoate & 5.73 KLD wastewater will be generated from Crysophenine G scenario. Hence, 19.98 KLD wastewater was considered in process head.

Justification in case of increase/ drastic reduction in wastewater generation than water Consumption:

Worst case scenario breakup comparison of water consumption & waste water generation for manufacturing process (Existing & Proposed) is as below;

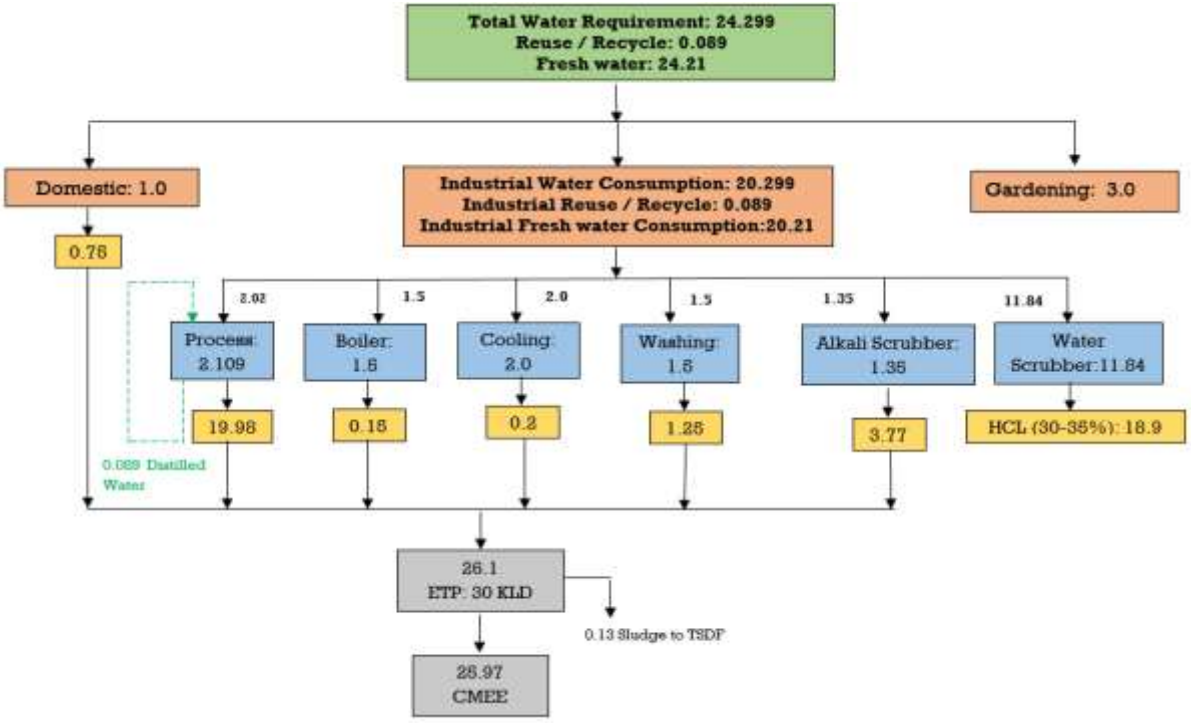
Product Name	Production Capacity (MT/Month)	Water Consumption (MT/MT)	Water Consumption (KLD)	Waste Water Generation (MT/MT)	Waste Water Generation (KLD)
Ethyl Chloride	150	-	-	2.79	13.95
Diethyl meta–amino phenol(DMAP)	5	7.00	1.17	-	-
Sodium Benzoate	20	-	-	0.44	0.29
Sulphuric acid 75 %	96.5	0.27	0.85	-	-
Crysophenine G	10	-	-	17.20	5.73
Total	281.5	7.27	2.02	3.23	19.98

Comments:

PP has submitted the above wastewater generation which is calculated considering the worst case scenario and in no case the wastewater generation shall not exceed the same which is found satisfactory.

17) **SIMPLIFIED WATER BALANCE DIAGRAM**

Note:



Water Consumption considering Worst Case Product: As per mass balance, only 1.17 KLD water will be used for manufacturing of Diethyl meta amino phenol (DMAP) & 0.85 KLD water will be used for manufacturing of Sulphuric acid 75 % considering worst case scenario. Hence, total 2.02 KLD water was proposed in process head.

Waste water considering Worst Case Product: As per mass balance, 13.95 KLD wastewater will be generated from Ethyl Chloride & 0.29 KLD wastewater will be generated from Sodium Benzoate & 5.73 KLD wastewater will be generated from Crysophenine G scenario. Hence, 19.98 KLD wastewater was considered in process head.

Note:

Capacity of ETP: 30.0 KLD. Wastewater Going to ETP will be 26.1 KLD.

Reuse: 0.089 KLD will be reused in process itself.

Total Reuse: 0.089 KLD
% Of Reuse: 0.36 % of Total Water Requirement

18) **BREAKUP OF WASTE WATER DISPOSAL (DOMESTIC & INDUSTRIAL BOTH)**

Sr. no.	Quantity KLD	Facility
1	26.1	Waste water from Process @ 19.98 KLD, Boiler @ 0.15 KLD, Cooling @ 0.20 KLD, Washing @ 1.25 KLD, Scrubbing @ 3.77 KLD & Domestic @ 0.75 KLD will be send to Primary ETP. ETP Sludge @ 0.13 TPD will be subjected to nearest TSDF Site. Treated water will be send to CMEE For further Treatment & final disposal.
Total	**26.1**	

Comments for Domestic Effluent:

Domestic wastewater generation shall not exceed 0.75 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.

Comments for Industrial Effluent:

1. Management of Industrial effluent shall be as under:
   - 26.1 KLD effluent generated from process (19.98 KLD), bolier(0.15 KLD), cooling (0.2 KLD), washing (1.25 KLD), Scrubbing media (3.77 KLD) along with domestic wastewater (0.75 KLD) shall be treated into primary ETP and treated wastewater shall be send to Common MEE (BEIL Infrastructure Limited) for

further treatment and disposal.

19) **MECHANISM AND METHODOLOGY OF STREAM SEGREGATION**

Waste water from Process @ 19.98 KLD, Cooling @ 0.20 KLD, Washing @ 1.25 KLD, Scrubbing @3.77 KLD & Domestic @ 0.75 KLD will be send to Primary ETP. ETP Sludge @ 0.13 TPD will be subjected to nearest TSDF Site. Treated water will be send to CMEE For further Treatment & final disposal.

20) **STP AND/OR ETP SPECIFICATION AND DESIGN AND ITS CAPACITY**

- ***ETP* Capacity & its specification:**
  - **ETP Capacity: 30 KLD.**

- **Design detail of Proposed ETP**

Sr. No.	Name of unit	Size (m x m x m)	No.	Retention Time	MOC/ Remark
Stream: 26.1 KLD (ETP CAPACITY- 30 KLD)					
1	Collection cum Neutralization Tank	3.5 x 3.5 x (3.5+0.5 FB)	1	24 Hr.	RCC M25
2	Dosing Tank	500 lit	3	--	HDPE
3	Primary Settling Tank	2.0 x 2.0 x (1.5 + 0.5 FB)	1	4 Hr.	MSFRP
4	Filter Press	100 lit/hr., 8 plates	1	-	PP+MS
7	Treated Water Tank	3.5 x 3.5 x (3.5+0.5 FB)	1	24 Hr.	MSFRP
8	Sludge Drying Bed	1 x 1 x 1	1	--	--

21) **TREATABILITY OF WATER**

Stream 1: Waste water from Process @ 19.98 KLD, Cooling @ 0.20 KLD, Washing @ 1.25 KLD, Scrubbing @ 3.77 KLD & Domestic @ 0.75 KLD will be send to Primary ETP. ETP Sludge @ 0.13 TPD will be subjected to nearest TSDF Site. Treated water will be send to CMEE For further Treatment & final disposal.

SR. NO.	PARAMETER	ETP INLET	ETP OUTLET
		(mg/l, except pH)	
	Flow	**26.1**	**25.97**
1.	pH	6.5-7.5	7.0 – 8.0
2.	Total Suspended Solids	208	62
3.	Total Dissolved Solids	14249	14723
4.	Chemical Oxygen Demand	12500	8750
5.	BOD_3 @ 27 °C	4096	2867

22) **SUMMARY OF WATER USE AND REQUIREMENT OF FRESH/REUSED WATER**

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project **(A)**	24.299	Source: CGWA Water Supply.
Quantity to be **recycled (B)**	0.089	Reuse of process generated D.M. Water (0.089 KLD) into process.
Total **fresh water** requirement **(C)**	24.21	CGWA Water Supply.

Ensure **Total water requirement = Recycled water + Fresh water**
i.e. A = B + C

23) **REUSE, REDUCE, RECYCLE RECOVERY MEASURES ADOPTED**

a) Reduce

Sr. No.	Item	Quantity	% percentage
-	-	-	-

b) Reuse

Sr. No.	Item	Quantity	% percentage
1	Distilled Water will be generated from process and it will be reused in process	0.089 KLD	0.37%

c) Recycle

Sr. No.	Item	Quantity	% percentage
-	-	-	-

-

24) **FLUE GAS EMISSION**

Existing

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
1	Steam Boiler (1 TPH) (Existing)	30 m	Bio coal	400 kg/day	SPM<150 mg/Nm^3 SO_2 < 100 ppm NOx < 50 ppm	Multi Cyclone Separator, Bag Filter

Total proposed

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
1	Steam Boiler (1 TPH) (Existing)	30 m	Bio coal	800 kg/day	SPM<150 mg/Nm^3 SO_2 < 100 ppm NOx< 50 ppm	Multi Cyclone Separator, Bag Filter
2	Thermopack (1000 U) (Proposed)	30 m	Bio coal	1 MT/Day		Multi Cyclone Separator, Bag Filter
3	D.G. Set (150 KVA) (Proposed)	25 m	Diesel	20 Lit/Hr.		--

Fuel (Bio coal) Calculation for Boiler – Steam Quantity (Kg/Hr) * latent Heat (Kcal/kg)/Efficiency * Calorific value (kCal/Kg)
= 1000 * 540/ 0.75 * 3800
= 189.47 kg/hr
= 757.89 kg ~ 800 kg considering 4 working hours of Boiler

Capacity of Thermopack: 1000 U (10 Lacs Kcal)
Fuel (Bio coal) calculation for Thermopack - Heat Output (Kcal/Hr)/ Efficiency * Calorific value (kCal/Kg)
= 1000000/ 0.75 * 3800
= 350.87 kg/hr = 0.35 MT/hr
= 1.05 MT/Day ~ 1.0 MT/Day considering 3 working hours of Thermopack

Comments:

- The proposed fuel to be used is approved fuel for the requirement of the heat energy and proposed the Air pollution Control measures and stack height so as to achieve the emission norms prescribed by the competent authorities are found satisfactory.

25) **PROCESS GAS EMISSION**

Existing

Sr No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
1	**Reactor Vessels-4 Nos.** (Existing)	Cl_2 < 09 mg/NM^3 SO_2 < 40 mg/NM^3 HCl < 20 mg/NM^3	30 m	Two stage Water Scrubber & Alkali Scrubber (For each)
2	**Distillation Vessels-1 Nos.** (Existing)	----	25 m	Caustic Scrubber after Water Scrubber (For each)

Total proposed

Sr. No.	Specific Sourceof emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures(APCM)
1	**Reactor Vessels-12 Nos.** (4 Nos. Existing) (8 Nos. Proposed)	Cl_2 < 09 mg/NM^3 SO_2 < 40 mg/NM^3 HCl < 20 mg/NM^3	30 m	Two stage Water Scrubber & Alkali Scrubber (For each)
2	**Distillation Vessels-2 Nos.** (1 Nos. Existing) (1 Nos. Proposed)	----	25 m	Caustic Scrubber after Water Scrubber (For each)

Comments:

- The proposed Air pollution Control measures and stack height so as to achieve the emission norms prescribed by the competent authorities are found satisfactory.

26) **FUGITIVE GAS EMISSION**

Sr. No.	Specific Source of emission	Probable Pollutant Emission	Control measures / Air Pollution Control Measures (APCM)
1	Flange joints of pipeline, pump & motors	VOC	• Leak detection system will be provided. • Regular maintenance of valves, pumps, flanges, joints and other equipment shall be done to prevent leakages and thus minimizing the fugitive emissions of VOCs. • Minimum number of flanges, joints and valves in pipelines. • Self-breathing valve will be provided with storage tank.
2	Solvent storage tank		
3	Solvent recovery system		
4	Handling of raw material bags in storage area	PM	• Adequate ventilation shall be provided. • Safety hand gloves and PPE kits will be provided for the handling of the raw material.
5	Solid raw material transferring to reactor	PM	• Hopper will be provided with powder transfer system. • It will be done in close loop system.
6	Liquid raw material transferring to reactor	VOC, Acid fumes	• Liquid raw material will be transfer through pipeline, so closed pipe and mechanical seal pumps will be provided.
7	Loading /unloading at storage area	PM, VOC	• Raw materials loading and unloading shall be done in covered area. • Adequate ventilation shall be provided.

- Airborne dust at all transfers operations/points shall be controlled either by spraying water or providing enclosures.
- Raw materials loading and unloading shall be done in covered area.
- Care shall be taken to store construction material properly to prevent fugitive; emissions, if any.
- Regular maintenance of valves, pumps, flanges, joints and other equipment shall be done to prevent leakages and thus minimizing the fugitive emissions of VOCs.
- Entire process shall be carried out in the closed reactors with proper maintenance of pressure and temperature.
- Periodic monitoring of work area shall be carried out to check the fugitive emission.
- To eliminate chances of leakages from glands of pumps, mechanical seal shall be provided at all solvent pumps.
- Close feeding system shall be provided for centrifuges. Centrifuge and filtrate tank vents shall be connected to vent chillers.
- Minimum number of flanges, joints and valves in pipelines.
- Enclosures to chemical storage area, collection of emission from loading of raw materials in

particular solvents through hoods and ducts by induced draft, and control by scrubber/dust collector to be ensured.

Adequate ventilation shall be provided.

Comments:

The air pollution control measures proposed for fugitive gas emission are found satisfactory.

27) **HAZARDOUS PROCESSES AND ITS SAFETY MEASURES**

Types of process	Safety measures including Automation
Chlorination	✓ Chlorine Emergency Kit will be procured and kept ready at process site. ✓ Chlorine Hood with blower will be provided with scrubbing arrangement. ✓ SCBA sets will be kept ready at site. ✓ Safety Shower and eye wash will be provided in process area. ✓ Chlorine absorption system will be provided. In case of chlorine leakage in chlorine shed it will be suck through blower and it will be scrubbed in Caustic scrubber. ✓ Emergency siren and wind sock will be provided. ✓ Tele Communication system and mobile phone will be used in case of emergency situations for communication. ✓ First Aid Boxes and Occupational health centre will be made at site. ✓ Emergency organization and team will be prepared as per On site-Off site emergency planning. ✓ Full body protection suite and other PPEs will be kept ready at site. ✓ Emergency team will be prepared and trained for scenario base emergency. Like Toxic control team, Fire control team, First aid team, Communication and general administration team, Medical team etc.
Sulphonation	✓ Provisions of safety valve & rupture disk on reactor. ✓ Provisions of auto dumping Vessel. ✓ Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory mask etc. will be provided to operator. ✓ To avoid runaway reaction, oleum charging will be done gradually & slowly. ✓ Charging will be done only through closed line and system. Scrubber attached with closed system. ✓ Make sure the absorber unit (two stage Alkali scrubber) is working and capable of handling vented SO2 fumes. ✓ Neutralizing agent will be kept ready for tackle any emergency spillage. ✓ Safety Shower and eye wash will be provided near process area. ✓ Evacuate area in down wind direction up to 0.3 km (300 meter) in small leakage.

		✓ Emergency siren and wind sock will be provided. ✓ Tele Communication system and mobile phone will be used in case of emergency situations for communication. ✓ Total close process will be adopted for charging. ✓ Caution note and emergency first aid will be displayed and train for the same to all employees. ✓ First Aid Boxes will be available in process area. ✓ Emergency organization and team will be prepared as per On site-Off site emergency planning. ✓ Emergency team will be prepared and trained for scenario base emergency. Like Toxic control team, Fire control team, First aid team, communication and general administration team, Medical team etc. ✓ Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. ✓ Use water spray to reduce vapors; do not put water directly on leak, spill area or inside container. Keep combustibles (wood, paper, oil, etc.) away from gas storage area.
	Exothermic Reaction	✓ Exothermic reaction will be controlled by adequate dosing of reaction chemicals in a fixed time (not short duration) having adequate cooling water circulation in jacket of reaction vessels. Thus, any energy generated due to exothermic reaction will be controlled by external cooling circulation and therefore vessels will not be pressurized. ✓ PLC based Temperature & Cooling control system
	Distillation	✓ Close loop system will be provided for the coupling system. ✓ Condensation process will be applied for the distillation process. ✓ VOC detectors will be provided for the safety. ✓ PLC based temperature & cooling control system.

28) **SOLVENT MANAGEMENT**

Product No.	Product Name	Solvent	Qty. Used MT/Month	Qty. Recovered MT/Month	solvent Losses in air	solvent Loss in (Effluent - stripped out) (B)	Distillation Residue(C)	Total Losses(A+B+C)	Solvent Recovery %
					Sub Total (A)				
B9	2,4 Di Chloro Phenol	Para Chloro Phenol	359.30	341.335	1.797	3.593	12.576	17.965	95.0

B10	2,6 Di Chloro Phenol	Ortho Chloro Phenol	359.30	341.335	1.797	3.593	12.576	17.965	95.0
B12	Benzyl Chloride Benzaldehyde Sodium Benzoate Benzyl Benzoate	Toluene	18.750	17.813	0.094	0.188	0.656	0.938	95.0
B13	Ortho Chloro phenol Para Chloro phenol	Phenol	644.10	611.895	3.221	6.441	22.544	32.205	95.0

29) **VOC EMISSION AND MITIGATION MEASURES FOR ACHIEVING MAXIMUM SOLVENT RECOVERY AND MINIMUM VOC GENERATION**

Sr. No.	Specific Source of emission	Probable pollutant emission	Control Measures
1	Flange joints of pipeline, pump & motors	VOC	• Leak detection system will be provided. • Regular maintenance of valves, pumps, flanges, joints and other equipment shall be done to prevent leakages and thus minimizing the fugitive emissions of VOCs. • Minimum number of flanges, joints and valves in pipelines. Self-breathing valve will be provided with storage tank. • Vacuum distillation system will be provided. • Closed handling system will be provided. There will be recovery of more than 95% to 98%.
2	Solvent storage tank		
3	Solvent recovery system		
4	Solvent & Liquid raw material transferring to reactor	VOC	• Liquid raw material will be transfer through pipeline, so closed pipe and mechanical seal pumps will be provided.
5	Loading /unloading of Solvent & Liquid material at storage area	VOC	• Raw materials loading and unloading shall be done in covered area. • Adequate ventilation shall be provided.

Comments for Sr No: 27,28 and 29:

- Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

30) **LDAR PROPOSED**

Sr. No.	Monitoring Components	Monitoring Frequency	Repair Schedule	Preventive Measures
1.	Pump seal	Monthly	Repair will be started within 5 working days and shall be completed within 15 working days after detection of leak for general organic chemicals. In case of highly flammable materials, the leak shall be attended immediately for repair.	Double mechanical / magnetic seals pumps will be used
2.	Valves and flanges	Quarterly		Diaphragm types valve / Magnetically actuated, Seal-welded valve will be used.
3.	Compressor seal	Quarterly		Entirely enclosed type Compressors will be used.
4.	Open-ended lines	Quarterly		open-ended line is equipped with a cap, blind flange, plug, or a second valve
5.	Pressure relief devices	Yearly		--
6.	Process Drain and difficult other component which are difficult to monitor	Yearly		--
7.	Visual inspections for pumps	Weekly	Immediately	--
8.	Any component with visible leaks	Weekly	Immediately	--
9.	Any component after repair / replacement	Weekly	Immediately	--

The Following methodology to be adopted during LDAR study:

- Identify the Chemical streams that must be monitored.

- Types of components (pumps, valves, connectors, etc.) to be monitored
- Frequency of monitoring.
- Actions to be taken if a leak is detected.
- Length of time in which an attempt to repair the leak must be performed.
- Actions that must be taken if a leak cannot be repaired within guidelines.
- Record-keeping and reporting requirements.

In addition to LDAR program, following safety measures will be taken to prevent VOC emission in atmosphere;

- In warding, storage and consumption of solvents in various products shall be measured through Level Transmitters and Load cells weighing systems resp. The quantity at each stage shall be reconciled periodically to arrive at Losses.
- Periodic monitoring of work area will be carried out to check the fugitive emission.
- VOC detectors will be installed at various places to detect leak.

31) **LDAR FOR SPECIFIC SOLVENT**

Sr. No.	Solvent Name	Type of Storage	Mode of Transfer	Charging	Sources of Leakage	Mitigation Measure For find out leakages	Mitigation Measure (If leakages shall be occur)	Action taken for prevention of leakages
1	Ethanol	HDPE drum	By Pump & Fix Pipe line	Direct Vessel	Leakage from Drum/ Valve / pump / tank / Connectors / open ended lines.	• Provision of VOC detectors at key locations. By using gas detector by PID Sensor Technology.	• As per LDAR Proposed. • If valve shall be leaking stop pumping system and replace with new valve. When pump seal shall be leak immediately stop solvent transfer and immediately repair or replace with new seal.	• Fix pipeline will be used for solvent transfer. Minimum use of Joints, Flages, Connectors

32) **HAZARDOUS WASTE MANAGEMENT MATRIX**

Sr. no.	Waste	Source	Existing Quantity	Proposed Quantity	Total Quantity	Schedule Process No.	Method Of Storage & Disposal
1.	Waste Salt from Evaporation *	Evaporator	60 Kg/ Month	-60 Kg/ Month	NIL	37.3/ SCH.I	Collection, Storage, Transportation and disposal at TSDF site BEIL, Ankleshwar through GPS mounted vehicle.
2.	Used Oil	Boiler, D.G. Set & Maintenance	2 Litre/ Month	8 Litre/ Month	10 Litre/ Month	5.1/ SCH.I	Collection, Storage, Transportation and disposal by Reuse in plant & Machinery as lubricant or selling to Authorized re-refiners.
3.	Discarded Container / Bags or Liners	Raw material	1.75 MT/ Month	1.75 MT/ Month	3.50 MT/ Month	33.1/ SCH.I	Collection, Storage, Transportation & Sale to Authorized Vendor/Recyclers, through GPS Mounted Vehicles.
4.	ETP Sludge	ETP	--	4 MT/ month	4 MT/ month	35.3/ SCH.I	Collection, storage, transportation and disposal at TSDF site through GPS Mounted Vehicles.
5.	Spent Sulphuric acid	Manufacturing of Product no. A1	26 MT/ Month	-26 MT/ Month	NIL	D2 SCH-II	Collection, storage, Transportation use for own captive use or Sell to End Users having permission under Rule-9 through GPS Mounted Vehicles.
6.	Spent Hydrochloric Acid (30 - 35 % HCL)	Water scrubber of Product no. A1	60 MT/ Month	468.5 MT/ Month	528.5 MT/ Month		Collection, storage, Transportation use for own captive useinto manufacturing process of Ethyl chlorideor Sell to End Users having permission under Rule-9 through GPS Mounted Vehicles.

	7.	Sodium Hypo chloride or scrubbing Media	Alkali scrubber of Product no. A1, A2, B5, B6 B7, B11, B12,	--	105.56 MT/ Month	105.56 MT/ Month	28.1/ SCH.I	Collection, Storage, sent to ETP for further treatment **or**Sell to End Users having permission under Rule-9 through GPS Mounted Vehicles.
	8.	Sodium Bicarbonate	Scrubber Product no. B15	--	7.56 MT/ Month	7.56 MT/ Month	28.1/ SCH.I	Collection, Storage, Transportation sent to ETP for further treatment **or**Sell to End Users having permission under Rule-9 through GPS Mounted Vehicles.
	9.	Sodium Sulphite	Scrubber Product no. B6	--	29.96 MT/ Month	29.96 MT/ Month	28.1/ SCH.I	Collection, Storage, Transportation sent to ETP for further treatment **or**Sell to End Users having permission under Rule-9 through GPS Mounted Vehicles.
	10.	Distillation Residue	Manufacturing process of Product No. A1	--	8.96 MT/ Month	8.96 MT/ Month	28.1/ SCH.I	Collection, storage, transportation and disposal at co-process **or** incineration at CHWIF site through GPS Mounted Vehicles.
	11.	Process Residue	Manufacturing process of Product no. B3 & D2	--	31.78 MT/ Month	31.78 MT/ Month	20.3/ SCH.I	Collection, Storage, Transportation & send to pre/co-processing units (Cement industries) OR disposal at nearest CHWIF site through GPS Mounted Vehicles.
	12.	Spent carbon	Manufacturing process of Product no. C7	--	0.0084 MT/ Month	0.0084 MT/ Month	28.3/ SCH.I	Collection, Storage, Transportation & send to pre/co-processing units (Cement industries) OR disposal at nearest CHWIF site through GPS Mounted Vehicles.

13.	Off-specific Products	Manufacturing Process	---	20 MT/Year	20 MT/Year	28.4/ SCH.I	Collection, Storage, maximum quantity will be recovered and balance quantity will be disposed for co-processing **or** incineration at CHWIF site through GPS Mounted Vehicles.
14.	Silica gel	Silica gel filter	--	1 MT/ Month	1 MT/ Month	--	Collection, storage, transportation and disposal at co-process **or** incineration at CHWIF site through GPS Mounted Vehicles.

Comments:

- Hazardous waste management includes collection, storage, transportation and disposal at TSDF, captive/ common incineration, co-processing/ pre-processing, send to authorized actual users having Rule-9 permission and recycle/ reuse of waste. SEAC examined the details provided and found it as per requirement.

33) **NON-HAZARDOUS WASTE MANAGEMENT MATRIX**

Sr. no.	Type/Name of non-hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Quantity (MT/Annum)	Management of HW
Not applicable. No any non-hazardous waste generation from the unit.				

Comments:

- As per the submission of details there is no any non-hazardous waste generation from the unit.

34) **STORAGE SAFETY MEASURES**

a) Storage of Hazardous chemicals in Tanks

Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
TANK FARM (PESO)				

1	Special Denatured spirit	50 KL	1	Highly Flammable Chemical
2	Ethanol	15 KL	1	Highly Flammable Chemical

Storage of Hazardous chemicals in Tanks (Special Denature Sprit)

A. Tank shall be constructed as per explosive department requirement and separation distance shall be maintained.
B. Provided with external anti-corrosive coating or catholic protection to prevent corrosion;
C. Dyke wall shall be provided to storage tank, collection pit with valve provision.
D. Road tanker unloading procedure shall be prepared and implemented.
E. Static earthing provision shall be made for road tanker as well as storage tank.
F. Spark arrestor shall be provided to all vehicles in side premises
G. Flame arrestor with breather valve shall be provided on vent line.
H. Lightening arrestor shall be provided on the top.
I. Fire load calculation shall be done and as per fire load hydrant system shall be provided as per NFPA std. and fire extinguishers shall be provided as per fire load calculation.
J. Flame proof type equipment and lighting shall be provided.
K. Trained and experience operator shall be employed for tank.
L. NFPA label (hazard identification) capacity and content shall be displayed on tanks
M. Jumpers shall be provided on solvent handling pipe line flanges & Flexible SS hose shall be used for road tanker unloading purpose and other temp. Connection.
N. Solvents shall be transferred by pump only in plant area and day tank shall be provided. Overflow line shall be return to the storage tank or Pump On-Off switch shall be provided near day tank in plant.

b) Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

Sr. No.	Name of Chemical	Capacity of Drum/Bag/ Cylinder/ Glass Bottle	Number of Drum/Bag/ Cylinder/ Glass Bottle	Hazardous Characteristics of Chemical
Drum & Carboys (Flammable)				
1	LNP/HNP/NP and wax (Paraffin)	50 kg (Bags)	160	Highly Flammable Chemicals
2	Ortho Chloro Phenol	200 Litres (Drum)	281	Highly Flammable Chemicals
3	Propionyl Chloride		8	Highly Flammable Chemicals
4	Toluene		54	Highly Flammable Chemicals
5	Benzene		121	Highly Flammable

				Chemicals
6	Methanol		8	Highly Flammable Chemicals
7	Ethylene dichloride		5	Highly Flammable Chemicals
8	Hexane		1	Highly Flammable Chemicals
9	Ethyl Acetate		7	Highly Flammable Chemicals
10	Iso Propyl Alcohol		8	Highly Flammable Chemicals
Drum & Carboys (Toxic)				
11	Acetic Acid	200 Litres (Drum)	86	Highly Toxic Chemicals
12	Phenol	230 Kg (Bags)	426	Highly Toxic Chemicals
13	Sulphuric Acid	200 Litres (Drum)	13	Highly Toxic Chemicals
14	Sulphur monochloride		13	Highly Toxic Chemicals
15	Mono Chloro Acetic acid		21	Highly Toxic Chemicals
16	Thionyl Chloride		50	Highly Toxic Chemicals
17	Hydrochloric Acid		83	Highly Toxic Chemicals
18	Acetic Anhydrate		3	Highly Toxic Chemicals
19	Phthalic Anhydride	50 Kg (Bags)	10	Highly Toxic Chemicals
20	Potassium Hydroxide		20	Highly Toxic Chemicals
21	Sodium Hydroxide (Caustic Lye)		52	Highly Toxic Chemicals
22	Aluminium Chloride		6	Highly Toxic Chemicals
Cylinder/Tonner (Peso) (Toxic)				
23	Chlorine Gas	900 Kg	10	Highly Toxic Chemicals
24	Hydrochloric Acid	37 Kg	32	Highly Toxic Chemicals
25	Dimethyl Amine	10 Kg	222	Highly Flammable Chemicals
26	Oxygen	46.7 Kg	15	Highly Toxic Chemicals
27	Ethyl Chloride	200 Kg	5	Highly Flammable Chemicals

- ✓ Store room consists of impervious walls and floors and provision for safe disposal of spillage.
- ✓ When dangerous substances are to be handled or stored like highly flammable & toxic materials, HSD, the workers concerned should be given adequate information concerning their nature and the special precautions to be observed in handling them.
- ✓ Workers handling harmful substances should thoroughly wash their hands and face with soap and water before taking any food or drink.
- ✓ Proper and sufficient firefighting arrangement should be provided in and around the storage.
- ✓ Open storage should be protected from direct sun-rays, excessive heat, and continuous

dampness and away from highly flammable substances and hot processes.

- ✓ Drums should be always labeled and a strong policy exists with respect to handling, storage and use of flammable materials.

The quantity of stored chemicals in a chemical plant at any time should be minimum required quantity for normal working.

Safety measures for Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE CHEMICALS	✓ Storage will be cool, well-ventilated away from sources of ignition or heat. Prevent accumulation of static charge. Protect material from direct sunlight. ✓ Store in original container. Keep containers tightly closed and upright when not in use. ✓ Proper label and identification board /stickers will be provided in the storage area. ✓ Conductive drum pallets will be provided. ✓ Drum handling trolley / stackers/fork lift will be used for drum handling. Separate dispensing room with local exhaust and static earthing provision will be made. ✓ Ground container and transfer equipment to eliminate static electric sparks. ✓ Smoking and other spark, flame generating item will be banned near storage area. FLP type light fittings will be provided. ✓ Handling of materials from Drum will be done only through Mechanical Transfer System only. ✓ Training will be provided to employees for safe storage, handling and transpiration. ✓ When using, do not eat, smoke or drink. ✓ Fire Hydrant with monitor, fire proximity suits, automatic sprinkler system, Safety shower & eye wash unit will be installed nearby area. ✓ Provision of Respiratory protective equipment (airline respirator & SCBA) & personal protective equipment will be available. ✓ For spills involving small volumes of dilute solution of Xylene/Formaldehyde/Methanol, the following cleaning procedure can be used ✓ Wear appropriate personal protective equipment (PPE) ✓ Remove any ignition source from the spill area; ✓ Clean the spill area with a mixture of water and soap ✓ Dry the spill area with paper towels ✓ Onsite emergency plan prepared and mock drill will be carried out. Safety sign board displaying Do's and Don'ts in local language.
CORROSIVE CHEMICALS	✓ Preventing or minimizing contact between corrosive substances and skin, mucous membranes and eyes. ✓ Corrosive substances will not be allowed to come in contact with materials that may react. ✓ All the containers, pipes, apparatus, installations and structures used for the manufacture, storage, transport or use of these substances will be protected by suitable coatings, impervious to and unaffected by corrosives. ✓ All containers or receptacles will be clearly labelled to indicate their contents and will bear the danger symbol for corrosives. ✓ Adequate ventilation and exhaust arrangement whether general or local, will be provided whenever corrosive toxic gases or dust are present. ✓ Personal protective devices will be used. ✓ First aid treatment facilities will be provided and all concerned will be instructed to follow safe practices such as (a) Prolonged washing with water (b) Removing contaminated clothing (c) Seeking immediate medical

	help. Safety showers and eye washers will be provided.
TOXIC CHEMICALS	✓ Storage will be cool, well-ventilated away from sources of ignition or heat. Prevent accumulation of static charge. Protect material from direct sunlight. ✓ Store in original container. Keep containers tightly closed and upright when not in use. ✓ Proper label and identification board /stickers will be provided in the storage area. ✓ Conductive drum pallets will be provided. ✓ Drum handling trolley / stackers/fork lift will be used for drum handling. Separate dispensing room with local exhaust. ✓ Ground container and transfer equipment to eliminate static electric sparks. ✓ Handling of materials from Drum will be done only through Mechanical Transfer System only. Unloading procedure will be prepared and implemented. ✓ Training will be provided to employees for safe storage, handling and transpiration. ✓ Safety shower & eye wash unit will be installed nearby area. ✓ Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory protective equipment (airline respirator & SCBA) etc. will be provided to operator ✓ For spills involving small volumes, the following cleaning procedure can be used ✓ wear appropriate personal protective equipment (PPE) ✓ clean the spill area with a mixture of water and soap ✓ Neutralizing agent will be kept ready for tackle any emergency spillage ✓ Onsite emergency plan prepared and mock drill will be carried out. Safety sign board displaying Do's and Don'ts in local language.
REACTIVE CHEMICALS	✓ Store minimum quantities. ✓ Segregate chemicals, e.g. from water, air, incompatible chemicals, sources of heat, ignition sources. ✓ Spillage control; bund, spray, blanket, containment. Drain to collection pit. ✓ Decontamination and first-aid provisions, e.g. neutralize/destroy, fire-fighting • Contain/vent pressure generated to a safe area. ✓ Split-up stocks into manageable lots, e.g. with reference to fire loading/spillage control. ✓ Ensure appropriate levels of security, hazard warning notices, fences, patrols. Control access including vehicles. ✓ Appropriate gas/vapour/fume/pressure venting, e.g. flame arrestors, scrubbers, absorbers, stacks. ✓ Will ensure adequate natural or forced general ventilation of the storage area Provide adequate, safe lighting. ✓ Label (name and number); identify loading/unloading/transfer couplings. ✓ Provide appropriate fire protection (sprinkler, dry powder, gas). Will ensure adequate access for both normal and emergency purposes with alternative routes
Others, if any	--

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35) **FIRE LOAD CALCULATION**

Total Plot Area:	**7182.93 m^2**
Area utilized for plant activity:	**600.0m^2**
Area utilized for Hazardous Chemicals Storage:	174 **m^2**
Number of Floors:	G + 2
Water requirement for firefighting in KLD:	50
Water storage tank provided for firefighting in KL:	100

	Details of Hydrant Pumps:	**Fire Hydrant Pump Details**

Type of Pump	Quantity	Capacity	Head	RPM
Main Electrical Pump	1	4550 Lit/Min	88 Mt	2920
Jockey Pump	1	1080 Lit/Min	88 Mt	1800
Diesel Pump	1	4550 Lit/Min	88 Mt	2920

Nearest Fire Station:	Fire station vyara @2.42 KM
Applicability of Off-Site Emergency Plan:	Yes. We have submitted on site & Off-Site Emergency Plan in EIA Report.

Comments:

The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 100 KL. SEAC found it as per the requirement.

36) **WORKERS SAFETY AND OCCUPATIONAL HEALTH MANAGEMENT**

Number of permanent Employee:	7
Number of Contractual person/Labour:	15
Area provided for OHC:	96 Sq. m.
Number of First Aid Boxes:	9.0
Nearest General Hospital:	Vyara General Hospital
Name of Antidotes to be store in plant:	Sodium Hydro-Carbonate (4% Conc.), Milk, Lime Juice, Milk of Megnesia, 10 mg diazepam injection, Airline respirator, butter milk, Pontocane (0.5% solution) or Benoxinate (Novesine) 0.4 %, magnesium sulphate.

a) Planned and fund allocation to ensure the occupational health & safety of all employed workers

b) Monitoring of notified diseases as mentioned in Schedule 3 of The Factories Act 1948

c) Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, color vision and any other ocular defect) ECG during pre-placement and periodical examinations give the details of the same. Details regarding last month analyzed data of above-mentioned parameters as per age, sex, duration of exposure and department wise.

d) Pre medical & periodic medical reports shall be maintained in records & shall be made available as an when certified surgeon or any other Inspector demands.

e) Annual safety & health reports shall be submitted to Director Industrial Safety & Health.

Comments:

Project proponent has provided PPEs, Occupational health center (OHC) with adequate provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

37) **DETAILS OF MEMBERSHIP OF COMMON FACILITIES:**

Sr. No.	Membership for Common Facility	Membership Certificate issuing agency along with Date of Issue and validity of membership
01	CETP	**NA**
02	TSDF site	**Name of TSDF:** Bharuch Enviro Infrastructure Limited **Date of Issue of membership along with validity:** **issue date:** 4/12/2021 **Allotted Capacity (MT) to member unit:** 48 MT/Year
03	Common Hazardous Waste Incineration Facility	**Name of TSDF:** Bharuch Enviro Infrastructure Limited **Date of Issue of membership along with validity:** **issue date:** 21/12/2021 **Allotted Capacity (MT) to member unit:** 502.98 MT/Year
04	Common Spray Drying Facility	**Not Applicable**
05	Common MEE Facility	**Name of CMEE:** BEIL Infrastructure Limited **Date of Issue of membership along with validity:** **Issue date :1st June 2020** **Capacity of CMEE(KLD):** 73000 KL/Year **Allotted Capacity (KLD) to member unit:** 22.42 KLD **Spare Capacity (KLD) of CMEE:** 36476 KLD
06	Common Conveyance System	**Not Applicable**
07	PESO permission	Received, vide file no G/WC/GJ/06/768 (G13816) dated 26th October, 2012.
08	FIRE permission	**Not Applicable** as per notification of Urban Development and Urban Housing Department Sachivalaya, Gandhinagar under Gujarat fire prevention and Life Safety Measures Act, 2013 issued dated: 8th July, 2021 and as per notification of Gujarat, Labour, Skill Development and Employment Department Resolution No.: FAC/142020/456894/M.3, dated: 9/2/2022. **Factory license** under Gujarat Factories Rules, 1963 vide **License No. 10787**, **dated: 1/5/1986**, has been already obtained for the project.
09	Health Certificate	Regular medical checkup of employees is being and will be carried out.

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38)	**EMERGENCY MEASURES PROPOSED AND PREPAREDNESS ACTION PLAN** The Emergency Management Plan (EMP) is a master plan which contains the emergency organization structure, responsibilities of key members, communications mean and emergency response strategies to control a range of major incidents. **EmergencyPlan Objectives:** Specific objectives of the Emergency Response Plan are listed with regards to theresponses desired for successful management of the possible emergency situations.SuggestedObjectives would include: • Todefineandassessemergencies • Tocontrolandcontainincidents. • To safeguard the employees. • To minimize damage to the property and/or the environment. • To inform the employees, the general public residing around the plant and the authority on the hazards/risks assessed. • To safeguard provided residual risk, if any, and the role to be played by the employees in the event of emergency. • To inform the state authorities like Police and Fire Departments, Mutual Aid Centers, Medical Centers to come up for help. • To effectively rescue and to provide treatment of casualties and to count the injured. • To identify and list fatal accidents, if any. • To secure the safe rehabilitation of affected areas and to restore normally. • To provide authoritative information to the news media for the incident. • To preserve records, equipments, etc. and to organize investigation into the cause of the emergency and to suggest preventive measures to stop its recurrence. • To ensure safety of staff and patients and resume work. • To work out a plan with all provisions to handle emergencies and to provide for emergency. **On-SiteEmergencyPlan** The On-site emergency plan: deals with, measures to prevent and control emergencies within the factory and not affecting outside public or Environment. **ClassificationofEmergency** TheClassification of Emergencyisgivenintable:

Classification	Description	Type of Emergency
Category – 1	Emergency of very minor type which may produce impact within the section only can be controlled by the On-duty personnel within minimum possible time & no outside help will be needed.	• Minor gas fire • Fire / Explosion • Leakage from acid tanks • Toxic gas release • Structure collapse • Fire in office combustible material, paint etc. • Fire in electrical equipment's • Leak from raw material / product tank

			• Vapor emission from scrubber
	Category – 2	Emergency, which may likely to produce impact on the Plant Operation & People working in the plant & can be controlled by using the resources available in the Company & taking the help from neighboring Industries.	• Fire in process plants • Fire in MCC/Transformers/DG • Spillage of acidic material • Fire at hazardous waste area • Fire in raw material & warehouse storage area
	Category – 3	A potential Emergency, which may affect major part of the factory & may or may not affect the surrounding area of the factory. It can be controlled using the resources available in the Company & taking the help of outside emergency services. In such situation Works Main Controller, under On-Site Emergency Control Plan, will inform & alert Dist.	• Major spillage from acid tank • Unconfined gas cloud explosion • Major fire in raw material & warehouse storage area • Major fire in tank farm area • Major fire in process plant
	Category – 4	A major emergency situation means which results into On-site & Off-site of the factory due to its severe impact & controlling with the help of outside source.	• Major spillage from acid tank • Unconfined gas cloud explosion • Major fire in raw material & warehouse storage area • Major fire in tank farm area • Major fire in process plant
	Category – 5	Other emergency arrived from natural calamities, wars etc.	• Natural calamities like, earthquake, cyclone, flood etc. • Air raids/marine attack, act of terrorism • Crashing of aircrafts or falling of flying objects • Other incident which can also result into disaster are • Agitation/forced entry by external group of people • Sabotage; and fire from neighboring industries

M/s Ramesh Chemical Industries falls under the category -3 of Emergency Situation classification due hazardous chemicals threshold storage quantities as per the MSIHC rule 1989.

39)	**CER ACTIVITIES PROPOSED YEAR WISE/ IN CASE OF EXPANSION ANY ADDITIONALITY SUGGESTED AND ITS COMPLIANCE (AS PER THE MOEF & CC GUIDELINES)**

Total cost of Project (Rs in Crores)	Total Cost of CER (Rs in Crores or Lakhs)	Percentage (%)
3.55 [0.3(Existing) + 3.25(Proposed)]	10.0	2.8 of Project Cost

Activities	Phase Wise Budget			
	1st Year Lacs	2nd Year Lacs	3rd Year Lacs	Total
Solar Energy Utilization Installation of 3.0 KW Roof Top Solar System on Healthcare facility @ Kanpura Village (Rs. 60,000/KW)	0.6	0.6	0.6	**1.8**
Drinking water treatment facility @ 15 KLD (Tertiary Treatment + Disinfection system)– 1 Nos., Village-Kanpura Village	0.5	0.5	0.5	**1.5**
Greenbelt development @ Kanpura village –150 Nos. Trees	0.5	0.5	0.5	**1.5**
Pond Reclamation/ Revitalization of Water Bodies Activities Included in Pond Reclamation / Revitalization will be re-excavation, wire fencing on boundaries, Brick lining on sides, stair case for approach, greenbelt / beautification on periphery etc. (Amrut Sarovar)	1.5	1.5	1	**4**
Education / Skill Development Computer Learning Centres	0.4	0.4	0.4	**1.2**
Total	**3.5**	**3.5**	**3**	**10**

Comments:

As per MoEF&CC's OM dated: 01.05.2018 and 30.09.2020, SEAC examined that the proposed cost of CER i.e 2.8 % (Rs 10 Lakhs) which is as per the requirement.

40) **ENVIRONMENT MANAGEMENT PLAN (ESPECIALLY WITH CEPI AND NON CEPI GUIDELINES, AS MAY BE APPLICABLE)**

Sr. No	Unit	Detail	Capital Cost (Rs. In Lakhs)	Total Recurring Cost (Rs. In Lakhs per Annum)
1	Wastewater	Primary ETP:30 KLD	7	19
		CMEE Membership: 26.1 KLD	2.61	24
2	Air	Stacks/vents: 5 Nos	10	2
		Scrubber:14 Nos	21	5

		MCS: 2 Nos	3	1
		Bag Filter: 2 Nos	5	1
3	Hazardous Management	Membership Charges, Disposal & Transportation Charges	5	9
4	Fire & Safety	Fire Hydrant System, Fire Safety, fire water storage tank & sprinkler System	39	7
		PPES & Proximity Suit, PLC-SCADA	40	8
		Flame proof electrical fittings Fire Extinguishers & Foam Type Trolley, Trailer Driver Pump	9	2
5	Green Belt Development	1123 Nos. trees (considering 80% survival rate) (Area of Green Belt 3743.69 Sq. m)	18	4
6	Occupational Health	O.H.C, OHS Training of staff, Medical Check-up	6	2
7	Noise Control	Acoustic enclosure	2.5	0.5
		Silencer	2.3	0.4
		Vibration pads	3	0.6
		Noise PPEs	2.3	0.4
8	VOC Control & LDAR	Primary & Secondary Condenser, Double seal Mechanical Pump, Hood with blower with Carbon Column	10	1
9	Environment Monitoring Program	AWH Monitoring (Internal+ External Lab), Risk analysis, safety audit, maintenance expenses details	5	1.5
10	CER Activity	2.8 % of Project Cost (Proposed CER activities i.e. Drinking water treatment facility, Rainwater Recharge System, Solar Energy Utilization & Greenbelt development)	10.0	1.5
11	Cost of conservation plan of Schedule-I species, if any	Plantation, Awareness Programme for conservation, Award to Informer, Feeding, Species Rescue Kit, cage,etc.	3.50	0.7
Total			**204.21**	**90.6**

S. No.	Code of Practice	Objective	Line of Action
1.	In Case of Fire at Factory/Hazardous chemicals storage area/Coal storage area/Diesel.	To deal with Fire efficiently and Quickly at different locations in the factory including diesel storage, and electrical panel.	Any person notices any sign of fire shall start shouting FIRE, FIRE (Aag,Aag)to seek assistance and also immediately take steps to give warning by blowing the siren continuously and take steps to extinguish the fire by using fire extinguishers available near the site of fire. After giving information reach the spot remove Man & Machinery and take steps to tackle the fire in accordance with the fire fighting instructions. Inform at security office to get Ambulance if required.

2.	In case of Heavy Spillage, Leakage of hazardous chemicals.	To deal with the incidence of hazardous chemicals spillage or leakage efficiently and quickly.	Any person who notices any leakage or spillage of hazardous chemicals from storage tank, pipe line or from any equipment should try to warn the near by persons and report to the shift supervisor without any delay. The Person should not go near the spill unless he is wearing a proper PPE and has been fully trained to handle the chemicals leaks.
3.	Short Circuit in electrical Equipment due to Overload, Bad &or maintenance	To deal with electrical fires and electrical shocks efficiently.	One who notices any sign of electrical fire immediately should in form electrical department for shutting offt he emergency control switch of the plant.

Off-site Emergency Plan:

- Off-site emergency plan would follow the on-site emergency plan. When the consequences of an emergency situation go beyond the plant boundaries, it becomes an off-site emergency.
- Offsite emergency is essentially the responsibility of the public administration. However, the plant management will provide the public administration with the technical information relating to the nature, quantum and probable consequences on the neighboring population.
- The off-site plan in detail will be based on those events, which are most likely to occur, but other less likely events, which have severe consequence, will also be considered. Incidents which have very severe consequences yet have a small probability of occurrence would also be considered during the preparation of the plan. However, the key feature of a good off-site emergency plan is flexibility in its application to emergencies other than those specifically included in the formation of the plan.
- The roles of the various parties who will be involved in the implementation of an off-site plan are described below. Depending on local arrangements, the responsibility for the off-site plan Site Controller Emergency Control Room Safety Officer Incident Controller Emergency Coordinator (Rescue, Fire Fighting) Emergency Coordinator (Medical, Mutual Aid, Rehabilitation, Transport and Communication) Emergency Coordinator (Essential Services) Shift In - charge Operator Electrician, Pump Operator First Aid, Transport Driver, Telephone – Operator Shift - In charge Electrician, Pump Operator would either rest with the plant management or with the local authority. Either way, the plan would identify an emergency coordinating officer, who would take the overall command of the off-site activities.

Please refer the section 7.3.12 and 7.4 of chaper-7 of EIA Report for detailed Proposed Emergency Measures and Preparedness Action Plan.

Comments:

The overall environment management plan (EMP) provided for capital and recurring cost for wastewater treatment, air emission control, noise control, hazardous waste disposal, fire & safety, occupational health, environment monitoring program, green belt and corporate

	environmental responsibility was deliberated and found satisfactory.
41)	**RECOMMENDATIONS OF SEAC** "On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and **unanimously** recommends the same to SEIAA for environmental clearance." **Conditions with which Environment Clearance is recommended:**
42)	**GENERAL CONDITIONS** **Construction Phase** a) "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades. b) "No uncovered vehicles carrying construction material and waste shall be permitted." c) "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured." d) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads). e) No excavation of soil shall be carried out without adequate dust mitigation measures in place. f) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing. g) Grinding and cutting of building materials in open area shall be prohibited. h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited. i) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable). **SPECIFIC CONDITIONS:** 1. Unit shall install CEMS **[Continuous Emission Monitoring System]** in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for

effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. **[For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].**

2. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
3. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
4. National Emission Standards for Bulk drug and formulation (Pharmaceuticals) Industry issued by the Ministry vide G. S. R. 541 (E) dated 06/08/2021 and amended from time to time shall be followed.
5. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
6. All measures shall be taken to avoid soil and ground water contamination within premises.
7. **Safety & Health:**
   a) PP shall obtain PESO permission for the storage and handling of hazardous chemicals. (If applicable).
   b) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
   c) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
   d) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
   e) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
   f) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
   g) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.

h) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.

i) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.

j) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.

k) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

l) The projectmanagement shall prepare a detailed Disaster ManagementPlan (DMP) for the project as per the guidelinesfromDirectorateof IndustrialSafety and Health.

m) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals (if any)

n) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.

o) Unit shall provide chlorine leakage control emergency kit and FRP hood with scrubber system for chlorine safety.

p) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for exothermic reaction vessel safety.

WATER

8. Total water requirement for the project shall not exceed 24.299 KLD. Unit shall reuse 0.089 KLD of treated effluent within premises. Hence, fresh water requirement shall not exceed 24.21 KLD and it shall be met through Borewell Water Supply only. Prior permission from concerned authority shall be obtained for procurement of water.
9. The industrial effluent generation from the project shall not exceed 25.35 KLD.
10. Management of Industrial effluent shall be as under:
    - ✓ 26.1 KLD effluent generated from process (19.98 KLD), bolier(0.15 KLD), cooling (0.2 KLD), washing (1.25 KLD), Scrubbing media (3.77 KLD) along with domestic wastewater (0.75 KLD) shall be treated into primary ETP and treated wastewater shall be send to Common MEE (BEIL Infrastructure Limited) for further treatment and disposal.
11. Domestic wastewater generation shall not exceed 0.75 KL/Day for proposed project and it shall be treated in ETP.
12. There shall be no induatrial and domestic wastewater discharge in to surrounding Environment
13. Treated waste water shall be sent to common facilities (Common MEE) only after

complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.

14. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.
15. Unit shall provide ETP with adequate capacity.
16. The unit shall provide metering facility at the inlet and outlet of ETP, reuse line and maintain records for the same.
17. Proper logbooks of ETP; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent sent to common facilities (Common MEE); power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

18. Unit shall not exceed fuel consumption for Boiler, Thermopack and D G Set as per the point no. 24 as mentioned above.
19. PP shall use approved fuels only as fuel in boilers Boiler, Thermopack and D G Set.
20. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
21. Unit shall provide adequate APCM with process gas generation sources as the point no. 25 as mentioned above.
22. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety& Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
    - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
    - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
23. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
24. For control of fugitive emission, VOCs, following steps shall be followed :
    a. Closed handling and charging system shall be provided for chemicals.
    b. Reflux condenser shall be provided over Reactors / Vessels.
    c. Pumps shall be provided with mechanical seals to prevent leakages.
    d. Air borne dust at all transfers operations/ points shall be controlled either by

spraying water or providing enclosures.

25. Solvent management shall be carried out as follows:
    - ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
    - ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
    - ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
    - ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
    - ✓ Solvents shall be stored in a separate space specified with all safety measures.
    - ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
    - ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.
26. Close loop solvent recovery system with adequate condenser system shall be provided to recover solvent vapours in such a manner that recovery shall be maximum and recovered solvent shall be reused in the process within premises.
27. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
28. Regular monitoring of ground level concentration of PM10, PM2.5, SO2, NOx, HCl, Cl2 and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

29. All the hazardous/ solid waste management shall be taken care as per the point no. 32 and 33 as mentioned above.
30. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
31. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
32. The project proponent has to obtain membership of TSDF site & CHWIF before

obtaining CTO of GPCB.

33. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

34. The PP shall develop green belt within premises (3743.69 Sq. m i.e. 52.11% of the total plot area) as submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

35. The project proponent shall carry out the activities of amount of Rs.10 Lakhs (Solar Energy Utilization: Installation of 3.0 KW Roof Top Solar System on Healthcare facility @ Kanpura Village (Rs. 60,000/KW), Drinking water treatment facility @ 15 KLD: (Tertiary Treatment + Disinfection system)– 1 Nos., Village-Kanpura Village, Greenbelt development @ Kanpura village –150 Nos. Trees, Pond Reclamation/ Revitalization of Water Bodies: Activities Included in Pond Reclamation / Revitalization will be re-excavation, wire fencing on boundaries, Brick lining on sides, stair case for approach, greenbelt / beautification on periphery etc. (Amrut Sarovar), Education / Skill Development and Computer Learning Centres) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
36. As proposed, at least Rs. 3.50 lakhs shall be allocated for the conservation plan Schedule- I species. (MoEF&CC)
37. The activities and the action plan proposed by the project proponent to address the socio-economic and public hearing issues in the study area, shall be completed as per the schedule presented before the Committee and as described in the EMP report in letter and spirit. (if Public consultation is applicable.) (MoEF&CC)
38. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Ecogreen Enviro Servicesand submitted by the project proponent and commitments made during

	presentation before SEAC and proposed In the EIA report shall be strictly adhered to in letter and spirit.
43)	**COMPLIANCE AND ADMINISTRATION/APPEAL OF EC ORDERS** 1. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded. 2. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities. 3. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government. 4. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions. 5. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded. 6. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010. 7. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com& (b) seacgujarat@gmail.com

3.	SIA/GJ/IND3/430596/2023	**M/S. ACROW PHARMACHEM PVT. LTD.** Survey No. 514, Village: Ijapura, Taluka: Jotana, District: Mahesana, Gujarat-384421	**EC – Refer back**

Category of the unit: **5 (f)**

Project status: **New**

Project located either in CEPI or non CEPI **: non CEPI**

1) Project proponent (PP) has submitted online application vide no.SIA/GJ/IND3/430596/2023on

09.06.2023 for obtaining Environmental Clearance.

1) PP has applied for Environmental Clearance and the SEAC recommended the project for grant of Environmental clearance vide this office letter no. SEAC-GEN-99-IND3/6425 dated: 21.10.2023 for conditions as mentioned therein.
2) The case was referred back by the SEIAA, Gujarat vide Letter No. SEIAA/GUJ/EC/5(f)/1488/2023 dated 22.11.2023 with the following point:
    a) Product details (Column No. 5) Of SEAC recommendation is blank &no any product details are mentioned in recommendation including raw material details with quantity, which is missing in Recommendation.
    b) Whether submitted various EMS load in SEAC Recommendation is as per proposed products or not.SEAC is requested to appraise accordingly.
3) PP has submitted reply of above query generated on SEAC VC meeting, through Parivesh portal.
4) The case was reconsidered in the SEAC meeting dated **25.01.2024**.
5) Project proponent (PP) and Technical expert M/s.T. R. Associatesremained present during video conference meeting.
6) PP presented their case as under:
    a) **Product details (Column No. 5) Of SEAC recommendation is blank & no any product details are mentioned in recommendation including raw material details with quantity, which is missing in Recommendation.**

Reply of PP:

- It is requested to note that, at the time of the presentation we have represented our case in front of the expert appraisal committee in the PowerPoint presentation slide in which product details and raw material details are mentioned and based on that SEAC has recommended our project for Environmental clearance. similar we have also represented environment management system load during the presentation in PowerPoint presentation slide,However in the SEAC format we have not incorporated the product detail due to our typographical error. So, we have attached here product and raw material details in the PPT format as well as in the SEAC format for your ready reference.

Detail of product:

Sr. No.	Name of Products	CAS No.	Quantity (MT/month)	End use of Product
1.	Sodium Stearyl Fumarate	4070-80-8	3.9	Lubricant for capsule and tablets
2.	Sodium Starch Glycolate	9063-38-1	20	Disintegrant for tablets and capsules
3.	Cross carmellose	74811-65-	10	Disintegrant for tablets and

	Sodium	7		capsules
4.	Carbomer	9003-01-4	10	Thickner, Gel formar and viscocity agent for ointment, Cream suspension
5.	Polacrillin potassium	65405-55-2	4	Disintegrant for tablets and capsules
6.	Mono Sodium Fumarate	5873-57-4	6	Acidity regulator, flavour enhancer and Accidulent for Pharma
7.	Methacrylic acid copolymer	25086-15-1	5	Tablet, Spansules and Granules coating material
8.	R & D	--	0.1	
Total			**59 MT/Month**	

 # Brief Note of Product Profile:

1. No of Manufacturing Plants: 1
2. **Brief Note regarding number of Products to be manufactured considering plant capacity:**
   Total plant area is **5137 m²**, which is sufficient to manufacture excipients as products in tune of **59 MT/Month**

Raw material

Sr. No.	Name of the Product	Name of the Raw Material	CAS number	Consumption	
				Per Ton	Per Month
1.	Sodium Starch Glycolate	Starch Maize/Potato	9005-25-8	4.42	17.24
		Caustic Soda*	1310-73-2	0.71	2.76
		Mono Chloro acetic Acid	79-11-8	0.84	3.26
		Methanol (Solvent)*	67-56-1	6.63	25.86
2	Sodium Stearyl Fumarate	Stearyl alcohol	112-92-5	0.12	2.48
		Maleic anhydride*	108-31-6	0.04	0.89
		Catalyst	--	0.001	0.02
		Caustic soda*	1310-73-2	0.02	0.37
		Acetone (solvent)*	67-64-1	2.35	47.03
3	Croscarmellose sodium	Sodium carboxy methyl cellulose	9004-32-4	1.04	10.39
		Hydrochloric acid (30.0 % w/v) *	7647-01-0	0.04	0.39
		Caustic soda*	1310-73-2	0.04	0.43
		Methanol (solvent)*	67-56-1	3.11	31.12
4	Carbomer	**Grade 1**			
		Acrylic acid	79-10-7	1.00	10.00
		Cross linking agent	101-37-1	0.01	0.10
		Catalyst	--	0.00	0.03
		Ethylene dichloride (solvent)*	107-06-2	6.94	69.44
		Grade 2			
		Acrylic acid	79-10-7	0.95	9.54
		Alkyl methacrylate	2495-25-2	0.05	0.46
		Cross linking Agent	101-37-1	0.02	0.17
		Catalyst	--	0.00	0.03
		Ethylene dichloride (solvent)*	107-06-2	6.62	66.23
		Grade 3			
		Acrylic acid	79-10-7	0.99	9.90
		Alkyl methacrylate	2495-25-2	0.01	0.10
		Cross linking agent	101-37-1	0.02	0.17
		Catalyst	--	0.00	0.02
		Ethylene dichloride (solvent)*	107-06-2	6.87	68.73
5	Mono Sodium Fumarate	Fumaric acid	110-17-8	0.84	5.05
		Caustic soda*	1310-73-2	0.29	1.74

		Methanol (solvent)*	67-56-1	2.52	15.14
6	Polacrillin potassium	Methacrylic acid	79-41-4	0.66	2.64
		Divinyl benzene	1321-74-0	0.34	1.36
		Catalyst	--	0.00	0.01
		Caustic potash	1310-58-3	0.14	0.57
		Ethylene dichloride (solvent)*	107-06-2	4.53	18.13
7	Methacrylic acid copolymer	Methacrylic acid	79-41-4	0.50	2.50
		Methyl methacrylate*	80-62-6	0.50	2.50
		Catalyst	--	0.00	0.02
		Ethylene dichloride (solvent)*	107-06-2	7.00	35.00

b) **Whether submitted various EMS load in SEAC Recommendation is as per proposed products or not. SEAC is requested to appraise accordingly.**

Reply of PP:

- It is requested to note that, SEAC has appraised the project based on the PowerPoint presentation slide in which product details, raw material details and Environment management system load details are mentioned and based on that, SEAC has recommended our project for Environmental clearance to SEIAA. However due to typographical error we have forgot to incorporate Product details into the SEAC format,We assure you that submission of the Environmental management system load is as per the EIA/EMP report is prepared and explained during the 696th SEAC meeting dated 22.09.2023, Environment management system load details including Air Environment, Water Environment, Solid/Hazardous waste and Environment monitoring is submitted.

The committee found the reply is satisfactory and EMS pollution load is already given in the recommendation letter dated 21.10.2023

After detailed discussion, it was decided to recommend the project to SEIAA, Gujarat for grant of Environmental Clearance with conditions mentioned in earlier Recommendation Letter forwarded from SEAC vide No. SEAC-GEN-99-IND3/6425 dated: 21.10.2023 along with above mentioned details in Sr no. 6(a)

4.	SIA/GJ/IND3/432009/2023	**M/s. Meghmani Finechem Limited (Unit-2)** Plot no. D-II/13,Dahej-II GIDC Estate, Ta: Vagra, Dist: Bharuch, Gujarat-392130	**EC-Reconsideration**

Category of the unit: **5(f) – B1**

Project status: **New**

Project located either in CEPI or non CEPI **: non CEPI**

PP submitted salient features of the project including Water, Air and Hazardous waste management are as under from Sr. No. 1, 3 to 40. And in Sr. No. 2 detailed deliberation of Committee is mentioned. Comments of SEAC is given in relavant points.

1) **DETAILS OF APPLICATION:**

1.1 Type of application:	EC (New)
1.2 Proposal no.	SIA/GJ/IND3/432009/2023
1.3 Category of Project:	5 (f)
1.4 Date of application:	12/06/2023
1.5 Date of EDS by SEIAA a) EDS Raised b) Reply by PP	Not Applicable
1.6 Date of EDS by SEAC a) EDS Raised b) Reply by PP c) Accepted by SEAC	1. EDS dated on: 06/07/2023; Reply on 06/07/2023 2. EDS dated on: 19/07/2023; Reply on 20/07/2023 3. Accepted on Dated 21.07.2023
1.7 TOR No. & Date :	TOR No. SIA/GJ/IND/54205/2023 Date :05/05/2023
1.8 Date and place of Public Hearing	Not Applicable
1.9 Name of accredited Environmental Consultant & address along with Accreditation No. & Validity	M/s. Excel Enviro Tech Address: TF-2, Sun House, Old High Court Lane, Off Ashram Road, Ahmedabad – 380 009 NABET/ETA/2124/RA 0234_Rev 01 valid upto June 27, 2024
1.10 SEAC Meeting No. and Date:	730th SEAC meetingdated 29.11.2023
1.11 ADS raised by SEAC meeting No & date:	1. 698th SEAC meeting dated 26.09.2023 2. 730th SEAC meetingdated 29.11.2023
1.12 Reply Submitted by PP dated:	1st ADS Reply Submitted on Dated: 11.11.2023 2ndADS Reply Submitted on Dated:06.01.2024
1.13 Revised Consideration SEAC Meeting No. and Date:	768th SEAC meeting dated 25.01.2024

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2) **DELIBERATIONS OF SEAC:**

1) This is a new project proposed for manufacturing of Synthetic Organics Chemicals
2) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
3) SEIAA has issued standard ToR (auto ToR) vide File No.SIA/GJ/54205/2023 dated 05.05.2023.
4) The proposal was considered in the SEAC video conference meeting dated **26.09.2023.**

5) Project proponent (PP) and their Technical Expert/Consultant M/s. Excel Enviro tech remain present during video conference meeting.
6) Technical Expert/Consultant M/s. Excel Enviro techhas submitted undertaking stating that they valid NABET accreditation certificate and entire EIA/EMP work including field study, data collection, data analysis and report preparation is been carried out by them and their staff. Baseline data carriedout by M/s Arihant Analytical Laboratory(NABL accrdiated laboratory). Both have done MoU for the same.
7) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
8) During presention by PP, Committee noted following:
    a) In product list PP has mentioned inorganic products also which does not attracts EIA Notification, so committee asked to separate it and mentioned as non-EC product and submit the revised product list.
    b) In hazardous waste matrix PP has shown spent solvent : 4000 MT/Annum. Committee asked that there are so many products though the generation of spent solvent is seem less. PP replied that their products are not solvent base, so spent solvent generation is less.
    c) In water balance diagram PP has shown waterwater generation from “others” is 200 KLD but not specify “others” means which source. Discharge into deep sea mentioned but though which means it ultimately reaches to deep sea is not clearly specified. Further boiler blowdown: 670 KLD and cooling blowdown : 830 KLD such a huge generation of wastewater though not mentioned any treatment facility and simply shown used in for coal handling/ ash quenching/ dust suppression/ Green belt Development. PP has applied for water requirement and for discharge of treated effluent to GIDC. PP has not submitted GIDC letter for discharge of treated effluent into GIDC drainage connection. Further committee noted that the water consumption for industrial purpose is 14,796 KLD whereas wastewater generation is only : 5,863 KLD so asked to justify the same in writing and also mentioned in SEAC format.
    d) In layout committee informed to mentioned the sprinklers. And also submit floor plans.
    e) In CER activities, committee noted that PP has mentioned one of the activity under CER is to “Arranging medical camp for people of nearby villages and Providing medicines to nearby health centres”, so committee asked that the activity should be related to improvement in surrounding environment. Also asked to mention the name

of villages where you will provide these facilities under CER. Also mention upto how many years you will maintain these activities.

f) Regarding carbon footprint and carbon sequestration, committee asked specify the activities from where the carbondioxide will generate and how you will mitigate the same.

g) In details of storage of raw materials committee noted that the bromine is stored in glass line tank. Committee asked that for storage of raw materials you should provide spare tanks in case of any emergency.

9) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period October 2021 to December 2021. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx, NOx, VOCs, Cl_2, HF and HCl at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site will remain within the National Ambient Air Quality Standards (NAAQS). In ground water the TDS concentration in the ground water samples has been found to vary between 1116 mg/L (Janiadara) and 1342 mg/L (Jolva). PP informed that the high TDS concentration in ground water may be due to sea water ingression.

10) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.

11) PP has submitted Plot transferred letter issued by GIDC vide letter No GIDC/RM/ANK/TRF/PTO/DAH5/325 date 26.09.2022 in favour of Meghmani Finechem Limited.

12) Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.

13) **After detailed discussion, Committee unanimously decided to consider the project in one of upcoming meeting only after submission of following documents:**

a) Revised product list by separating the non-EC products.

b) Justification of less generation of spent solvents, shown in hazardous waste matrix.
c) Revised water balance flow diagram mentioned with all details.
d) Justification why wastewater generation: 5,863 is too less than water consumption: 14,796 KLD.
e) Permission letter from concerned authority for discharge of treated wastewater with booked quantity.
f) Revised layout showing sprinklers and also submit floor plans.
g) Submit revised CER with activities relevant to environment aspects, also mention the name of villages where you will carry out CER activities and mentioned about its maintainace.
h) For storage of raw materials PP shall make provision for spare tanks in case of any emergency.
i) Regarding carbon footprint and carbon sequestration, specify the activities from where the carbondioxide will generate and how you will mitigate the same.

14) PP has submitted reply of above query generated on SEAC VC meeting, through Parivesh portal.
15) This proposal is reconsidered in SEAC VC meeting dated: **29.11.2023.**
16) PP along with their technical expert/consultant, M/s.Excel Enviro tech remains present in the meeting and made presentation before Committee.
17) During meeting, Committee noted that PP submitted following details:
18) During meeting PP presented following details before the committee:

a. PP has submitted product list by separating the non-EC products,
Here, committee asked to remove these non-EC products from product list because as it does not attract EC then how committee will approve it.
b. In Hazardous waste matrix, the quantity of spent solvent generation is less because there is maximum solvent recovery (95-100 %) during process. Details of the Hazardous waste matrix is submitted.
Here, Committee asked to show how much quantity solvent they are recovering. Also asked to mention this scrubbing bleed in hazardous waste matrix.
c. PP has submitted revised water balance diagram and justified the "**Others" i.e. 200 KLD** is used in scrubbing system (scrubbing liquor gets converted to inorganic product like HCl and Sodium Hypochlorite and same goes outside premises. So, does not come to ETP).
d. As per the revised water Balance flow diagram, out of total Industrial water consumption (14796 KLD), in manufacturing process, 6947 KLD is water

consumption and 5033 KLD is effluent generation. The difference is due to process consumption, losses and some products being liquid in nature carries water component. Around 72 % of process water comes as effluent and 28 % is consumed/losses. While 830 KLD from waste water generation from Boiler and cooling will be reused for dust suppression, coal handling, ash quenching and greenbelt development. 1153 KLD is evaporation loss in cooling tower and around 2500 KLD is consumption in form of process steam.

e. Unit has obtained Assurance letter from concerned authority vide letter no. GIDC/BRH/DEE/DRG/598, dated 25.10.2023 for discharge of 5033 KLD of treated industrial effluent.

f. PP has presented revised Plant layout showing sprinklers and floor plans.

g. Submitted revised CER with activities relevant to environment aspects, also mentioned the name of villages where they will carry out CER activities.

h. PP mentioned that they have provided 2 Nos. of tanks with capacity of 10 KL and 30 KL as spare tank for any type of leakages/emergency.

i. PP has presented carbon footprint and carbon sequestration.

19) Committee asked to submit the following detail:

- To remove non-EC products from product list and submit the revised product list.
- Mentioned how much quantity of solvent they you will recover. Also mention the scrubbing bleed in hazardous waste matrix.

20) Till date PP has not submitted the above details.

21) **After detailed discussion, Committee unanimously decided to consider the project in one of upcoming meeting only after submission of following documents:**

- To remove non-EC products from product list and submit the revised product list.
- Mentionedhow much quantity of solvent they you will recover. Also mention the scrubbing bleed in hazardous waste matrix.
- Mention details of application- ADS date, ADS reply date and reference of this meeting.

22) PP has submitted reply of above query generated on SEAC VC meeting, through Parivesh portal.

23) This proposal is reconsidered in SEAC VC meeting dated: **25.01.2024.**

24) PP along with their technical expert/consultant, M/s. Excel Enviro techremains present in the meeting and made presentation before Committee.

25) During meeting, Committee noted that PP submitted following details:

- ✓ PP has submitted revised product (without non EC based product) list and same

details in given in format at Sr. No. 05.

- ✓ PP has mentionedhow much quantity of solvent they will recover. Also mentiond the scrubbing bleed in hazardous waste matrix. The same details are given in format at Sr. No. 32.
- ✓ PP has mentioned details of application- ADS date, ADS reply date and reference of this meeting and same details in given in format at Sr. No. 01.

26) During meeting committee asked for following details:

- ✓ Mentioned total consumption of Solvent in hazardous waste matrix.

27) Later on PP has submitted following details through email dated 26.01.2024:

- ✓ PP has submitted total consumption of Solvent (29639.7 MT/Annum) with resue in Hazardous Waste Management Matrix. The same details are given in format at Sr. No. 32.

28) Committee found presentation and reply submitted by PP was satisfactory.

3) **EIA REPORT (BASELINE STUDIES AND RISK ANALYSIS)**

Sr. no.	**Particulars**	**Details (Give brief note / Conclusion of the particular subject)**	**Page no., Section no. & chapter no. of EIA report**
a	Ensure that there is no change in EIA report w. r. t. ToR i.e. Form-1 & PFR	We have prepared EIA Report as per TOR points mentioned by SEAC	--
b	Baseline environmental monitoring period	Study period is between October 2021 to December 2021	Refer ***Chapter-3,*** Section 3.4, Page No. 56 of EIA Report
c	Whether baseline data is primary or secondary data? 3) If baseline data carried out by other NABL accredited laboratory then MoU between both. 4) If baseline data is taken from another EIA report, then MoU between NABET consultant and industry whose data used in preparing present EIA report and time period of baseline data shall be as per MoEF&CC's OM dated: 08.06.2022.	Baseline Data is Secondary Data. Baseline data is carried out by NABL accredited laboratory Arihant Analytical Laboratory, MoU between both is done.	MoU of ArihantAnalytical Laboratory attached on page no. 80
d	Baseline study area (Km)	10 Km radius from the project site	Refer ***Chapter-3*** Section 3.3, Page No. 52 of EIA Report

AIR

e	No. of AAQM stations including project site	8 Locations	Refer **Chapter-3,**section 3.7 Table 3.6, and Page No. 60 of EIA Report.
f	Parameters considered for AAQM including project specific parameters.	$PM_{2.5}$,PM_{10},SO_2,NO_x, HCl, Cl_2,HF	Refer chapter 3, Section 3.7.2& 3.7.3. Table 3.7& Table 3.8 on page number 61 of EIA Report.

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Sr. no.	Parameters	Range of Concentrations (µg/m^3)	Remarks
1	$PM_{2.5}$	32.89 - 37.52	Values are well below the NAAQS
2	PM_{10}	64.55 – 74.28	
3	SO_2	12.60 – 22.78	
4	NO_x	19.43 – 25.83	
5	HCl	BDL (DL:0.1)	
6	Cl_2	BDL (DL:0.1)	
7	HF	BDL (DL:0.1)	

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g	Whether the results of AAQM is within the norms prescribed in NAAQS ? If no, give reasons as per EIA report	Yes, Results are within prescribed norms	Refer chapter 3, Section 3.7.2& 3.7.3. Table 3.7& Table 3.8 on page number 61 of EIA Report.
h	Comments for AAQM results w. r. t. NAAQS	Values are well below the NAAQS norms	Refer chapter 3, Section 3.7.4. Table 3.10 on page number 63 of EIA Report.
i	Software used for the mathematical Modelling for anticipated incremental GLCs (Ground Level Concentrations	The mathematical model used for conducting the study is the latest version 9.1.1 of Lakes AERMOD View, which is entirely in line with the requirements of Central Pollution Control Board, New Delhi.	Refer Chapter 4, Section 4.4.3. on Page no. 108 of EIA Report.
j	The resultant concentrations w. r. t. NAAQS and its conclusion.	The incremental values are well below the NAAQS norms	Refer Chapter 4, Table 4.4 to 4.11 of EIA Report. page number 111-

				120 of EIA Report.
WATER				
k	No. of monitoring stations including project site wrt water a) Groundwater b) Surface water		a) 8 Locations b) 8 Locations	Refer Chapter 3, Table 3-14and Table 3-16 on page no- 67 and 70 of EIA Report.
l	Conclusion of the Monitoring during baseline study of water (ground water and surface water)		The TDS concentration in the ground water samples has been found to vary between ***1116 mg/L(Janiadarar)*** *and* ***1342 mg/L (Jolva)*** and hardness in the range of ***302 mg/L (Koliyad)*** *and* ***385 mg/L (Dahej)***. The concentration of TDS is well above the drinking water standards. pH is found Neutral at all locations. The Phenolic compound and Ammonical Nitrogen are below detectable limits. The Fluoride concentration in ground water ranges from ***0.56 mg/L****to* ***0.75 mg/L***.The high TDS concentration in ground water may be due to sea water ingression. Concentration of metals in raw water is also within acceptable range.	Refer Chapter 3, Table 3-15 on page number 68 of EIA Report.
m	No. of monitoring stations including project site wrt soil		8	Refer Chapter 3, Table 3-18 on page no- 73 of EIA Report.
n	Conclusion of the Monitoring during baseline study of land / soil		Samples collected from identified locations indicate that the soil is neutral; pH value ranging from 7.41 to 8.25.Soil texture is mostly mixed type. Organic matter is in the range of 1.43 to 1.72.	Refer Chapter 3, Table 3-19 on page no- 74 of EIA Report.
o	No. of monitoring stations including project site wrt Noise		8	Refer Chapter 3, Table 3-11 on page no- 65 of EIA Report.
p	Conclusion of the Monitoring during baseline study of Noise		The Noise levels of the study area are compared with the noise level standards. It has been observed that the measured Day equivalent and night Equivalent are well below	Refer Chapter 3, Table 3-11 to table 3-12 on page no65 of EIA Report.

		permissible limits.	

q Any other details:

a) Details of carbon footprint: Carbon foot print during operational phase, CO2 emission will be expected from 22,041.06 TPA from power consumption, 2,33,207.7TPA from the Manufacturing process, fuel and transportation of finished products/Raw material. **Hence, Total CO2 emission from all the sources will be 2,55,248.76Tonnes/Annum.**

b) Details of water footprint:

Calculation of Water foot print:

Considering Blue water & Grey water for water footprint calculation

Blue water Incorporation

Evaporation losses from Process = 0

Evaporation losses from Boiler and cooling tower = 2,498 KLD= 7, 99,360 KL/Year

Blue water evaporation = 0 + 7, 99,360 = 7, 99,360 KL/Year

Blue water Incorporation

Water required in the process and Washing = 6947 KLD = 22,23,040 KL/Year

Water required in the Boiler and cooling tower = 4,481KLD= 45,88,54,400 KL/Year

Water requirement for domestic use = 78 KLD= 24,960 KL/Year

Blue water Incorporation = 2223040 + 458854400 + 24960 + 46,11,02,400 KL/Year

Lost Return flow = 0, Recycled water used = 3,455 KLD= 11,05,600 KL/Year,

Rain water harvesting = 1371.2 KL/Year

WF, blue = 7, 99,360 + 46,11,02,400 - (46,11,02,400 + 1371.2) = 797988.8 KL/Year

Grey Water Footprint

5033 KL/day of effluent is generated.

Disposed water is of standard parameters, so water required to rejuvenate polluted water will be zero.

Hence Grey Water Footprint = 0

Total Water Footprint = 797988.8 + 0 = 797988.8 KL/Year

The total Water foot print will be 797988.8 KL/Year.

c) Details of carbon sequestration: As per carbon sequestration analysis, the total CO2 emissions will be **2,55,248.76** Tonnes/Annum from the process, fuel and transportation of finished products/Raw material. To sequestrate the carbon emissions green belt plantation & various measures will be adopted. Total 54250 trees will be planted at project site and outside of premises for CO2 sequestrated. Additionally, Unit will sequestrate CO2 by installation of Solar Panels, Solar lights &Solar Trees. The GHG reduction initiatives practiced are sequestration of carbon by tree plantation and avoiding emissions by using renewable source of energy.

Absorption of CO2 emission by Trees Plantation

Nos. of Trees	Location	Absorption of CO2 by tree
54250 Trees	Within premises & Outside of premises (From CER activity)	2548.42

Reduction of CO2 by Renewable Energy

S.	Source	CO2 reduction

No.		(TPA)
1	Renewable Energy generation through Solar panel installation (within premises) – 1000 KWH	1640
2	Renewable Energy based power (Owned) (From CER activity) - 400 KWH	656
3	Renewable Energy by installation of Solar trees (From CER activity) 500 KWH	820
4	Installation of wind solar hybrid project for renewable energy – 24300 KWH	39,852
	Total CO2 Reduction (TPA)	**42,968**

As per carbon sequestration analysis, the total CO2 emissions will be 2,55,248.76Tonnes/Annum from the process, fuel and transportation of finished products/Raw material.Thus, Unit will sequestrate around 45,516.42 (17.83) tons per year of total carbon dioxide generated during year through above mitigation measures.

d) Details of roof top rain water harvesting and reuse within premises:

M/s. Meghmani Finechem Limited (Unit-2) plans to adopt Water harvesting technique as social concern moral responsibility as well as regulatory requirement.

Sr. No.	Particular	Roof Top Area	Open Area	Greenbelt Area	Road Area
1	Catchment Area Available (m2)	72515	46799.41	97000	450
2	Coefficient of Runoff (as per CGWA Guideline)	0.85	0.2	0.15	0.65
3	Annual Rainfall (m)	0.703	0.703	0.703	0.703
4	Area wise volume of rain water can be harvested (kl/Year)	43331.3	6580.0	10228.7	205.6
5	No. of Rainy days per year	90 Days			
6	Total Volume of Rain water can be harvested (kl/Year)	1371.2(Considering only roof top area)			
7	Average volume of rainwater that can be harvested (kl/day) during 100 rainy days	338.10			
8	Retention Period	7 days			
9	Total Volume that needs to be store at a time	2366.7			
10	10% Evaporation Loss	2130.03			
11	Tank Size (including 20 % FB)	2556.04			
12	Tank Size need to provide at a time	3000* 1 nos.			
FB -	Freeboard – Air space above the water line to the underside of the cover.				

r	Details of Schedule-I species and its conservation plan, if any
	Not applicable as a There is no schedule – I Species found in the study area.

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4) **RISK ANALYSIS & ITS MITIGATION MEASURES IN GENERAL AS GIVEN IN EIA REPORT**

Risk Analysis:

The worst-case scenario for Release of Oleum 65 %, Chorine, Ammonia, Methanol, Bromine, Ethylene Oxide, M-Xylene, Dimethyl dichloro silane, Thionyl chloride, Ethyl acetate due to damage of storage tank considered. Details are mentioned in chapter-7 of

EIA report.

Mitigation Measures:

- Management to ensure proper handling of the spillages during transfer, charging operation and provision of a Dust Collection System for collection of the air borne material wherever applicable.
- Preventive maintenance of flange connections and glands of pumps.
- Management will also ensure proper usage of the Personnel Protective Equipment by the workers.
- Regular Work Place Monitoring, Ambient Air, Stack Air Monitoring to be done.
- Proper identification on discharge line.
- Providing arrangements to avoid static sparks.
- Take care of adverse weather conditions.
- Providing Explosion Vents in spaces with possibility of air-vapour mixtures. Smoke detectors or heat detectors to be provided in storage or process area

On-Site Emergency Plan:

1.	Name and Address of the Company /persons furnishing the information	:	M/s. Meghmani Finechem Limited (Unit-2) Plot no. D-II/13, Dahej-II, GIDC Estate, Tal: Vagra, Dist: Bharuch, Gujarat- 392130
2.	Key Personnel of the organization and responsibilities assigned to them in case of an emergency	:	HSE In charge, Factory Manager HOD's, Engineering team etc.
3.	Outside organizations if involved in mutual aid during On-site emergency	:	Company will do Mutual aid agreement with outside organization
	(a) Type of accidents	:	Fire, Explosion, Spillage/leakage, Toxic gas dispersion, falling objects, structure collapse, burn injury etc.
	(b) Responsibility assigned	:	To be assigned
4.	Details of liaison arrangement between the organizations	:	Company will do liaison agreement with outside organization
5.	Information on the preliminary hazard analysis	:	---
	(a) Type of accidents	:	Toxic gas dispersion, fire, Explosion, Fall, Burn etc.
	(b) System elements or events that can lead to a major accident	:	Inade47quate design • Mechanical failure of Pipes, Vessels, Reactors etc. • Failure of manual and automatic control system and safe devices • Failure of safety systems. • Unsafe operation / maintenance. • Heating of electrical element may result into fire. • Natural Calamities
	(c) Hazards	:	Physical, Chemical, Mechanical
	(d) Safety relevant components	:	• Provision of separate Chemical Storage area • Secondary containment provision • Provision of PPE, safety Shower with eye Washer. • Fire Protection System • Emergency Siren/Alarming system • Qualifi8ed Operatives/ Supervisors • Calibration, testing and Maintenance of

				machineries, Pressure gauges, safety valves etc. • Displaying Instruction, Cautionary Notice, HAZCOM • Permit to work system, etc. • Provisions of training to workers, operatives, Supervisors, etc. • Testing & Inspection of lifting tools, tackles, air compressor etc. as per GFR requirements
	6.	Details about the site	:	--
		(a) Location of dangerous substances	:	Storage area & Isolated
		(b) Seat of key personnel	:	Office & Plant area
		(c) Emergency Control Centre	:	Emergency Control Center will be decided. Fire & Rescue equipments, PPE's etc. will be provided.
	7.	Description of hazardous chemicals at plant site	:	---
		(a) Chemicals (quantities and toxicological data)	:	As per Risk Assessment chapter
		(b) Transformation if any which could occur	:	---
	8.	Likely dangers to the plant	:	---
	9.	Enumerate effects of	:	
		(a) stress and strain caused during normal operations	:	There might be minor chances of stress and strain in manual operation. Effective steps will be taken to avoid for the same.
		(b) Fire and explosion inside the plant and effect if any of fire and explosion outside	:	As per Worst case scenario of Chemical (Risk Assessment Chapter)
	10	Details regarding	:	
		(I) Warning, alarm and safety and security systems	:	Company will be provided Emergency siren/ Alarming system, SCBA set, chemical spillage control kit, PPE's, Display of MSDS & Signa boards, etc.
		(ii) Alarm and hazard control plans in line with disaster control and hazard control planning, ensuring necessary technical and organizational precautions	:	Yes, will be provided alarms & developed emergency procedures.
		(iii) Reliable measuring instruments, control units and servicing of such equipments	:	Unit will do Periodically Calibration & Testing of Equipments
		(iv) Precautions in designing of the foundation and load bearing parts of the building	:	Stability Certificate will be obtained
		(v) Continuous surveillance of operations	:	Maintenance and Inspection will be carried out of equipments & operation.
		(vi) Maintenance and repair work according to the generally recognized rules of goods engineering practices	:	Company will follow preventive maintenance & repairing work accordingly & maintain good engineering practice.
	11	Details of communication facilities	:	Company Will provide Emergency Siren,

.	available during emergency and those required for an offsite emergency		Mobile Phones, Windsock, Ambulance etc.
12.	Details of firefighting and other facilities available and those required for an offsite emergency	:	Adequate and appropriate ABC, Foam, CO2 type of Fire extinguishers will be provided; Fire hydrant system will be installed. SCBA set, safety shower, First aid boxes etc. are made available in the plant area.
13.	Details of first aid and hospital services available and its adequacy	:	Adequate First aid box will be provided in the plant area. OHC & Ambulance van facility to be provided. Mutual aid liosoning will be done nearby hospitals for medical emergency.

- **INTRODUCTION OF OEP**

An emergency in the plant premises has the potential to cause serious injury or loss of lives or extensive damage to the property and/or environment and serious disruption both inside and outside the plant. In such cases sometimes outside agencies are required to call for help in handling the situation. The causative factors like plant/equipment failure, human error, earth quake, sabotage etc. will normally manifest in various forms viz. Fire, Explosion, Toxic release, structure collapse etc.

- **OBJECTIVES**

The primary objective of the emergency procedure is to safeguard of life of the personnel working in the plant and the plant itself. Another objective is to familiarize all employees with the organizational set-up to combat any emergency likely to arise. The OEP is also to develop a permanent infrastructure of trained persons and suitable facilities to meet probable eventualities that may affect safety of people, plant and/or environment.

- **EMERGENCY**

An emergency is the situation, which has potential to cause a large-scale damage or destruction to life or property or Environment or combination of these within or outside the factory. Sometimes the Emergency results into uncontrollable situations and leads towards disaster such as unexpected severe situation may be too great for the normal workforce in the area within the Plant premises. Therefore, it is essential to have a laid down procedure to meet emergency systematically.

- **FACILITIES AVAILABLE:**

Mentioned below facilities in the premises will be provided to combat any emergency.

- **FIRE PROTECTION:**

In the plant premises utmost care will be taken by providing variety of extinguishers at various prominent locations. Fire hydrants system with hose boxes will be provided At all locations and building area. Fire hydrant system will be pressurized by electrical pump.

- **WATER STORAGE:**

The adequate water capacity of the firefighting reservoir will be maintained in the tank.

- **MEDICAL HELP**

First aid boxes will be provided at various locations. Occupational Health center with medical arrangement can be made available in the company. Mutual aid partner Liaison with nearest hospitals will be done in case of any emergency. A stand by Ambulance van will be always kept if victims are required to be transferred to outside hospitals. Telephone numbers of nearby factories to be also available.

- **COMMUNICATION SYSTEM**

Effective and immediate communication of the emergency is the vital element in the process of emergency preparedness. It helps to mobilize the resources in the shortest possible time and attack on the emergency at its incipient stage.

The communication system with regards to raising the alarm, declaring the major

emergency and procedure to make it known to others is explained in brief.

- **SIREN**

Siren will be installed and operated for alerting work force who is present in premises at the time of emergency. It can be used for declaring the on-site as well as off-site emergency and making the emergency known to the surrounding people.

Depending upon the type of the emergency siren will be blown as per siren code.

- **EMERGENCY CONTROL CENTRE (ECC)**

For the purpose of handling emergency, Emergency Control Center will be declared as below for the plant. All communications to and from will originate at this control center and the telephone numbers of the ECC.

This Emergency Control Room to be equipped with:

- A copy of On-Site Emergency Plan.
- Address and Telephone numbers of the Factory Inspectorate, Pollution Control Board, Police, Fire Brigade, Hospitals and OEP Team Members
- Plant layout-indicating storage of hazardous materials, layout of fire Hydrants/extinguishers, entrances/exits, roads etc.
- Portable P.A. System, flood lights, Torches etc.
- Fire Blankets, First Aid Box etc.
- One vehicle as stand by for emergency duties.
- Material Safety Data Sheets of all chemicals handled.
- Note pads, pen/pencils to record the messages and activities.

- **WIND SOCKS**

Wind direction will be determined with the help of windsocks installed on the structure height.

- **ASSEMBLY POINT**

Open space outside building will be decided as Assembly Point because,

- It is away from the process plant.
- It has separate approaches.

- **FIRE AND TOXICITY ARRANGEMENTS**

Adequate firefightingequipment's and personal protective equipments will be available in factory premises. Portable fire extinguishers, Fire hydrant system with sprinkler will be installed at various locations in plant and will be easily accessible too. They will be regularly inspected for their working conditions. In the same fashion, all personal protective appliances will be maintained in good working condition so the same can be utilized in emergency.

Essential workers and other personnel will be regularly trained to use both fires fighting, first aid treatment and personal protective equipments.

5) **PRODUCT PROFILE AND BRIEF NOTE OF PRODUCT PROFILE**

Sr. No.	Name of Product	CAS No.	Quantity (MT/month)	End use of Product
1	Hydroxyethyl cellulose (HEC) **And/ OR**	9004-57-3	4,200	Construction chemicals and coating industries
	Hydroxyethyl methyl cellulose (HEMC) **And/OR**,	9004-62-0		
	Ethyl cellulose (EC)	9032-42-2		
2	Chlorinated poly vinyl chloride (CPVC)	68648-82-8	21,000	Plastic Pipes
3	**Chlorosilanes Group**			Synthesis of silicone polymer
	Dimethyl Dichlorisilane (Me2) **And/OR**	75-78-5	10,000	
	Methyl Trichlorosilane (Me1) **And/OR**	75-79-6		
	Trimethyl Chlorosilanes (Me3)	75-77-4		

	And/ OR			
	Methyl Dichlorosilane (Me1H)	75-54-7		
4	**Poly dimethyl Siloxane (PDMS)**			Intermediate in the production of silicone rubbers, gels and polymers
	D4 (Octa methyl cyclo tetra siloxane) **And/ OR**	556-67-2	5000	
	DMC (D3+D5 mixture)-Dimethyl Cyclosiloxain**And/ OR**	188627-10-3		
	Low Ring Polysiloxanes**And/ OR**	63148-62-9		
	High Ring Polyciloxanes	63148-62-9		
5	Mono chloro Acetic Acid (MCAA)	79-11-8	10,000	To manufacture carboxy methyl cellulose
6	Anhydrous Hydrofluoric Acid (AHF)	7664-39-3	1,700	As a raw material for chemical process in different chemical Industries
	MPP (Fluorination/Chlorination)			
7	3-amino-4-chloro benzotrifluoride**And/OR**	121-50-6	835	Specialty Chemicals
8	4 amino Benzotrifluoride**And/OR**	455-14-1		
9	N-(4-Trifluoromethyl) aceto-acetanilide **And/OR**	351-87-1		
10	2,6-dichloro-4-trifluoromethyl-aniline **And/OR**	24279-39-8		
11	5-Amino-3-cyano-1-[2,6-dichloro-4-(Trifluoromethy)-phenyl] pyrazole**And/OR**	120068-79-3		
12	4 Fluoro toluene **And/OR**	352-32-9		
13	4 Fluorobenzaldehyde**And/OR**	459-57-4		
14	3-Bromo-4-Fluoro Benzaldehyde **And/OR**	77771-02-9		
15	4-Fluoro-3- Phenoxy Benzaldehyde **And/OR**	68359-57-9		
16	4-Fluoro Benzoyl chloride **And/OR**	403-43-0		
17	4,4'-Difluoro Benzophenone**And/OR**	345-92-6		
18	2,5-Dichloro BenzoTriflouride**And/OR**	320-50-3		
19	3-Chloro Pivaloyl Chloride **And/OR**	4300-97-4		
20	2-(Trifluoromethyl) Benzoyl chloride **And/OR**	312-94-7		
21	2-(Trifluoromethyl) Benzamide**And/OR**	360-64-5		
22	1,3- Hexafluoroxylene**And/OR**	402-31-3		
23	2,3,4,5-Tetra chlorobenzoyl chloride **And/OR**	42221-52-3		
24	2,3,4,5-Tetrafluorobenzoyl chloride **And/OR**	94695-48-4		

25	3,4-Difluoro Benzotrifluoride**And/OR**	328-84-7		
26	3,4,5 TrichloroBenzotrifluoride	50594-82-6		
27	Polyvinylidene Fluoride (PVDF)	24937-79-9	500	Manufacture process of Metal Paints
28	Poly tetrafluoro ethylene (PTFE)	9002-84-0	750	For the manufacture of Heat Resistant polymer products.
29	Lithium Hexafluorophosphate (LiPF6)	21324-40-3	420	Speciality Chemical
30	R-32 (Difluoromethane HFC-32)	75-10-5, 811-97-2 354-33-6	835	As a Refrigerant Gas
	Total (A)		**55,240 MT/Month**	
31	Captive Co-Gen Plant	--	4.5 MW	Electricity for captive use
	Total (B)		**4.5 MW**	
	Total (A + B)		**55,240 MT/Month & 4.5 MW**	--

 # Brief Note of Product Profile:

1. No of Manufacturing Plants: 2
2. Brief Note regarding number of Products to be manufactured considering plant capacity: **55,240 MT/Month & 4.5 MW**

The project falls underCategory B1 of project activity 5(f)as per the schedule of EIA Notification 2006.

6) **PROJECT DETAILS (COST/LAND OWNERSHIP/NA PERMISSION ETC.)**

a) Total **cost of Proposed** Project (Rs. in Crores):

Total
700 Crores

Break-up of proposed project Cost:

Details	**Total (Rs. In Crores)**
Land	12.88
Building	105
Process and Utility Equipments	457.12
Env. & Safety	100
Miscellaneous	25
Total	**700**

b) **Details of Land / Plot ownership details:** (Linking between Land ownership and PP is required.)

i. **Total Plot area (sq mt): 2,89,844.41 m^2**

ii. **GIDC Plot Allotment letter/ NA documents: GIDC/RM/ANK/TRF/PTO/DAH5/377Date - 29/08/2022.**

iii. **Rent agreement, if any –**

iv. **Other Land Possession documents, if any**

7) **IF IT IS EXPANSION WHETHER CCR/EARLIER EC COMPLIANCE GIVEN: Not Applicable**

This is Greenfield Project.

8) **PUBLIC HEARING APPLICABILITY AND ITS COMPLIANCE:**

Main Issues raised by stake holders	Commitments by Project proponent and Action Plan	Action Plan
Not applicable as project falls under GIDC		

Comments:

The public consultation is not applicable as per paragraph 7(i) III (i) (b) of the Environment Impact Assessment Notification-2006

9) **SITING CRITERIA DETAILS (OTHER THAN GIDC): Not Applicable as unit is located in GIDC-Dahej**

Sr. no.	Environmental Sensitivity	Name/Specific details	Siting criteria as per GPCB guidelines dated: 05.06.2022 & its amendment	Aerial Distance in Km
1	Habitat (Residential Area)			
2	Water Bodies			
	River			
	Natural Nallah/Drain			
	Lake/Pond/Wetlands			
	Water supply Tanks/Reservoirs			
	Canal			
3	Protected Monuments/Heritage sites/Public Buildings i.e School, colleges, etc.			
4	National/State Highway OR Express way			
5	Coastal Regulation Zone (CRZ) (In case of Coastal area projects)			

-

Comments:

This unit is located in GIDC area, so siting criteria is not applicable.

10) **A. APPLICABILITY OF GENERAL CONDITIONS AND COMMENTS WITH SPECIFIC CLARIFICATION OF MOEF&CC GUIDELINES:** Any project or activity specified in Category 'B' will be appraised at Central level as Category 'A' if located in whole or in part within 5 Km radius from the project boundary of:-

Sr No	Particulars	Aerial Distance in Km
1.	Protected Areas notified under the Wildlife (Protection) Act 1972 (53 of 1972)	Rvnishi Bird's Sanctury, Ankleshwar @ 43.23 km
2.	CPA/SPA (Critically Polluted Area/Severely Polluted Area) as identified by the CPCB	Critically Polluted Area of GIDC Ankleshwar @ 43.21 km
3	Eco sensitive areas as notified under sub-section (2) of section 3 of EPA-1986	Babul Forest, Taria @ 27.36 km
4	Interstate boundaries and international boundaries	Interstate boundary of Maharashtra @**118 km**

Comments:

As per MoEF&CC's notification dated: 25.06.2014 and as per details submitted by PP, General condition is not applicable.

B. Ensure compliance of category as defined in the amendment to EIA Notification, 2006 vide SO 1599 (E) dated 25/06/2014. i.e. Conditions of small units: (in case of 5 (f) category units and outside the GIDC)

Sr no.	Condition	Compliance with justification
1	Water consumption less than 25 M^3/day;	Not applicable as the unit falls in GIDC
2	Fuel consumption less than 25 TPD;	
3	Not covered in the category of MAH units as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989 as per the legal undertaking submitted with EIA report.	

Comments:

Unit is located within the GIDC so this small scale condition is not applicable

11) **AREA ADEQUACY AND COMMENTS**

Total Land area: 2,89,844.41 m^2

Floor-wise land area break-up table

Sr. No	Components	First Floor (sq m)	Second Floor (sq m)
1.	Office/Admin building/Lab Building	950	950
2.	Production Area	49040	49040
3.	Finished Goods Storage Area	0.0	0.0
4.	Raw Material Storage Area	0.0	0.0
5.	Hazardous waste Storage	0.0	0.0
6.	ETP / STP area	0.0	0.0

7.	Green Belt Area	0.0	0.0
8.	Parking, Road Area and Margins	0.0	0.0
9.	Tank Farm	0.0	0.0
10.	Security Cabin	100	100
11.	Utility Block	10750	10750
12.	OHC	30	30
13.	Open area	0.0	0.0
14.	Others, if any (Canteen)	450	450
Total		**61320**	**61320**

Area Adequacy table:

Sr No	Components	Area required (Sq m)	Area Provided (sq m)	Percentage
1	Office/Admin building/Lab Building	1400	1750	0.60
2	Production Area	39232	49040	16.92
3	Finished Goods Storage Area	2368	2960	1.02
4	Raw Material Storage Area	2944	3680	1.27
5	Hazardous waste Storage	1920	2400	0.83
6	ETP / STP/ MEE/ RO/ spray dryer/etc. area	4160	5200	1.79
7	Green Belt Area	95648	97000	33.47
8	Parking, Road Area and Margins	25000	50810	17.53
9	Tank Farm	6400	8000	2.76
10	Security Cabin	30	100	0.03
11	Utility Block	15000	21625	7.46
12	OHC	15	30	0.01
13	Open area	0	46799.41	16.15
14	Others, if any	0	450	0.16
Total			**289844.41**	**100**

Comments:

SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.

12) **GREEN BELT CONDITIONS AND MEASURES ALONG WITH AREA:**

Total Plot area (Sq meter)	Total Green belt area (Sq meter)	% of Greenbelt
289844.41	**Inside:** 97000m^2 **Outside:**00 m^2	33.47%

Details of copy of permission letter of concern GIDC/ Panchayat/etc. for greenbelt development (in case of greenbelt development outside the premises: Not applicable

Comments:

- The PP shall develop green belt within premises (97000 Sq. m i.e. 33.47 % of the total plot area) as submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

13) **EMPLOYMENT GENERATION:**

Total
575 Nos.

14) **SOURCE OF WATER SUPPLY WITH QUANTITY AND PERMISSION (DETAILS OF CGWA IF BOREWELL**

a) Source of water supply: Dahej Industrial Estate

b) Total Fresh water quantity (KLD): 11,706 KLD

c) **Permission of concerned authority (Name and quantity (in KLD):**Water Connection of 11,706 KLD from GIDC is Applied.

Comments:

PP has Appliedpermission from Dahej Industrial Estate for procurement of water of 11706 KLD which is found satisfactory.

15) **WATER CONSUMPTION RELATED DETAILS WITH COMMENTS**

Category	Total (KLD)	Remarks
(A) Domestic	**78**	**Fresh water**
(B) Gardening	**287**	**Recycle water**
Industrial		
Process	6947 (F)	Fresh water
Washing		
Boiler	6336 (3168 F + 3168 R)	Fresh water + Recycle water
Cooling	1313(F)	
Others	200 (F)	Others. i.e. 200 KLD is used in scrubbing system (scrubbing liquor gets converted to inorganic product like HCl and Sodium Hypochlorite
Industrial Total	**14,796**	(11,628F + 3168 R)
Grand Total (A+B+C)	**15,161**	(11,706 F + 3455 R)

Comments:

PP has submitted the above water consumption which is calculated considering the worst case scenario and in no case the water requirement shall not exceed the same which is found satisfactory.

16) **WASTE WATER GENERATION AND DISPOSAL**

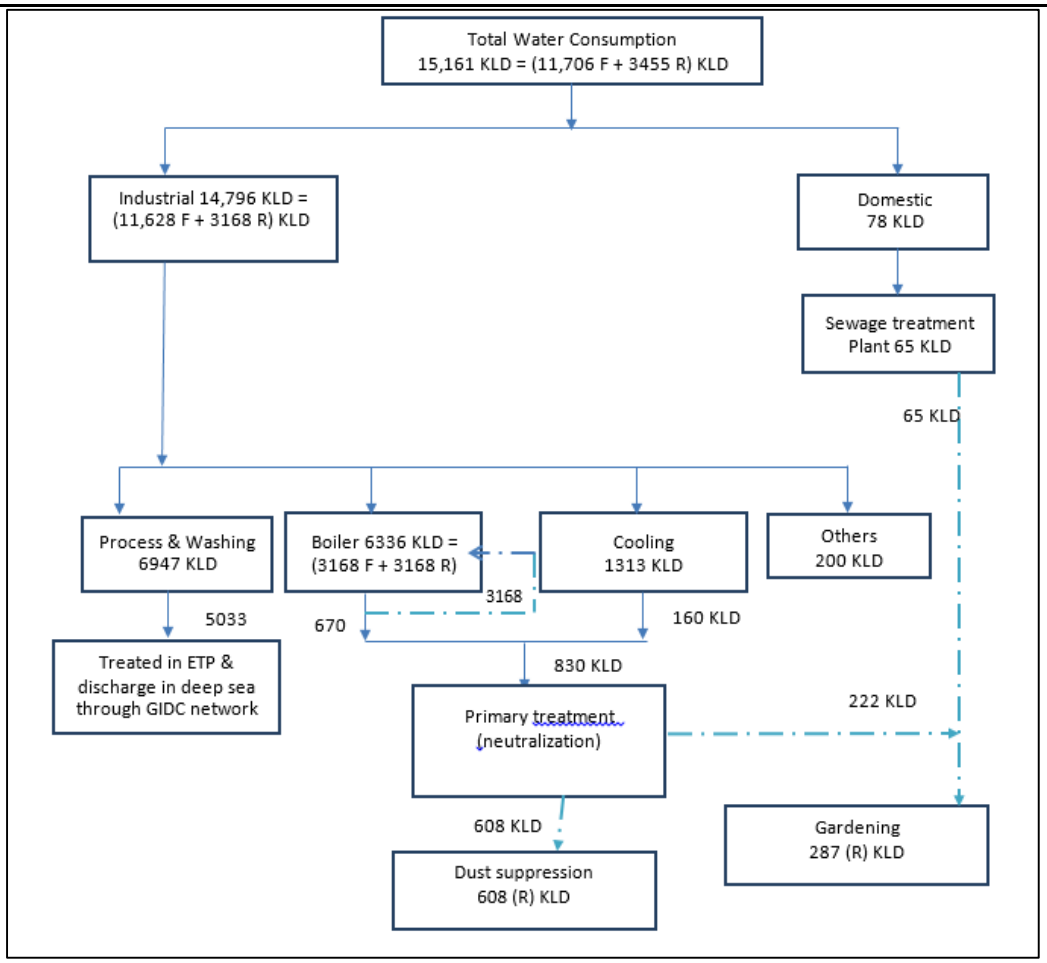
Category	Total (KLD)	Remarks
(A) Domestic	65	To be treated in STP and reused for gardening
Industrial		
Process	5033	Sent to ETP for treatment
Washing		
Boiler	670	Partly Used for coal handling/ ash quenching/ dust suppression. Partly mixed with treated sewage and used Green belt Developmentafter primary treatment.
Cooling	160	
Others	0.0	Others. i.e. 200 KLD is used in scrubbing system goes outside premises. So, does not come to ETP.
Total Industrial waste water	**5,863**	
Total [A + B]	**5,928**	

Justification in case of increase/ drastic reduction in wastewater generation than water Consumption: In manufacturing, 6947 KLD is water consumption and 5033 KLD is effluent generation. The difference is due to process consumption, losses and some products being liquid in nature carries water component. Around 72 % of process water comes as effluent and 28 % is consumed/losses.

Comments:

PP has submitted the above wastewater generation which is calculated considering the worst case scenario and in no case the wastewater generation shall not exceed the same which is found satisfactory.

17) **SIMPLIFIED WATER BALANCE DIAGRAM**



***Note: Others. i.e. 200 KLD** is used in scrubbing system (scrubbing liquor gets converted to inorganic product like HCl and Sodium Hypochlorite and same goes outside premises. So, does not come to ETP).

In manufacturing, 6947 KLD is water consumption and 5033 KLD is effluent generation. The difference is due to process consumption, losses and some products being liquid in nature carries water component. Around 72 % of process water comes as effluent and 28 % is consumed/losses.

18) **BREAKUP OF WASTE WATER DISPOSAL (DOMESTIC & INDUSTRIAL BOTH)**

Sr. no.	Quantity KLD	Facility
1	65	To be treated in STP and reused for gardening
2	5,863	5033 KLD will be treated in ETP and disposed intoGIDC sewer line - Dahej Vilayat Pipeline/common disposal system up to the sea for final disposal at NIO designated point. Remaining 830 KLD used for coal handling/ ash quenching/ dust suppression/ Green belt Development. (287 KLD For gardening + 608 KLD for Dust Suppression.
Total	**5,928**	

Comments for Domestic Effluent:

- Domestic wastewater generation shall not exceed 65 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for gardening and plantation purpose within

premises after achieving on-land discharge norms prescribed by the GPCB.

Comments for Industrial Effluent:

1. Management of Industrial effluent shall be as under:

   - Total 5863 KLD effluent generated from Process & Washing (5033 KLD), boiler (670 KLD) and cooling (160 KLD).
   - 5033 KLD effluent generated from Process & Washing shall be treated in ETP and treated wastewater after conforming prescribed GPCB/CPCB Norms /standards shall be disposed into GIDC sewer line - Dahej Vilayat Pipeline/common disposal system up to the sea for final disposal at NIO designated point.
   - Remaining 830 KLD effluent generated from boiler (670 KLD) and cooling (160 KLD) shall be treated in Primary treatment (Neutralization). And treated wastewater after conforming prescribed GPCB/CPCB Norms /standards shall be reused for coal handling/ ash quenching/ dust suppression/ Green belt Development. (222 KLD For gardening + 608 KLD for Dust Suppression).

19) **MECHANISM AND METHODOLOGY OF STREAM SEGREGATION**

- The industrial effluent generation from the proposed project shall be **5863 KLD**. The effluent will be treated in in-house conventional ETP. **5033 KLD** of treated waste water from process and washing will be disposed in to GIDC sewer line - Dahej Vilayat Pipeline/common disposal system up to the sea for final disposal at NIO designated point(permission applied) and **830 KLD**from Boiler and cooling will be reused in dust suppression, coal handling, ash quenching and greenbelt development. The domestic effluent generated shall be **65 KLD** which shall be treated in STP and then reused in the gardening.

20) **STP AND/OR ETP SPECIFICATION AND DESIGN AND ITS CAPACITY**

STP Capacity& its specification: Capacity of STP : 70 KLD

Domestic waste water (65 KLD) will be sent to STP (Sewage Treatment Plant) and reused for Gardening purpose within premises.

Sr. no.	Name of unit	Number of units	Size (mm)	Capacity (m^3)	Retention time
1	Screen Chamber	1 no.	600x700 X 700	0.42	5 min
2	Oil & Greece Trap	1 no.	1500x700x 800SWD+700	0.84	15 min
3	Equalization Tank	1 no.	2250x2250x2300SWD+700 FB	12.93	5 hrs.
4	MBBR Tank 1	1 no.	Suitable	--	--
5	MBBR Tank 2	1 no.	Suitable	--	--
6	Tube Settler	1 no.	Suitable	--	--
7	Clear Water Tank	1 no.	--	20	7 hours
8	MGF	1 no.	1 m dia X1.2 m h	--	--
9	ACF	1 no.	1 m dia X1.2 m h	--	--
10	Treated Water	1 no.	1400x2500x2300SWD+500	8.75	3.5 hrs.

	Tank		FB		
11	Chlorine Dosing	1 no.	Suitable	--	--
12	Poly Dosing	1 no.	--	--	--
13	Sludge Holding Tank	1 no.	2250x1960x2500SWD+500 FB	11.0	4 hrs.
14	Filter Press	1 no.	--	--	--

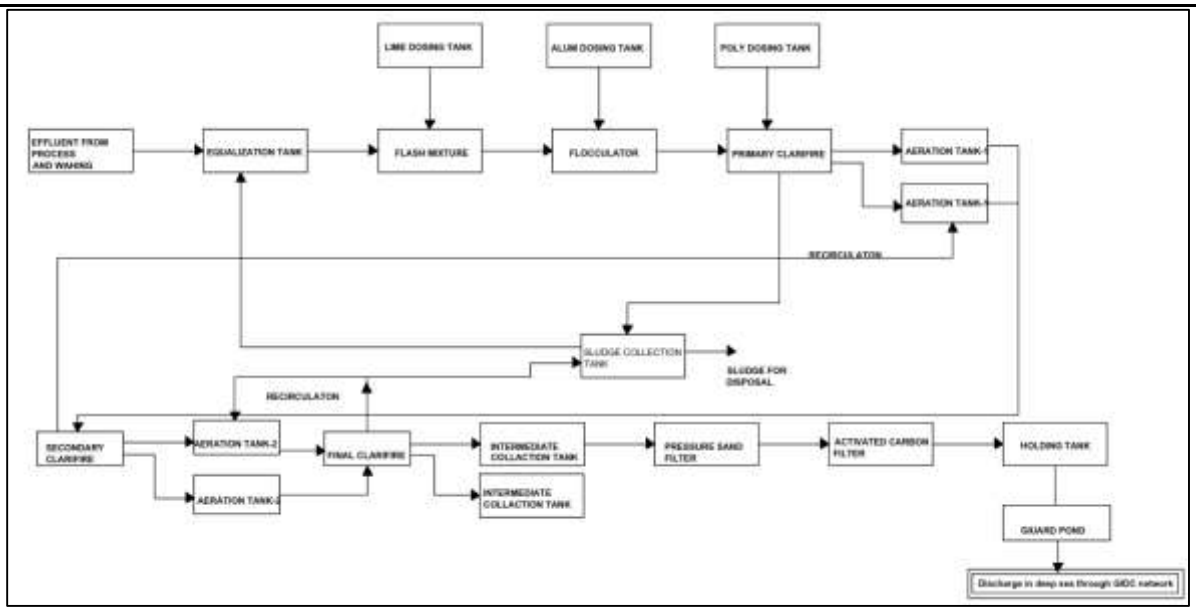
Capacity of ETP & its specification: Capacity of ETP :6000 KLD

Sr. No.	Description of unit	Nos.	Capacity	Retention time
1	Collection Tank	1	1000 KL	4 Hour
2	Flash Mixer	1	20 KL	5 Min
3	Flocculator	1	60 KL	15 min
4	Primary Clarifier	1	500 KL	2 Hours
5	Aeration Tank-1	2	1500 KL	12 Hours
6	Secondary Clarifier	1	500 KL	2 Hours
7	Aeration Tank -2	2	900 KL	9 Hours
8	Final Clarifier	1	400 KL	1.5 Hours
9	Intermediate Collection Tank	2	600 KL	2.5 Hours each
10	Sludge Collection Sump	2	72 KL	--

Specification:

- All industrial effluent from washing and process will be taken by equalization tanks.
- Then it will be directed to flash mixer with lime and then to flocculator with alum for flocculation & coagulation of effluent.
- After that effluent will be sent to primary clarifier-1 and clarifier-2 for Aeration in Aeration tank-1 and Aeration tank-2 respectively.
- The partially treated wastewater Aeration tank-1 and Aeration tank-2 then will be sent to secondary clarifier-1 and clarifier-2 and then it will be finally clarified with NaoCl in intermediate tank and it will be sent to pressure sand filter and activated carbon filter and the treated effluent, finally collected in Holding tank-1 and Holding tank tank-2.
- Treated waste water will be disposed in to GIDC sewer line - Dahej Vilayat Pipeline/common disposal system up to the sea for final disposal at NIO designated point.
- Later on, sludge will be disposed off to common TSDF site.

ETP Diagram



Characteristics of Treated and Untreated Blow-down Effluent

Parameter	Cooling blow down	Boiler blow down	Composite stream	After neutralization
pH	7.5-8.5	6.5-7.0	6.5-7.5	7.0-7.5
COD, mg/L	<100	<100	<100	<100
BOD, mg/L	<40	<40	<40	<30
TDS, mg/L	3000-4000	600-1000	1200-1500	1500-1800

Details of primary treatment for blow down streams: capacity: 1000 KLD

Sr. No.	Description of unit	Nos.	Capacity	Retention time
1	Collection cum reaction Tank	1	1000 KL	> 24 Hours
2	Tube settler	1	80 KL	2 hours
3	Holding tank	1	400 KL	12 hours

21) **TREATABILITY OF WATER**

Parameter	Raw effluent	After Primary Treatment	After Biological Treatment Stage I	After Biological Treatment stage II	After tertiary treatment
pH	6.5-7.0	7.0-7.5	7.0-7.5	7.5-8.0	7.5-8.5
COD, mg/L	1800-2000	800-1200	500-550	300-320	<250
BOD, mg/L	750-800	450-500	180-200	100-125	<1000
TDS, mg/L	3500-4000	3500-4500	3500-4500	3500-4500	<4000

22) **SUMMARY OF WATER USE AND REQUIREMENT OF FRESH/REUSED WATER**

Summary of water requirement	**Quantity** KLD	Remarks

Total water requirement for the project **(A)**	15,161	Fresh + Recycled Water
Quantity to be **recycled (B)**	3455	Recycled Water
Total **fresh water** requirement **(C)**	11,706	Fresh Water
Ensure **Total water requirement = Recycled water + Fresh water i.e. A = B + C**		

23) **REUSE, REDUCE, RECYCLE RECOVERY MEASURES ADOPTED**

a) Reduce

Sr. No.	Item	Quantity	% percentage
1	Water	3455 KLD	29.51%

b) Reuse

Sr. No.	Item	Quantity	% percentage
1.	Water	3168 KLD	29.63%

c) Recycle

Sr. No.	Item	Quantity	% percentage
1.	Water	287 KLD	2.45%

-

24) **FLUE GAS EMISSION**

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
1	Boiler (3 no.) 70 TPH	57.5 mt (each)	Coal	1140 MT/Day	PM SOx NOx	Lime Dosing, Low NOx burner, ESP
2	Boiler (Captive Co-gen 4.5 MW)30 TPH	43.5 mt	Coal		PM SOx NOx	Lime Dosing, Low NOx burner, ESP
3	DG set (6*1010 KVA)	20	HSD	4 KL/day	PM SOx NOx	Adequate Stack Height Provided

Comments:

- The proposed fuel to be used is approved fuel for the requirement of the heat energy and proposed the Air pollution Control measures and stack height so as to achieve the emission norms prescribed by the competent authorities are found satisfactory.

25) **PROCESS GAS EMISSION**

Sr No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
1.	Cl_2 Scrubber (CPVC) (3 nos.)	Cl_2	9.5 (each)	Alkali scrubber with caustic soda lye as a scrubbing media

		2.	Cl_2 Scrubber EMG action (CPVC) (3 nos.)	Cl_2	10.2 (each)	Alkali scrubber with caustic soda lye as a scrubbing media
		3.	Dryer (CPVC) (3 nos.)	HCl	18 (each)	Alkali scrubber with caustic soda lye as a scrubbing media
		4.	Bag Filter at re-slurry tank (CPVC) (3 nos.)	SPM	2.8 (each)	Bag Filter
		5.	Bag Filter attached to product hopper (CPVC) (3 nos.)	SPM	6 (each)	Bag Filter
		6.	Bag Filter attached toproduct bagging machines(CPVC) (3 nos.)	SPM	18 (each)	Bag Filter
		7.	Common Scrubber (6 nos.)	Cl_2, HCl	30 (each)	Two Stage Water Scrubber followed by Alkali scrubber
		8.	2-HCl Scrubber+ Caustic Scrubber (AHF) (2 nos.)	HCl, Cl_2	30 (each)	Two Stage Water Scrubber followed by Alkali scrubber with caustic soda lye as a scrubbing media &ventury
		9.	Tail Gas scrubber (5 Nos.) (AHF Plant)	SO_2, HF	30 (each)	Wet Alkali scrubber with caustic soda lye as a scrubbing media
		10.	Common Scrubber (4 nos.) (AHF Plants)	HCl, Cl_2, SO_2, HF	30 (each)	Water Scrubber followed by Alkali scrubber
		11.	Tail Gas scrubber (14 nos.) (HEC/HEMC/EC)	N_2	30 (each)	Water Scrubber
		13.	Tail Gas scrubber (4 nos.) (MCA plants)	HCl	30 (each)	Water Scrubber followed by Alkali scrubber
		14.	MPP (Chlorination/ Fluorination)	HCl	30	Two Stage Alkali scrubber
		15.	HCl Scrubber System (2 no.) (R-32 Plant)	HCl, Cl_2	30 (each)	Ventury Scrubber
		16.	HCl Scrubber + Caustic Scrubber (2 Nos.)(TFE)	HCl, Cl_2	30 (each)	Two stage water scrubber followed by alkali scrubber with caustic lye as a scrubbing media.
		17.	HCl Scrubber (LiPF6 Plant)	HCl	30	Ventury Scrubber
		18.	Tail Gas Scrubber (PVDF Plant) (2 Nos.)	Cl_2	30 (each)	Alkali Scrubbers

	For PTFE			
19.	HCl Scrubber System	HCl, Cl_2	21	Ventury Scrubber
20.	PTFE Reactor Nitrogen Purging	NO_x,	20	--
21.	Tail Gas Scrubber	SO_2, HF	30	Alkali Scrubbers

Comments:

- The proposed Air pollution Control measures and stack height so as to achieve the emission norms prescribed by the competent authorities are found satisfactory.

26) **FUGITIVE GAS EMISSION**

Sr. No.	Source	Probable Pollutant Emission	Control Measures/ APCM
1	Solvent storage tank	Air pollutant (VOC)	The acids shall be taken from storage tanks to reactor through closed pipeline. Storage tanks shall be vented through trap receiver and condenser operated on chilled water and Alkali scrubber, ventury scrubber and bag filter will be provided as a APCM,
2	Solvent recovery system	Air pollutant (VOC)	Preventive maintenance of flange connections and glands of pumps
3	Handling of raw material bags in storage area	Air pollutant (PM)	The acids shall be taken from storage tanks to reactor through closed pipeline. Storage tanks shall be vented through trap receiver and condenser operated on chilled water.
4	Flange joints of pipeline, pump & motors	Air pollutant (VOC)	General control measures like routine & regular inspection to identify leakage, preventive maintenance and operational maintenance, provision of leak detection and repair system (LDAR).Preventive maintenance of flange connections and glands of pumps
5	Solid raw material transferring to reactor	Air pollutant (PM)	Management to ensure proper handling of the spillages during transfer, charging operation and provision of a Dust Collection System for collection of the air borne material wherever applicable. Relux condenser to be provided over the reactor.
6	Liquid raw material	Air pollutant (VOC)	Relux condenser to be provided over the reactor.

	transferring to reactor		
7	Loading /unloading at storage area	Air pollutant (VOC)	Fugitive emissions in the work zone environment, product raw material storage area shall be monitored regularly

Comments:

The air pollution control measures proposed for fugitive gas emission are found satisfactory.

27) **HAZARDOUS PROCESSES AND ITS SAFETY MEASURES**

Types of process	Safety measures including Automation
Amination	• Atmospheric Ammonia Storage • In case of any emergency in storage system, the feed to the storage should be stopped at once by remote and local Isolations. • Flare should be ignited if it has gone off for required burning of ammonia vapour if situation demands. • Storage Failure Transfer of ammonia from atmospheric storage to new storage & vice-versa and subsequent consumption in plants. In case of ammonia vapour line failure, It should be flared immediately and pressure to be controlled by burning of ammonia vapour. • Any In-flow of ammonia should not be allowed. Inform Ammonia plant Shift In charge and other Plant In charge. • De-energize the compressor and isolate inlet/outlet ammonia line. • Stop incoming feed to storage and flare ammonia for pressure control if required. • Leakage of Ammonia from Storage Plant • Release of Ammonia vapours which may contaminate environment. • In this case, fire water hydrants should be used for spraying for escaping vapours which may lead to increase the quantity of contaminated effluent. • The effluents should not be allowed to enter into storm water drain, if not possible, for this a bund should be provided to the storm water drain. • Contaminated effluent should transfer to ETP with immediate information to neutralize Ammonia. • Inform to ETP operating staff about the emergency and to take necessary action to hold the total effluent for treatment. • Depute Laboratory person to monitor the level of Ammonia near Gates. In case if it is more than the TLV (25ppm), inform chief emergency controller to inform police Station to initiate Offsite Emergency. If tanker unloading is going on than stop unloading, isolate all associated valves. Stop the pump. Process Safety:

		• PLC based process controls and operation of plant will be installed. Temperature and pressure will be monitored and control • Area will be designed Flame Proof type. • Total enclosed process system. • Instrument & Plant Air System. • Safety valve and Rupture disc provided on reactor. • Cooling, Chilling and power alternative arrangement have been Provided on reactor. • PRV station with shut off valve, safety valve provision will be made for Ammination reaction safety. • Flame arrestor will be provided on vent line of reactor and it will be extended above the roof level. • Safe Catalyst charging method will be adopted. • Operators will be trained to implement SOP effectively. • Static earthing and electric earthing (Double) will be provided. • Jumpers for static earthing on pipeline flanges of flammable chemical will be provided. • Ammonia gas detector will be installed for early detection of gas leak. • Open well ventilated and fragile roofs will be provided to on reactor. • Reactor vent extended outside the process area and flame arrestor provided on vent line. • Dumping vessel arrangement will be made. • Dumpers for static earthing on pipeline flanges of flammable chemical will be provided.	
	Bromination	• Store and handle bromine over drip pans drained by a sump that is vented to a scrubber system. • Bromine handling areas should be clearly marked and restricted to qualified and trained personnel only. • Maintain and clean uncontaminated equipment, floors, and work areas. • Immediately contain and clean up all bromine spills. • Wear approved respiratory equipment and protective clothing. • Carefully release anhydrous ammonia vapor to neutralize bromine vapours in the air. Be careful not to over apply anhydrous ammonia. • Pour soda ash solution or hypo solution on the liquid bromine to neutralize. • Using cold water, wash neutralized bromine to a sump for disposal. • Open doors and windows to ventilate. Avoid contact of bromine with strong reducing agents, strong alkalis, metals, wood, paper products, fabric, grease, and oil or other combustible materials.	
	Chlorination	• Enclosed, sealed, and separated from other operating areas; • On the downwind side of the building, away from entrances, windows, louvers, walkways, and other occupied areas; • Protect from extreme heat or direct sunlight. • A shatter-resistant inspection window mounted in an interior wall	

			of the plant; • Doors equipped with panic hardware that provide an easy escape by opening outward to the building exterior; • A ventilating fan that exchanges the air at least once a minute. Run the fan whenever the room is occupied. • An air intake near the ceiling and an exhaust near the floor. Make sure the fan exhausts outdoors and moves air as far as possible away from doors, air inlets, or occupied areas; • Individual vandal-proof switches for the fan and lights located both outside the chlorine room and at the inspection window. Provide signal lights if you can control the fan from more than one location; • The chlorine room should have continuous leak-detection equipment with audible and visual alarms employees throughout the treatment plant can see and hear. • Follow the manufacturer's recommendation for calibrating and testing the equipment. Record your findings. • You can use a rag soaked in concentrated ammonia solution to locate gas leaks at fittings and pipe connections. A white cloud or vapor indicates a leak. • Make sure workers have a Chlorine Institute-approved leak repair kit (Kit A for cylinders and Kit B for containers • Store respiratory protection away from chlorine. • Prepare an escape plan. • Never store chlorine near flammable materials. • Never apply heat directly to a chlorine container. • Purge chlorine pipelines before welding. • Install safety wash stations nearby. Use at least two people when handling chlorine.	
		Hydrogenation	• Total enclosed process system will be provided. • Nitrogen blanketing in hydrogenation reactor. • Safety valve and rupture disc provided on reactor. • Cooling chilling and power alternative arrangement have been made on reactor. • Hydrogen cylinder bank away from the reactor. • PRV station with shut off valve, safety valve provision will be made for hydrogenation reaction safety. • SOP will be follow for hydrogen gas charging in reactor and completion of nitrogen flushing will be done. • Flame arrestor will be provided on vent line of reactor and it will be extended above the roof level. • Safe catalyst charging method will be adopted. • SOP will be prepared and operators will be trained for the same. • Static earthling and electric earthling will be provided. • Jumper for static earthling on pipeline flanges of flammable chemical will be provided. • Hydrogen gas detector will be installed for gas leak. • Lightening arrestor on all chimney and building will be provided. • Safety permit system shall be followed for loading, unloading of hazardous chemical. • Fencing, caution note, hazardous identification board should be provided.	

			• Only authorized person shall be permitted in storage tank area and register will be maintained.	
		Nitration	• Use in ventilated areas and in proximity to eyewash and safety shower stations, hile wearing compatible gloves, safety goggles, and a lab coat. • Avoid contact with metals! Nitric acid is extremely corrosive in the presence of aluminium, copper, and oxides and attacks all base metals. • Store in glass containers that are secured, dry, cool (<23'C/73.4'F), away from sources of ignition, combustible materials, other acids, bases, cyanides, and acetone. Use secondary containers to segregate nitric acid from other acids in your acids cabinet. • Storage containers must be dry, as nitric acid can react with water or steam to produce heat, and toxic, corrosive, and flammable vapours. • Pre-labelled and dated safety-coated glass bottles (PTFE) may be used for nitric acid waste; avoid using empty organic solvent bottles. • Proper waste segregation can help avoid laboratory accidents and explosions. Do not mix nitric acid waste with any other waste streams, including other inorganic acids. • Segregation of nitric acid waste from different processes or experiments is recommended. • In the case of a spill, absorb nitric acid with an inert dry material (earth, sand, or other non-combustible material), place in an appropriate waste container, and neutralize with dilute sodium carbonate.	
		Sulphonation	• Provisions of safety Valve &rupture disk on reactor. • Provisions of auto dumping Vessel. • Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory mask etc. will be provided to operator. • To avoid runaway reaction, TC charging will be done gradually & slowly. • Charging will be done only through closed line and system. Scrubber attached with closed system. • Neutralizing agent will be kept ready for tackle any emergency spillage. • Safety Shower and eye wash will be provided near process area. • Emergency siren and wind sock will be provided. • Tele Communication system and mobile phone will be used in case of emergency situations for communication. • Caution note and emergency first aid will be displayed and train for the same to all employees. • First Aid Boxes will be available in process area. • Emergency organization and team will be prepared as per on site-Off site emergency planning. • Emergency team will be prepared and trained for scenario base emergency. Like Toxic control team, Fire control team, First aid team, communication and general administration team, medical team etc.	

	• Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
Others, Oxidation	• Oxidizers should be stored in a cool, dry place. • Oxidizers must be segregated from organic material, flammables, combustibles and strong reducing agents such as zinc, alkaline metals, and formic acid. Oxidizing acids such as per chloric acid and nitric acid must be stored separately in compatible secondary containers away from other acids.

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28) **SOLVENT MANAGEMENT**

Product No.	Product Name	Solvent	Qty. Used MT/ MT	Qty. Recovered MT/MT	solvent Losses in air (A)	solvent Loss in (Effluent - stripped out) (B)	Distillation Residue (C)	Total Losses (A + B+ C)	Solvent Recovery %
1	Hydroxyethyl cellulose (HEC)/ Hydroxyethyl methyl cellulose (HEMC), Ethyl cellulose (EC)	Solvents(Acetic Acid/ Nitric Acid/ Iso Propyl Alcohol/ Tertiary Butyl Alcohol/ Toluene/ Acetone)	0.63	0.62	0.00	0.01	0.00	0.0126	98
2	3-Amino-4-Chlorobenzotrifluoride	Methanol	3.808	3.70	0.00	0.10	0.01	0.113	97.03
3	N-(4-Trifluoromethyl) Aceto Acetanilide	Ethylacetate	2	1.80	0.00	0.18	0.02	0.1	95
4	5-Amino- 3-Cyano-1-[2,6-Dichloro-4-(Trifluoromethyl)-Phenyl]-Pyrazole	Methylene dichloride (MDC)	3.6	3.42	0.00	0.17	0.01	0.18	95
5	2,3,4,5-Tetrafluorobenzoyl Chloride	Sulfolane	3.51	3.37	0.00	0.13	0.01	0.14	96.01
6	Lithium Hexafluoro Phosphate (LiPF6)	Acetonitrile	2	2	0.0	0.0	0.0	0.0	100

29) **VOC EMISSION AND MITIGATION MEASURES FOR ACHIEVING MAXIMUM SOLVENT RECOVERY AND MINIMUM VOC GENERATION**

Sr. No.	Emission Source	Probable Pollutant Emission	Control measures
1	Solvent Storage are	VOC (Air Pollutant)	• Management to ensure proper handling of the spillages during transfer, charging operation and provision of a Dust Collection System for collection of the air borne material wherever applicable. • Preventive maintenance of flange connections and glands of pumps. • Management will also ensure proper usage of the Personnel Protective Equipment by the workers. • Regular Work Place Monitoring, Ambient Air, Stack Air Monitoring to be done. • Proper identification on discharge line. • Providing arrangements to avoid static sparks. • Take care of adverse weather conditions. • Providing Explosion Vents in spaces with possibility of air-vapour mixtures. Smoke detectors or heat detectors to be provided in storage or process area.
2	Solvent Recovery System	VOC (Air Pollutant)	• Vacuum distillation Close handling system. There will be recovery of more than 95-98% solvent.
3	Solvents & Liquid raw material transferring to reactor	VOC, Acid fumes (Air Pollutant)	• Feeding of Solvents & liquid raw materials will be carried out by closed pipeline and mechanical seal pump
4	Flange joints of pipeline, pump & motors	VOC	• Management to ensure proper handling of the spillages during transfer, charging operation and provision of a Dust Collection System for collection of the air borne material wherever applicable. • Preventive maintenance of flange connections and glands of pumps. • Management will also ensure proper usage of the Personnel Protective Equipment by the workers. • Regular Work Place Monitoring, Ambient Air, Stack Air Monitoring to be done. • Proper identification on discharge line. • Providing arrangements to avoid static sparks. • Take care of adverse weather conditions. • Providing Explosion Vents in spaces with possibility of air-vapour mixtures. Smoke detectors or heat detectors to be provided in storage or process area.

Comments for Sr No: 27,28 and 29:

- Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.

- Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

30) **LDAR PROPOSED**

S.N.	Component	Frequency of monitoring	Repair preventive maintenance schedule
1.	Valves / Flanges	Quarterly (semi-annual after two consecutive period with < 2% leaks and annual after 5 periods with < 2% leaks)	Leak from open ended line, sampling connection, compressors are usually fixed by modifying equipment. Emission from pumps and valves can be reduced by use of leak less valves and seal less pumps.
2.	Pump seal	Quarterly	Leak from pumps can also be reduced by using dual seals with or without barrier fluid.
3.	Compressor seals	Quarterly	Leak from open ended line, sampling connection, compressors are usually fixed by modifying equipment. Emission from pumps and valves can be reduced by use of leak less valves and seal less pumps.
4.	Pressure relief devices	Quarterly	
5.	Pressure relief devices (after venting)	Within 24 hrs.	--
6.	Process drains	Annually	Repair shall be started within 5 working days and shall be completed within 15 working days after detection of leak.
7.	Components that are difficult to monitor	Annually	
8.	Pump seals with visible liquid dripping	Weekly	Immediately
9.	Any component with visible leaks	Weekly	Immediately
10.	Any component after repair / replacement	Within a week	-

The Following methodology to be adopted during LDAR study:

1	Identification of component	10	Contactor accountability
2	Leak definition	11	Internal leak definitions
3	Monitoring components	12	More frequent monitoring
4	Repairing components	13	First attempt at repair
5	Recording	14	Delay repair compliance assurance
6	Root cause of noncompliance by following	15	Electronic monitoring and storage of data
7	Written LDAR program	16	QA/QC of LDAR data
8	Training	17	Calibration drift assessment
9	LDAR Audit	18	Record maintenance

31) **LDAR FOR SPECIFIC SOLVENT**

Sr. No.	Solvent Name	Type of Storage	Mode of Transfer	Charging	Sources of Leakage	Mitigation Measure For find out leakages	Mitigation Measure (If leakages shall be occur)	Action taken for prevention of leakages
1.	Acetic Acid/ Nitric Acid/ Iso Propyl Alcohol/ Tertiary Butyl Alcohol/ Toluene/ Acetone, Methanol, Ethyl acetate, Methylene dichloride (MDC), Sulfolane, Acetonitrile	Drum/Carboys	By Pump & Fix Pipe line	Direct Vessel	• Leak from Valve (failure of the valve packing & O-ring) • Leak from pump (Occur at seal) • Leak from tank • Leak from Connectors • Leak from open ended lines	• For using Gas Detector by PID Sensor technology.	• If valve shall be leak stop pumping system and replace with new valve. When pump seal shall be leak immediately stop solvent transfer and immediately repair or replace with new seal.	• Check Thickness of tank • Using fix pipeline for solvent transfer • Minimum use of Connectors & Joins • Provided sufficient Space (Solvent Unloading area) for Solvent Tanker

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32) **HAZARDOUS WASTE MANAGEMENT MATRIX**

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
1	Process waste/ residue	Process	20.3	110000	Collection, Storage, Transportation, Disposal at co-processing /CHWIF.
2	ETP Sludge	ETP Plant	35.3	15000	Collection, Storage, Transportation, Disposal at co-processing /TSDF.
3	Discarded Containers/Barrels	Raw material Handling	33.1	600 MT (30,000 Nos.)	Collection, Storage, Transportation, Sale to registered recycler.
4	Used oil	Machineries & DG Set	5.1	200	Collection, Storage, Transportation, reused as lubricant in plant machinery or Sale to registered recycler.
5	Spent Resin	From DM/RO	35.2	400	Collection, Storage, Transportation and

					Sale to registered recycler.
6	Insulation Waste	From Boilers	S-1	300	Collection, storage, transportation and disposal at co-processing / TSDF.
7	Spent Solvent	Process	20.2	29639.7	Collection, Storage, maximum utilization, recovery at site, Reuse and Recover spare quantity will be sent to under Rule-9 or co-processing. **Note: Total Solvent 29639.7 MT/Annum out of which 25639.7 MT/Annum Recovered solvent and will be reused in next batch/Plant premises, 4000 MT/Annum will be sent to under Rule-9 or co-processing.**
8	Silica Waste	Process	35.3	10000	Collection, storage, transportation and disposal at common TSDF site.
9	Spent Sulphuric Acid	Process	B-15 of Sch.-II	10000	Collection, Storage, Transportation, Disposal under Rule-9.
10	Spent Catalyst	Process	26.5	10000	Collection, storage, transportation and disposal at re-cycler/ TSDF.
11	Contaminated PPE's	Manufacturing Process	--	50	Collection, storage, transportation and disposal at common TSDF site.
12	Sodium Hypo Chlorite	Generated along with Chlorinated poly vinyl chloride product	B-7 of Sch.-II	2310	Collection, storage, transportation and Disposal by selling it to actual user having Rule-9 permission.
13	Hydrochloric Acid	Generated along with Anhydrous Hydrofluoric Acid (AHF), Poly vinylidene Fluoride (PVDF), (R-32 Difluoromethane HFC- 32)	26.3	22653	Collection, storage, transportation and Disposal by selling it to actual user having Rule-9 permission.

14	Gypsum ($CaSO_4$)	Generated along with Anhydrous Hydrofluoric Acid (AHF)	35.3	6900	Collection, storage, transportation and Disposal by selling it to actual user having Rule-9 permission / for Co-processing.
15	Hydrofluoro silicic acid		B-15 of Sch.-II	1020	Collection, storage, transportation and Disposal by selling it to actual user having Rule-9 permission.
16	Scrubbing Bleed liquor	process	Sch-1/28.1	200	Collection, Storage and converted to inorganic products like HCl, Sodium Hypochlorite and sell to actual user having Rule-9 permission.

Comments:

- Hazardous waste management includes collection, storage, transportation and disposal at TSDF, captive/ common incineration, co-processing/ pre-processing, sold to authorized actual users having Rule-9 permission and recycle/ reuse of waste. SEAC examined the details provided and found it as per requirement.

33) **NON-HAZARDOUS WASTE MANAGEMENT MATRIX**

Sr. no.	Type/Name of non-hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Quantity (MT/Annum)	Management of HW
1	STP Sludge	STP	200MT/Annum	Will be collected, stored and finally utilized as manure within premises.
2	Fly Ash	Boiler, Power plant	36000 MT/Annum	Will be collected, stored and finally sell to Brick Manufacturing and Cement manufacturing Unit.

- The quantity of fly ash is consumed by Ultratech cement Limited manufacturing unit. The MOU of the Disposal of Fly Ash is already Attached.

Comments:

- Other wastes management includes collection, storage, transportation and disposal by selling to actual users and recycle / reuse of waste. SEAC examined the details

provided and found it as per requirement.

34) **STORAGE SAFETY MEASURES**

a) Storage of Hazardous chemicals in Tanks

Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
TANK FARM (NON-PESO)				
1	Ammonium hydroxide	25 KL	1	Corrosive
2	Methylene Chloride	50 KL	1	Flammable
3	Hydrogen chloride (HCl)	10 KL	1	Corrosive
4	Hydrofluoric Acid	50 KL	1	Corrosive
5	Methylene Dichloride(MDC)	100 KL	1	Toxic
6	Oleum	30 KL	2 (1 Tank as Spare Tank)	Toxic
7	Sulphuric Acid 98%	100 KL	1	Corrosive
8	Thionyl chloride	25 KL	1	Toxic, Corrosive
9	2-(Trifluoromethyl) benzoyl chloride	35 KL	1	Irritant
10	HCF-22	20 KL	1	Irritant
11	2,3,4,5-Tertachlorobenzonitrile	35 KL	1	Irritant
12	2,3,4,5-Tetrachlorobenzo trichloride	50 KL	1	Irritant
13	Ethyl 2,3-dicyanopropaionate	15 KL	1	Irritant
14	4-Chloro-3-Nitro Benzotrifluoride C	35 KL	1	Irritant
15	3,4-Dichlorobenzotrichloride	35 KL	1	Corrosive
16	3,4-DichloroToluene	25 KL	1	Corrosive
17	2-methyl benzoic acid	20 KL	1	Irritant
18	3.4.5-Trichloro benzo trichloride	35 KL	1	Irritant
19	4-(trifluoromethyl) aniline	20 KL	1	Flammable, Corrosive
20	4-Chloro Benzotrichloride	25 KL	1	Irritant
21	4-fluorobenzaldehyde	20 KL	1	Irritant
22	4-fluorobenzoyl chloride	30 KL	1	Corrosive
TANK FARM (PESO)				

1	Bromine	10 KL	1 + (1 Spare Tank)	Toxic
2	Chlorine	Tonner 27 Ton (30 x 900 KG.)	30	Toxic
3	Chloroform	20 KL	01	Toxic
4	m-Xylene	15 KL	01	Flammable
5	Ammonia	10 KL	01	Flammable, Toxic
6	Hydrogen	2 KL	50-to-100-cylinder bank	Flammable
7	Ethyl Chloride	15 KL	01	Flammable
8	Ethyl acetate	30 KL	01	Flammable
9	Ethylene Oxide	50 KL	01	Flammable
10	Fluorobenzene	15 KL	01	Flammable
11	Methanol	100 KL	1	Flammable, Toxic
12	Nitric Acid/ Acetic acid/ IPA/Toluene/Acetone	70 KL	2	Flammable/ Corrosive
13	1,1-difluoroethane (VDF-monomer)	20 KL	1	Flammable
14	Dimethyl Ether	20 KL	2	Flammable
15	4-Amino benzotrifluoride	20 KL	1	Flammable
16	Methyl Chloride	200 KL	1	Flammable
17	4-fluoroToluene	30 KL	1	flammable
18	4-chloro-benzotrifluoride	35 KL	1	Flammable
19	2,5-dichloro toluene	25 KL	1	Flammable
20	Diketene	10 KL	1	Flammable
21	Dimethyl dichlorisilane	300 KL	2	Flammable, corrosive
22	Pivaloyl Chloride	25 KL	1	Flammable, Corrosive

Safety Measures for PESO Underground storage tank farm:Hazardous raw material to be stored in underground tanks

b) <u>Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.</u>

Sr. no	Name of Chemical	Capacity of Drum/Bag/ Cylinder/ Glass Bottle	Number of Drum/Bag/ Cylinder/ Glass Bottle	Hazardous Characteristics of Chemical
1	1,3-Hexachloroxylene	40 kg	100	Flammable
2	2-(Trichloromethyl)ben	500 Kg	100	Irritant

	zoic acid			
3	2,3,4,5-Tertafluorobenzoic acid	500 Kg	50	Irritant
4	2,5-Dichloro Benzotrichloride	500 Kg	100	Irritation, Corrosive
5	3-Bromo 4- fluoro benzaldehyde	250 Kg	100	flammable, irritant
6	4-fluorobenzoic acid	250 Kg	100	Irritant
7	4-methylaniline	500 Kg	50	slight Flammable, Corrosive
8	Acetic Anhydride	250 Kg	100	Flammable, Corrosive
9	Activated Carbon	20 Kg	50	Flammable, Irritant
10	Aluminium	50 Kg	50	Flammable
11	Calcium Oxide	100 Kg	50	Corrosive, Irritant
12	Flourspar	50 Kg	100	Irritant
13	Lithium Carbonate	100 Kg	35	Irritant
14	Lithium Fluoride	100 Kg	24	Irritant
15	Molecular sieve	20 Kg	10	Irritant
16	Na2CO3 (Soda Ash)	500 Kg	70	Irritant
17	Phosphorous Pentachloride	500 Kg	40	Irritant
18	Pivalic Acid	500 Kg	40	Irritant
19	Potassium Chlorate/	100 Kg	600	Corrosive
20	Pulp	500 Kg	100	Flammable
21	Si (Silicon powder)	500 Kg	200	Flammable
22	Sodium Bicarbonate	500 Kg	20	Irritant
23	Sodium nitrite	500 Kg	40	Corrosive & Toxic
24	Sodium Phenolate	500 Kg	50	Corrosive
25	Sodium tetrafluoro borate	30 Kg	100	Corrosive

Safety measures for Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE CHEMICALS	• Earthing & bonding provision • Dyke wall provisions • Provisions of safety valves, breather valves, level indicators, vent in the storage tanks • Flame proof electrical installation • Provisions of detection and alarming system • Using of Spark proof tools • Separate & isolated storage area • Regular Training for safe material handling, fire & safety, Mock drill • Display of Safety Boards, MSDS near storage area • Using of PPE like Safety glasses, hand gloves, safety shoes/ gumboot, Apron, chemical cartridge masks, SCBA set etc. • Provision of Fire protection system-Fire extinguishers, Hydrant system, sprinklers, sand buckets etc. • Following of SOP, Policies, Hot work permit system • Regularly painting & maintenance of tanks, valves, pipelines,

		equipments • Trained and experienced operators and staff • Spark arrestors in vehicle exhaust • Lightening arrestor on all chimney and building will be provided. Safety permit system shall be followed for loading, unloading of hazardous chemical.
	CORROSIVE CHEMICALS	• Do not handle corrosive chemicals when working alone. • Immediately close all containers of corrosive chemicals after use. • Due to the risk of splashes and equipment failures, limit the use of syringe/needles to perform transfers of corrosive chemicals in volumes of no greater than 5 ml. • Perform liquid transfers slowly using a funnel to minimize slash, splatter, and spills. • Do not pour water into acid. Slowly add acid to water while carefully stirring. Some corrosive chemicals will generate heat and/or release gas on contact with water. • Reactions involving corrosive chemicals are often very exothermic. Use heat-resistant labware and allow extra volume in your vessel to account for expansion and/or foaming. It may be necessary to pre-cool solutions and cool while mixing or reacting.
	TOXIC CHEMICALS	• Keep away from sources of ignition, tight closed container and dyke provision to storage area, storage area cool and dry • Safety boards displayed on the area • Follow compatibility chart and MSDS for storage and usage • For accidental contact if anyone feels unwell, seek medical advice immediately • Handling of material with PPE like Safety glasses, hand gloves, gumboot, Apron etc. • Good ventilation must be provided. • Bonding and grounding provided for transferring liquid. • MSDS of all material keep available.
	REACTIVE CHEMICALS	• Barrel Must Be Labeled • Heat/Spark, Flame, Wear PPE And Self Contain Breathing Apparatus • Containers and equipment used for storage and processing of corrosive material will be corrosion resistant Avoid Leakages, Barrel Tightly Closed, Ground/Bond Barrel and Receiving Equipment
	Others, if any	
	-	

35) **FIRE LOAD CALCULATION**

Total Plot Area:	2,89,844.41 sq. m
Area utilized for plant activity:	95235 sq. m
Area utilized for Hazardous Chemicals Storage:	2400sq.m
Number of Floors:	3
Water requirement for firefighting in KLD:	238.087 KLD
Water storage tank provided for firefighting in KL:	5000 KL
Details of Hydrant Pumps:	Electrical, Jockey & Diesel fire

	pump will be provided
Nearest Fire Station :	SEZ Fire Station @ 4.03 km
Applicability of Off Site Emergency Plan:	Not Applicable

Comments:

The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 5000 KL. SEAC found it as per the requirement.

36) **WORKERS SAFETY AND OCCUPATIONAL HEALTH MANAGEMENT**

Number of permanent Employee:	575
Number of Contractual person/Labour:	120
Area provided for OHC:	30Sq.m
Number of First Aid Boxes:	30 nos.
Nearest General Hospital:	Dahej Health & welfare society Hospital@ 2.8 km
Name of Antidotes to be store in plant:	Fomepizole, Ethanol, milk of magnesia or soda waterand other adequate Antidotes will be stored

Comments:

Project proponent has provided PPEs, Occupational health center (OHC) with adequate provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

37) **DETAILS OF MEMBERSHIP OF COMMON FACILITIES:**

Sr. No.	Membership for Common Facility	Membership Certificate issuing agency along with Date of Issue and validity of membership
01	CETP	**Name of CETP:** Not Applicable **Date of Issue of membership along with validity: --** **Capacity of CETP (KLD): --** **Allotted Capacity (KLD) to member unit: --** **Spare Capacity (KLD) of CETP: --**
02	TSDF site	**Name of TSDF:** Bharuch Enviro Infrastructure Limited (BEIL) **Date of Issue of membership along with validity: request acknowledged on** 31/07/2023 **Capacity of TSDF (MT):** **Allotted Capacity (MT) to member unit:** **Spare Capacity (MT) of TSDF:**
03	Common Hazardous Waste Incineration Facility	Acknowledgement for Incineration Facility is received on 31/07/2023.
04	Common Spray Drying Facility	Not Applicable
05	Common MEE Facility	Not Applicable
06	Common	Unit has applied for membership certificate and

	Conveyance System	Acknowledgement for discharge of treated effluent into GIDC drain is received on 31/07/2023.
07	PESO permission	Will be obtained
08	FIRE permission	Will be obtained
09	Health Certificate	Will be obtained at relevant stage

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38) **EMERGENCY MEASURES PROPOSED AND PREPAREDNESS ACTION PLAN**

Logistic facility /Tel Nos.	Destination	Distance Km.
Nearest Hospital	Dahej Health & welfare society Hospital	2.8 km, S
Fire Brigade (101)	SEZ Fire Station	4.03 km, S
Nearest Police Station (100)	Dahej Police Station	4.16 km, WSW

39) **CER ACTIVITIES PROPOSED YEAR WISE/ IN CASE OF EXPANSION ANY ADDITIONALITY SUGGESTED AND ITS COMPLIANCE (AS PER THE MOEF & CC GUIDELINES)**

Total cost of Project (Rs in Crores)	Total Cost of CER (Rs in Lakhs)	Percentage (%)
700 Crore	700 in Lakhs	1.00 %

Sr No	Activities	Name of Villages	Cost (Rs in Lakhs)
1	Tree plantation and provided tree guard in nearby villages 1450 trees X 300 Rs. Per tree with tree guard. = **4,35,000/-** Maintenance Cost: 2000/- (2000*1450) = **29,00,000/-** Water Tanker Charges/Day= Rs. 1000/- (1000*1450)=**14,50,000/-** **Gardener Charges for 1 year = 2,15,000/-**	Dahej, Jolva, Vav villages	50
2	Rooftop Rain water harvesting in nearby villages	Dahej and Samatpor villages	80
3	Installation of solar panelled street lights in Dahej **village** - **200 KW** **Cost of Solar Energy: -** The cost of 1 KW solar panel system is approximately Rs. 50,000 per KW. Number of solar panels - 400 no. i.e. 500 W/1 Solar panel, to be provided for Street lights **(@ 2 panels /KW)** Therefore, total cost for solar panels = **Rs. 1,00,00,000/-**	Rahiad, Dahej, Galedna, Samatpor, Sambheti villages	100
4	Provision of solar Tree contribution to nearby farmers **Cost of Solar Trees: -** The cost of 1 solar tree system is approximately Rs. 7,50,000 **Number of solar Tree** - 20 nos. i.e. 330 W/1 Solar tree **(@ 35 Panels /Tree)**	Rahiad, Harinagar & Suva villages	150

	Therefore, total cost for solar panels = Rs. 1,50,00,000/- (Note: Maintenance cost will be handled by farmers themselves.		
5	Arranging medical camp for people of nearby villages and Providing medicines to nearby health centers	Dahej and Vadadla villages	40
6	Installation and maintenance of percolating well to recharge the ground water (Rs. 2,50,000/- x 28 Nos.) in nearby villages	Suva, Janidara and Kadodara villages	70
7	Provide Energy efficient Equipment such as LED light bulbs	Narnali, Vadadla, Vav and Kadodara	60
8	Installation of Biogas Plant for providing Natural gas in nearby Villages	Ambetha and Jageshwar	150
	Total	--	**700**

Comments:

As per MoEF&CC's OM dated: 01.05.2018 and 30.09.2020, SEAC examined that the proposed cost of CER i.e 1 % (Rs 700 Lakhs) which is as per the requirement.

40) **ENVIRONMENT MANAGEMENT PLAN (ESPECIALLY WITH CEPI AND NON CEPI GUIDELINES, AS MAY BE APPLICABLE)**

Sr. No	Unit	Detail	Capital Cost (Rs. In Lakhs)	Total Recurring Cost (Rs. In Lakhs per Annum)
1	Wastewater	Effluent treatment Plant + STP (Manpower, chemical cost etc.)	1800	180
2	Air	Installation of stacks, APCM, covered coal shed	300	90
3	Hazardous Management	Hazardous waste Storage area + Membership certificate	200	180
4.	Fire & Safety	Fire Hydrant & pipeline system and fire sensors & alarm safety Equipment/PPEs, fire proximity suit	500	120
5	Green Belt Development	Sampling & Manure, Gardeners cost	89.72	18
6.	Occupational Health	OHC, Health check-up of workers + Tie up with doctors	40	18
7.	Noise Control	Barricade + Silencers Acoustic enclosure, Rubber packing at vibrating part Machinery, PPE kits	12	6
8.	VOC Control & LDAR	VOC control & LDAR + DCS System	600	90
9	Environment Monitoring Program	Cost of monitoring of various Environmental parameters (i.e. water, air and haz.), Risk analysis, safety audit	30	18

10	CER Activity	As per list	700	--
11	Cost of conservation plan of Schedule-I species, if any	Not applicable, as a no schedule – I species found in the study area	--	--
Total			**4271.72**	**720**

Comments:

The overall environment management plan (EMP) provided for capital and recurring cost for wastewater treatment, air emission control, noise control, hazardous waste disposal, fire & safety, occupational health, environment monitoring program, green belt and corporate environmental responsibility was deliberated and found satisfactory.

41) **RECOMMENDATIONS OF SEAC**

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and **unanimously** recommends the same to SEIAA for environmental clearance."

Conditions with which Environment Clearance is recommended:

42) **GENERAL CONDITIONS**

Construction Phase

a) "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades.
b) "No uncovered vehicles carrying construction material and waste shall be permitted."
c) "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured."
d) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).
e) No excavation of soil shall be carried out without adequate dust mitigation measures in place.
f) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.

g) Grinding and cutting of building materials in open area shall be prohibited.

h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.

i) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. Unit shall install CEMS **[Continuous Emission Monitoring System]** in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. **[For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].**
2. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
3. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
4. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
5. All measures shall be taken to avoid soil and ground water contamination within premises.
6. **Safety & Health:**

   a) PP shall obtain PESO permission for the storage and handling of hazardous chemicals. (If applicable).

   b) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.

   c) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.

   d) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.

   e) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.

f) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.

g) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.

h) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.

i) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.

j) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.

k) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

l) The projectmanagement shall prepare a detailed Disaster ManagementPlan (DMP) for the project as per the guidelinesfromDirectorateof IndustrialSafety and Health.

m) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals.

n) Provide double earthling to solvent storage tanks: (1) Unit shall provide effective fire hydrants, water monitors & foam application system at solvent storage tank farm area. (2) Unit shall provide adequate safety system such as water sprinklers, water curtains, foam pouring system etc. to restrict cascade fire emergency in solvent tank farm.

o) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.

p) Unit shall provide water sprinkler and bund/ dyke wall to ammonia storage tank.

q) Unit shall provide a spare tank with emergency transfer system and bund/ dyke wall to Br2 storage tank.

r) Unit shall provide safety valve & rupture disc to the Hydrogenation vessel.

s) Unit shall provide chlorine leakage control emergency kit and FRP hood with scrubber system for chlorine safety.

t) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for nitration vessel safety.

u) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for exothermic reaction vessel safety.

v) Unit shall provide a spare tank with emergency transfer system and bund/ dyke wall to Oleum storage tank.

WATER

7. Total water requirement for the project shall not exceed 15,161 KLD. Unit shall reuse 3455 KLD of treated effluent within premises. Hence, fresh water requirement shall not exceed 11,706 KLD and it shall be met through Dahej Industrial Estatewater supply only. Prior permission from concerned authority shall be obtained for procurement of water.
8. The industrial effluent generation from the project shall not exceed 5,863 KLD.
9. Management of Industrial effluent shall be as under:
    - Total 5863 KLD effluent generated from Process & Washing (5033 KLD), boiler (670 KLD) and cooling (160 KLD).
    - 5033 KLD effluent generated from Process & Washing shall be treated in ETP and treated wastewater after conforming prescribed GPCB/CPCB Norms /standards shall be disposed into GIDC sewer line - Dahej Vilayat Pipeline/common disposal system up to the sea for final disposal at NIO designated point.
    - ✓ Remaining 830 KLD effluent generated from boiler (670 KLD) and cooling (160 KLD) shall be treated in Primary treatment (Neutralization). And treated wastewater after conforming prescribed GPCB/CPCB Norms /standards shall be reused for coal handling/ ash quenching/ dust suppression/ Green belt Development. (222 KLD For gardening + 608 KLD for Dust Suppression).
10. PP shall obtain necessary persmission from the GIDC/ Competent Authority for the discharge of treated wasteweater in to common GIDC Wastewater Conveyance line.
11. Domestic wastewater generation shall not exceed 65 KL/day for proposed project and it shall be treated in STP.It shall not be disposed off into soak pit.Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
12. During monsoon season when treated sewage may not be required for the plantation / Gardening / Green belt purpose, it shall be stored within premises. There shall be no discharge of waste water outside the premises in any case.
13. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
14. PP shall ensure that, there shall be no accumulation/ ponding of treated wastewater while its reuse
15. Treated waste water shall be sent to GIDC sewer line - Dahej Vilayat Pipeline/common disposal system up to the sea for final disposal at NIO designated point after

conformingprescribed norms by GPCB and to ensure that there shall be no adverse impact on Human Health and Environment.

16. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.
17. Unit shall provide STP and ETP with adequate capacity.
18. The unit shall provide metering facility at the inlet and outlet of ETP, resue line and maintain records for the same.
19. Proper logbooks of ETP; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent sent to common facilities; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

20. Unit shall not exceed fuel consumption for Boilers and D G Set as per the point no. 24 as mentioned above.
21. PP shall use approved fuels only as fuel in Boilers and D G Set.
22. Unit shall provide adequate APCMs with flue gas generation sources to achieve the norms prescribed by GPCB.
23. Unit shall provide adequate APCMs with process gas generation sources as the point no. 25 as mentioned above.
24. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety& Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
    - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
    - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
25. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
26. For control of fugitive emission, VOCs, following steps shall be followed :
    a. Closed handling and charging system shall be provided for chemicals.
    b. Reflux condenser shall be provided over Reactors / Vessels.
    c. Pumps shall be provided with mechanical seals to prevent leakages.

d. Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.

27. Solvent management shall be carried out as follows:
    - ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
    - ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
    - ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
    - ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
    - ✓ Solvents shall be stored in a separate space specified with all safety measures.
    - ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
    - ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.
28. Close loop solvent recovery system with adequate condenser system shall be provided to recover solvent vapours in such a manner that recovery shall be maximum and recovered solvent shall be reused in the process within premises.
29. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
30. Regular monitoring of ground level concentration of PM10, PM2.5, SO2, NOx, HCl, Cl2, HF, $N_2$and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

31. All the hazardous/ solid waste management shall be taken care as per the point no. 32 and 33 as mentioned above.
32. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
33. Unit shall explore the possibilities for environment friendly methods like co-processing

of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.

34. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
35. STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.
36. Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.
37. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

38. The PP shall develop green belt within premises (97000 Sq. m i.e. 33.47 % of the total plot area) as submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultationwith GPCB.

OTHERS:

39. The project proponent shall carry out the activities of amount of Rs.700 Lakhs (Tree plantation and provided tree guard in nearby villages 1450 trees X 300 Rs. Per tree with tree guard.= 4,35,000/- Maintenance Cost: 2000/- (2000*1450) = 29,00,000/- Water Tanker Charges/Day= Rs. 1000/- (1000*1450)=14,50,000/- Gardener Charges for 1 year = 2,15,000/- at Dahej, Jolva, Vav villages, Rooftop Rain water harvesting in nearby villages at Dahej and Samatpor villages, Installation of solar panelled street lights in Dahej village - 200 KW Cost of Solar Energy: - The cost of 1 KW solar panel system is approximately Rs. 50,000 per KW. Number of solar panels - 400 no. i.e. 500 W/1 Solar panel, to be provided for Street lights (@ 2 panels /KW) Therefore, total cost for solar panels = Rs. 1,00,00,000/- at Rahiad, Dahej, Galedna, Samatpor, Sambheti villages, Provision of solar Tree contribution to nearby farmers Cost of Solar Trees: - The cost of 1 solar tree system is approximately Rs. 7,50,000 Number of solar Tree - 20 nos. i.e. 330 W/1 Solar tree (@ 35 Panels /Tree) Therefore, total cost for solar panels = Rs. 1,50,00,000/- (Note: Maintenance cost will be handled by farmers themselves at Rahiad, Harinagar & Suva villages, Arranging medical camp for people

	of nearby villages and Providing medicines to nearby health centers at Dahej and Vadadla villages, Installation and maintenance of percolating well to recharge the ground water (Rs. 2,50,000/- x 28 Nos.) in nearby villages at Suva, Janidara and Kadodara villages, Provide Energy efficient Equipment such as LED light bulbs at Narnali, Vadadla, Vav and Kadodara and Installation of Biogas Plant for providing Natural gas in nearby Villages at Ambetha and Jageshwar) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent. 40. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Excel Enviro tech and submitted by the project proponent and commitments made during presentation before SEAC and proposed In the EIA report shall be strictly adhered to in letter and spirit.
43)	**COMPLIANCE AND ADMINISTRATION/APPEAL OF EC ORDERS** 1. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded. 2. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities. 3. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government. 4. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions. 5. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded. 6. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune,

	preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010. 7. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com& (b) seacgujarat@gmail.com

5.	SIA/GJ/IND3/437113/2023	**M/s. Solaris Wood Products (India) Pvt. Ltd.** Block No. 54, Tokarva Road, Madhi- Bajipura Chowkdi, Behind Sumul Cattle Feed Factory, Tokarva, Taluka- Valod, District – Tapi 394690, Gujarat, India.	**EC-Reconsideration**

Category of the unit: **5(f) – B1**

Project stats: **EC – New**

Project located either in CEPI or non CEPI **: non CEPI**

PP submitted salient features of the project including Water, Air and Hazardous waste management are as under from Sr. No. 1, 3 to 40. And in Sr. No. 2 detailed deliberation of Committee is mentioned. Comments of SEAC is given in relavant points.

1) **DETAILS OF APPLICATION:**

1.1 Type of application:	EC Appraisal
1.2 Proposal no.	SIA/GJ/IND3/437113/2023
1.3 Category of Project :	Project Activity: 5 (f) Project Category: B1
1.4 Date of application:	20/07/2023
1.5 Date of EDS by SEIAA c) EDS Raised d) Reply by PP	--
1.6 Date of EDS by SEAC d) EDS Raised e) Reply by PP f) Accepted by SEAC	a) In minutes of 709th SEAC meeting to be held on 17th October, 2023. b) 04/12/2023 c) --
1.7 TOR No. & Date:	ToR issued vide letter No. SEIAA/GUJ/TOR/5(f)/1977/2022 Date of Issue: 24/08/2022
1.8 Date and place of Public Hearing	Public Hearing was held on dated 29/05/2023 at project site of M/s. Solaris Wood Products (India) Pvt. Ltd.
1.9 Name of accredited Environmental Consultant & address along with Accreditation No. & Validity	M/s. ENPRO Enviro Tech and Engineers Pvt. Ltd.

		Office Address: Plot No. D/29/16-17, Hojiwala Industrial Estate, Gate no. 3, Sachin Palsana Road, Sachin, Surat - 394230, Gujarat, INDIA. QCI-NABET Accreditation No. NABET / EIA / 2225 / RA 0236_Rev 01. Valid till 12/01/2025.
	1.10 SEAC Meeting No. and Date:	709th SEAC meeting held on 17th October, 2023.
	1.11 ADS raised by SEAC meeting No & date:	709th SEAC meeting held on 17th October, 2023.
	1.12 Reply Submitted by PP dated:	04/12/2023
	1.13 Revised Consideration SEAC Meeting No. and Date:	768th SEAC meeting to be held on 25/01/2024

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2) **DELIBERATIONS OF SEAC:**

1) This is a new project proposed for manufacturing of synthetic organics.
2) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
3) SEIAA has issued ToR vide letter No. SEIAA/GUJ/TOR/5(f)/1977/2022 dated 24.08.2022.
4) The proposal was considered in the SEAC video conference meeting dated **17.10.2023**.
5) Project proponent (PP) and their Technical Expert/Consultant M/s. ENPRO Enviro Tech and Engineers Pvt. Ltd remain present during video conference meeting.
6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
7) During the meeting, the project was appraised based on the information furnished in the EIA Report, various issues raised during the public hearing and details presented during the meeting.
8) Committee deliberated on public hearing proceedings. Public hearing was conducted on dated 29.05.2023 at Block No. 54, Tokarva Road, Madhi- Bajipura Chowkdi, Behind Sumul Cattle Feed Factory, Tokarva, Taluka- Valod, District – Tapi 394690, Gujarat. PP presented the issues raised by participant and issues received through written representation and its reply given by Project Proponent.
9) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial

distance from project site for the period 1st March, 2022 to 31st May, 2022. Ambient Air Quality monitoring was carried out PM10, PM2.5, SO2, NOx, CO, NH_3, PAH, VOCs and HC at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site will remain within the National Ambient Air Quality Standards (NAAQS).

10) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.

11) Committee noted following during the presentation:

- As per MoEF&CC's notification dated: 25.06.2014, PP mentioned that the fresh water consumption is 18.3 KLD which is less than 25 KLPD, fuel consumption is For boiler: briquettes – 24 MT/Day, For TFH (Standby): briquettes – 22 MT/Day and For D.G. Set (Stand by): Diesel – 105 Litre/Hour which is less than 25 MTPD and regarding Not covered in the category of MAH units as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989 mentioned simply complied.
- PP presented that Certified compliance report is not applicable as project is Greenfield. Committee noted that this is existing unit. PP informed that unit is having valid CC&A issued vide CC&A No. GPCB/ RO-NAV/ CCA/Tapi – 177/ ID – 78252/ 2493 on 07th May, 2022 and valid till 30th June, 2026. So as per MoEF&CC's OM dated 08.06.2022, PP has to submit the certified compliance report from concerned authority. Upon asking by committee of CCR, PP replied that they have applied for ToR application within a period of one year from the grant/ renewal of CTO.
- In Layout of plant committee noted that the labour quarter is located, so committee asked to remove from the project site and relocate else. Moreover in existing plant committee noted that the fire hydrant is not provided.
- Source of water is borewell, PP mentioned that they have applied at CGWA. So committee asked to present the application which applied at CGWA
- Committee noted that in EMP budgetary PP has shown fire safety and

occupational health in one head, so asked to separate it.

- Committee noted that the Risk assessment for formaldehyde does not covered all aspects.
- Baseline data submitted with conclusion, but committee noted that in conclusion only results are mentioned for all parameters instead of giving the conclusion of results.

12) PP submitted satellite map showing that there is water bodies, villages, School, monuments etc. within 500 m radius of the project site. Aerial distance of nearest habitat of Bajipura Village is @ 1.1 Km.PP also submitted that there are no Eco sensitive zones, wild life sanctuaries within the 10 km area from the boundary of the project site. Aerial distance of nearest National Highway of National Highway – 53 is @ 0.7 Km.

13) There is no earlier EC.The unit is having valid Consolidated Consent & Authorization (CC&A) from Gujarat Pollution Control Board vide CC&A order No. GPCB/ RO-NAV/ CCA/Tapi – 177/ ID – 78252/ 2493 dated on 07th May, 2022 with validity up to 30th June, 2026 for existing products. PP has submitted CC&A self-compliance report for existing plant.

14) PP submitted that there is one notice of direction and one show cause notice were issued by GPCB in last three years. Further mentioned that there is no legal court case and public complaint against unit.

15) **After detailed discussion, Committee unanimously decided to consider the project in one of upcoming meeting only after submission of following documents:**

a) Submit notorized undertaking regarding EIA report as per SEAC minutes dated 23.06.2023.

b) Regarding applicability of small scale condtion as per MoEF&CC's OM dated : 25/06/2014, in format you have simply mentioned complied in category of "Not covered in the category of MAH units as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989". Submit the details of chemicals falls under MSIHC Rules.

c) Submit the justification that why certified compliance report is not applicable as per MoEF&CC's OM dated 08.06.2023.

d) Rework and submit the revised layout by removing the labour quarter.

e) Revised layout with demarcation of proposed project activities with mentioning colour coding for existing plant and proposed plant facility, 6 meter road in periphery for ease movement of fire tender and emergency vehicle, green belt

area, separate entry and exit, assembly point etc mentioning in layout plan.Provision of separate entry & exit, provision of adequate margin all-round the periphery for easy unobstructed movement of fire tender without reversing, provision of fire hydrant line and sprinler system.

f) Proof of application applied at CGWA for groundwater withdrawal.

g) Revised CER with respect to public consultation issues.

h) Submit the revised EMP budgetary by separating the fund provision for fire safety and occupational health.

i) Submit revised Risk assessment for formaldehyde.

j) Land documents not submitted in presentation.

16) PP has submitted reply of above query generated on SEAC VC meeting, through Parivesh portal.

17) This proposal is reconsidered in SEAC VC meeting dated: **25.01.2024.**

18) PP along with their technical expert/consultant, M/s. ENPRO Enviro Tech and Engineers Pvt. Ltd remains present in the meeting and made presentation before Committee.

19) During meeting, Committee noted that PP submitted following details:

- ✓ Technical Expert/Consultant ENPRO Enviro Tech and Engineers Pvt. Ltd has submitted undertaking dated 13.10.2023 stating that they have valid NABET accreditation certificate and entire EIA/EMP work including field study, data collection, data analysis and report preparation is been carried out by them and their staff. Baseline data carried out by M/s. ENPRO Enviro Tech and Engineers Pvt. Ltd (NABL accrdiated laboratory).
- ✓ Committee noted that as per MoEF&CC's notification dated: 25.06.2014, it fulfils the criteria i.e the fresh water consumption is 18.3 KLD which is less than 25 KLPD, fuel consumption is Briquettes (Boiler orTFH (Stand-By)) 24 MT/Day and Diesel D.G. Set (Stand by**) 105 Lit/Hr.which is less than 25 MTPD and It is to note that, Storage of Hazardous chemicals will be below the threshold limit and will not be covered under the category of MAH units as per MOEF & CC OM dated 25/06/2014. Details of Raw materials required for proposed manufacturing process are Phenol Formaldehyde Resin, for which unit will utilize Phenol (94%), Formaldehyde (37%) and Causti casa Raw materials. From which none chemicals are listed in schedule 3 of the gazette n otification issued by MoEF&CC vide S.O.No. 966 (E) dated 27th November,1989 (Manufacturing, Storage and Import of Hazardous Chemicals Rules,1989), thus project fall in category "B" and hence applied at State level.

- ✓ PP has present that the existing project is involved in manufacturing of wood-based products which do not fall under purview of EIA notification,2006 and subsequent amendments.The unit is in operational phase,having valid CC&A issued by GPCB vide consent no.AWH-51488 **dated 19/01/2022** which is valid till 30/06/2026. As per the Office Memorandum issued by MoEF&CC vide file no. IA3-22/10/2022-IA.III [E177258] dated 08/06/2022, as mentioned in section B, point No. iv i.e., "Self-certified Compliance Report for the latest CTO shall be sufficient if the project proponent applies for expansion with in a period of one year from the grant/renewal of CTO. If such applicationis submitted beyond the period of one year from the grant/renewal of CTO, CCR shall be required for the latest CTO"
- ✓ PP has submitted comparison between Earlier proposed and Revised Plant Layout by removing the labour quarter.
- ✓ PP has submitted revised Plant Layout with demarcation of proposed project activities with mentioning colour coding for existing plant and proposed plant facility.
- ✓ CGWA Application has been submitted vide Application No. 214/11266/GJ/IND/2023on20/10/2023.
- ✓ PP has present that the during public hearing as well as responses/queries received in written for the Public hearing ,no suggestion/query raised to carry out particular CER activities Thus, CER activities are provided based on the baseline socio-economic survey carried out during preparation of EIA report .Hence, there will be no change in proposed CER activities.However,the same will be finalized after consultation with concerned authority of respective villages and other concerned regulatory bodies during time of implementation and same details in given in format at Sr. No. 39.
- ✓ PP has submitted revised EMP budgetary by separating the fund provision for fire safety and occupational health (occupational health and safety, Unit has allocated Rs.2lakhs as capital cost and Rs.1Lakhs as recurring cost and for fire safety,unit has Rs.33Lakhs as capital cost and Rs.4Lakh as recurring cost).
- ✓ PP has submitted revised Risk assessment for formaldehyde (complete rupture of tank of Formaldehyde, the impact will be dispersing up to 699 meters from the source which will affect around 80-100 people in nearby area).
- ✓ PP has submitted sale deed for Block No. 54 in name of Solaris Wood Product (India) Pvt. Ltd.

20) During meeting committee asked for following details:

- ✓ To Submit Revised plantlayout incorporating Common Area.
- ✓ Rearrange and Revise Activities mentioned in fire safety and occupational health heads in EMP table.
- ✓ Submit details about storage capacity of formaldehyde along with Catastrophic Rupture.

21) Later on PP has submitted following details through email dated 25.01.2024:

- ✓ PP has submitted undertaking dated 08.02.2024 mentioned about revised plantlayout,proposed dedicated block for canteen facility and change room for workers which was earlier named as "Common Area".
- ✓ Unit has also submitted a underetaking stating that, no person shall reside in the Common Area.
- ✓ PP has submitted revised Activities for fire safety and occupational health in EMP tableand same details in given in format at Sr. No. 40.
- ✓ PP has submitted risk contours for complete rupture scenario (Formaldehyde Storage details) are provided and same details in given in format at Sr. No. 35.

22) Committee found presentation and reply submitted by PP was satisfactory.

3) **EIA REPORT (BASELINE STUDIES AND RISK ANALYSIS)**

Sr. no.	Particulars	Details (Give brief note / Conclusion of the particular subject)	Page no., Section no. & chapter no. of EIA report
a	Ensure that there is no change in EIA report w. r. t. ToR i.e., Form-1 & PFR	No change EIA report has been made as per granted ToR by SEIAA.	-
b	Baseline environmental monitoring period	1st March, 2022 to 31st May, 2022	
c	Whether baseline data is primary or secondary data? 1) If baseline data carried out by other NABL accredited laboratory, then MoU between both. 2) If baseline data is taken from another EIA report, then MoU between NABET consultant and industry whose data used in preparing present EIA report and time period of baseline data shall be as per MoEF&CC's OM dated: 08.06.2022.	Primary Baseline data was collected during Summer Season: 1st March, 2022 to 31st May, 2022 by in-house NABL accredited laboratory of M/s. ENPRO Enviro Tech and Engineers Pvt. Ltd. (Environmental Testing Laboratory).	Page 3.1, Section 3.2, Chapter 3

<table>
<tr><td>d</td><td>Baseline study area (Km)</td><td>Baseline monitoring was carried out within study area of 10 km radius.</td><td>--</td></tr>
<tr><td colspan="4">AIR</td></tr>
<tr><td>e</td><td>No. of AAQM stations including project site</td><td>8 locations were selected for monitoring of Ambient Air including project site.</td><td>Page 3.27, Section 3.3.3.2, Chapter 3</td></tr>
<tr><td rowspan="2">f</td><td>Parameters considered for AAQM including project specific parameters.</td><td>PM_{10}, $PM_{2.5}$, SO_2 and NO_X have been monitored twice in a week at each location and HC, NH_3, CO, PAH & VOCs were monitored two times during monitoring period at each location.</td><td>Page 3.26, Section 3.3.3.1, Chapter 3</td></tr>
<tr><td colspan="3">-
<table>
<tr><th>Sr. No.</th><th>Parameters</th><th>Range of Concentrations (µg/m^3)</th><th>Remarks</th></tr>
<tr><td>1</td><td>PM_{10}</td><td>30.4 – 89.2</td><td>-</td></tr>
<tr><td>2</td><td>$PM_{2.5}$</td><td>11.8 – 47.5</td><td>-</td></tr>
<tr><td>3</td><td>SO_2</td><td>5.2 – 25</td><td>-</td></tr>
<tr><td>4</td><td>NOx</td><td>11.7 – 32.2</td><td>-</td></tr>
<tr><td>5</td><td>CO</td><td>Below Detectable Limit</td><td>mg/m^3</td></tr>
<tr><td>6</td><td>NH_3</td><td>Below Detectable Limit</td><td>-</td></tr>
<tr><td>7</td><td>HC</td><td>Below Detectable Limit</td><td>-</td></tr>
<tr><td>8</td><td>VOC</td><td>Below Detectable Limit</td><td>-</td></tr>
<tr><td>9</td><td>PAH</td><td>Below Detectable Limit</td><td>-</td></tr>
</table>
-</td></tr>
<tr><td>g</td><td>Whether the results of AAQM is within the norms prescribed in NAAQS?
If no, give reasons as per EIA report</td><td>Yes.

Average Concentrations of each parameter at each location remains below the stipulated standards of NAAQS.</td><td>Page no. 3.42, section 3.3.3.4 Chapter 3</td></tr>
<tr><td>h</td><td>Commentsfor AAQM results w. r. t. NAAQS</td><td>Concentrations of each parameter at each location remains below the stipulated standards of NAAQS.</td><td>--</td></tr>
<tr><td>i</td><td>Software used for the mathematical Modelling for anticipated incremental GLCs (Ground Level Concentrations)</td><td>AERMODCloudTM Version 18.18 developed by M/s. Envitrans Pvt. Ltd.</td><td>Page no. 4.33.8, section 4.8.1 Chapter 4</td></tr>
<tr><td>j</td><td>The resultant concentrations w. r. t. NAAQS and its conclusion.</td><td>Resultant GLC at all receptor locations are found below stipulated standards of NAAQS.</td><td>Page no. 4.38, section 4.8.1 Chapter 4</td></tr>
<tr><td colspan="4">WATER</td></tr>
<tr><td>k</td><td>No. of monitoring stations including project site w.r.t. water
c) Groundwater
d) Surface water</td><td>For baseline monitoring, 8 samples of ground water and 8 samples of surface water were collected.</td><td>Page no. 3.3 and 3.4, section 3.3.1.2 Chapter 3</td></tr>
<tr><td>l</td><td>Conclusion of the Monitoring during baseline study of</td><td>As mentioned below:</td><td>Page no. 3.14, section 3.3.1.5</td></tr>
</table>

	water (ground water and surface water)		Chapter 3

Surface water: The analytical results are compared with the published guidelines as per IS 2296: 1982 Tolerance Limits for Inland Surface Water Standards.

Sample SW 1, SW 5, SW 6 & SW 8 are river water samples, SW 2 & SW 4 are lake water samples, SW 3 is taken from Nala and SW 7 is taken from canal. From the analysis results of surface water, it has been found that the except TDS and DO all the parameters are well within ranges to class A classification of surface water.

Samples are having TDS levels in range of 324 to 594 mg/L which are slightly higher than class A range of 500 mg/L. In addition to this, other parameters like chloride, calcium, magnesium and fluoride were found within the prescribed limit as per IS 2296:1982 of class A.

The overall surface water quality is found good physico-chemically with respect to all the parameters.

Presence of coliform and fecal coliform is found in surface water bodies. It is anticipated that due to use of this sources by cattle, local residents and other domestic activities, coliform and fecal coliform are found.

Ground water: As ground water is mainly used for drinking purpose, the analytical results of ground water samples were compared with the established guidelines published by IS 10500: 2012.

The value of TDS in ground water ranges from 386 to 552 mg/L which are well within permissible limits. Chloride in ground water ranges from 115 to 158.9 mg/L which are within the permissible limits. Major heavy metals in ground water samples were found below detection limit.

It is observed that, in general chemical quality of ground water from shallow aquifers is good and fit for both domestic and irrigation purposes. Microbiological parameters coliform and faecal coliform were found <2 MPN/100ml.

Though water sources are found safe for drinking purpose without any conventional water treatment, it is suggested to disinfect water before drinking and for further treatment, portable RO system is suggested if needed.

However, due to project activities and proposed ZLD scheme, there will be no direct significant impact on any of the above sources of water. Area falls under safe zone for ground water extraction and based on that unit is using groundwater for existing industrial activities i.e., making of ply woods and shutter woods. As unit has proposed to use ground water as the source of fresh water for proposed project also, necessary permission from the concerned authority will be obtained.

m	No. of monitoring stations including project site w.r.t. soil	Soil samples were collected from 8 different locations, including project site.	Page no. 3.51, section 3.3.5.1 Chapter 3
n	Conclusion of the Monitoring during baseline study of land / soil	As Mentioned below:	Page no. 3.54, section 3.3.5.3 Chapter 3

The test results of soil samples collected in the impact area are interpreted referring to

the book; “Interpreting soil test results”. The pH of soil samples is observed mildly to moderately alkaline except S7 where it is strongly alkaline. The cation exchange capacity of the soils is very high contributed mainly by sodium and potassium exchangeable ions. The level of calcium in most of the soil samples is low. The calcium magnesium ratios of the samples reflect Calcium (Low). The soil texture is predominantly clay loam except S5 and S8 where it is found to be sandy clay loam. The porosity of eight soil sample ranges between 47.5 to 56.6 % in accordance to the texture of soil.

o	No. of monitoring stations including project site w.r.t.Noise	Noise monitoring was carried out within project site and 10 other locations within 10 km study area.	Page no. 3.44, section 3.3.4.2 Chapter 3
p	Conclusion of the Monitoring during baseline study of Noise	Equivalent noise level of different locations varies from 47.2 – 69.8 dB[A] during day time. The highest Noise level was found Near Sumul Cattle Field Factory and lowest Noise level was found near Bajipura School during day time	Page no. 3.48, section 3.3.4.4 Chapter 3
q	Any other details: **a) Details of carbon footprint:**It is estimated that, due to proposed project activities around 12868 MT/Annum CO_2 will be emitted. Details regarding the same are provided on page no. 4.54, section 4.9 of chapter 4. **b) Details of water footprint:** Details regarding the same is provided in page no. 4.58, section 4.9.4 of chapter 4. **c) Details of carbon sequestration:** It is estimated that, due to change in fuel as well as greenbelt development, annual Carbon footprints can be reduced. Details regarding the same are provided on page no. 4.58, section 4.9.3 of chapter 4. **d) Details of roof top rain water harvesting and reuse within premises:** Unit has proposed to provide roof top rain water harvesting system by which, unit will collect around 89.5 KLD rain water, reuse within plant premises and carry out ground water recharging. Details regarding the same are provided on page no. 2.22, section 2.9.5 in chapter 2.		
r	Details of Schedule-I species and its conservation plan, if any.		
	During primary site visit, no endangered or REET species found. However, after consultation with local villagers, it is found that peacock is present within the study area which are listed as Schedule-I species according to Indian wildlife protection Act, 1972. For the same, conservation plan has been prepared and submitted to Forest Division, Surat. Details regarding conservation plan is provided on page no. 10.31, section 10.6.2 in chapter 10.		

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4) **RISK ANALYSIS & ITS MITIGATION MEASURES IN GENERAL AS GIVEN IN EIA REPORT**

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I. Air

The major air pollutants generated from the proposed new project are given below.

- Emission from PM, SOx and NOx from utilities (i.e., Boiler or Thermopack, DG set (stand by))
- Air Pollution Control Measures (APCMs) has been proposed to provide consisting of multicyclone separator, bag filter and two stage alkali scrubbers with 35 m stack height.
- Two stage alkali scrubber has been proposed to provide to reaction vessel to control emission of VOCs which might be generated during process.
- Assessment of incremental ground level concentration of PM, SOx and NOx are provided further in this section of report in Section 4.8 using software AERMODCloudTM Version 18.18(Build: 202) developed by M/S Envitrans Pvt. Ltd. AERMODCloudTM is an integrated graphical user interface of AERMOD, ISCST3, AERMAP and AERMET.
- It will be ensured that, all the components are installed properly before startup of the utilities. During start-up of the utilities (i.e.,boiler or thermopacks) abnormal burning may occur, considering the same, APCMs will be provided as per CPCB guidelines. In case of failure of APCM, unit will immediately stop the production activities and will not start the activities until the desired efficiency is achieved. Standard Operating Procedures (SOPs) will be prepared and followed on strictly basis for operation of utilities. Workers will get training on regular basis to operate the said utilities. Preventive schedule will be prepared so that, regular maintenance will be carried out.
- PLC/SCADA automation system will be provided for process control. Feeding of raw material, temperature during process etc. will be control based on automation system to avoid batch failure. This might be led to direct emission of VOCs to the atmosphere. However, vent will be attached to reactors will lead to two stage alkali scrubber to control emission of VOCs. Only trained and qualified person will handle the procedures.
- Management plan for the ambient air quality is provided in section 10.4.1 in chapter 10. In addition to this, budgetary allocation for the same is provided in section 10.8 in chapter 10.
- Emission due to the vehicular movements is provided further in this section of report in Section 4.8.5 using CALINEpro traffic emission modelling software Version 1.7 (Build: 47) developed by M/s. Envitrans Pvt. Ltd.

ODOUR CONTROL MEASURES:

There will be a chance of odor nuisance during manufacturing process as well as due to storage of hazardous waste, raw material and products. The control measures for odor, describe below:

- Proper housekeeping shall be maintained at site to ensure that treated and untreated waste water is not stagnant in any tank or at any place.
- Haz. waste will be covered from all the sides and greenbelt development will be developed around the plant premises to avoid the odor generation.
- Green belt development to create a surface capable of absorbing odorous gases and creating sinks. Because of the large surface area of leaves in a tree crown, contaminants sorb on their surface, thereby reducing their concentrations in the ambient air and reducing source emissions. Development and management of greenbelt along with types and numbers of species to be planted within the plant premises along with budget for next 5 years is provided in section 10.6.1 in Chapter 10.

II. Water

- Fresh water will be sourced from borewell, and necessary permission shall be taken from CGWA once the project gets environment clearance.
- Wastewater generated from industrial activities will be sent to collection tank and then it will be sent to evaporator. Condensate will be reused again within plant premises. Salt generated from evaporator will be sent to TSDF site for further disposal.
- Domestic wastewater will be treated in packaged STP and treated water from STP will be reused in gardening activities.
- Flowmeter with totalizer shall be provided at the inlet and outlet of ETP for data monitoring.
- Skilled manpower will be deployed for continuous and efficient operation of ETP.
- It will be ensured that, all the components of ETP are installed properly and all the mechanical pumps are working properly before start of effluent treatment plant. In case of breakdown of ETP during operation, unit will stop the production activity and temporary

storage tanks will be provided to store the wastewater which will treated once the desired efficiency of ETP is achieved. Provision of stand by mechanical pumps shall be made available. Characteristics of the wastewater will be analyzed by inhouse laboratory for the further treatment.

- SOPs shall be made for the regular operation of ETP. Logbooks shall be maintained to record the data of wastewater and treated water. Necessary training shall be provided to the workers for the operation of ETP.
- Management plan for water quality has been provided in section 10.4.3 in chapter 10 which also includes start-up or abnormal or shut-down phase of effluent treatment plant. Budget allocation has been also provided in section 10.8 of chapter 10 for the same.

III. Noise

- Proper and timely maintenance of machineries and preventive maintenance of vehicles shall be adopted to control noise generated due to vehicle movement. Vehicle movement will be restricted during late evening and night time.
- ID Fan, FD Fan and other noise generating equipment shall be selected such that noise level of these equipment are less than 85 dB when measured at 1 m distance from the equipment.
- High Noise generating equipment like pumps, motors on anti-vibration pads, placing shall be installed in enclosed room so that noise is contained within room only. All the equipment/vehicles are regularly maintained.
- Employees shall be provided with PPEs during entering to such rooms for maintenance purpose. Earmuffs will be used while running equipment of the industry.
- Proper plantation shall be done all along the roads & periphery to reduce noise. Development of greenbelt all along the boundary and along the roads within the project.
- In case of breakdown of noise generation equipment, adverse effect may occur on the workers due to sudden and heavy to avoid adverse effect on workers, necessary personal protective equipment like ear muffs and ear buds shall be provided to all the workers. Budget allocation for management of noise pollution is provided in section 10.8 in chapter 10.
- Management plan for noise quality has been provided in section 10.4.2 in chapter 10.

IV. Land Environment

- All waste water generated during production shall be conveyed through pipeline to effluent collection tank. Spillage of waste water on ground or soil will be avoided.
- Due to failure of pipeline or any such event if such spillage takes place, contaminated soil due to such incidence shall be recovered from ground and shall be packed and stored in hazardous waste storage area for disposal to TSDF site.
- Hazardous solid waste will be packed and stored in hazardous waste storage area. All such storage area shall be provided with impervious bottom and covered from side and top so that due to handling of these waste soil is not contaminated.
- Monitoring of soil samples shall be done as per Environmental monitoring plan.
- Management plan for soil and hazardous waste is provided in section 10.4.5 in chapter 10. Budget provision for management of solid and hazardous waste is provided in section 10.8.

V. Occupational Health & Safety

- All workers shall be provided with training for handling of raw materials and haz. waste. The workers will be provided with skill development training and training in risk assessment and disaster management.
- Only trained workers will be employed for all the hazardous process operations within the plant and will be supervised by experienced supervisors.
- PPEs such as mask, goggles, gloves, safety shoes and safety helmet shall be provided to workers.
- Incident / accident reporting system will be developed and all the employees will be made aware of the same.

- Regular health checkup of all workers shall be conducted.
- Details regarding occupational health and safety is provided in section 10.6 of chapter 10. Budgetary provision for the safety is provided in section 10.8 in chapter 10.

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5) **PRODUCT PROFILE AND BRIEF NOTE OF PRODUCT PROFILE**

Sr. No.	Product Name	CAS Number	Manufacturing Capacity (MT/Month)	End Use
1	Phenol Formaldehyde Resin	9003-35-4	520	Used in plywood, Electric Appliances, billiard balls, laboratory countertops, and as coatings and adhesives

 # Brief Note of Product Profile:

1. No of Manufacturing Plants: 1
2. Brief Note regarding number of Products to be manufactured considering plant capacity: Unit has proposed manufacturing of only single product.

6) **PROJECT DETAILS (COST/LAND OWNERSHIP/NA PERMISSION ETC.)**

a) Total **cost of Proposed** Project (Rs. in Crores):

Total Project Cost
9.5 Crores

Break-up of proposed project Cost:

Details	Project Cost (Rs. In Crores)
Land Development	0.15000
Building	3.71131
Plant & Machinery	3.00000
EMP	0.85500
Miscellaneous	1.78190
Total	**9.50000**

b) **Details of Land / Plot ownership details:**

Unit is having Total area of 22,396 m^2.

Entire land is in possession of Solaris Wood Product (India) Pvt. Ltd. Land is non – agricultural land. Land possession documents and land NA documents are attached as Annexure 2 and Annexure 3 respectively in EIA report.

7) **IF IT IS EXPANSION WHETHER CCR/EARLIER EC COMPLIANCE GIVEN:**

Sr. no.	Particulars	Brief Information/Details	Remarks
1	Earlier Environmental Clearance **(EC)** details [EC letter no. and date & obtained from MoEF&CC/SEIAA.]	Not applicable as the proposed project is new project.	--
2	In case EC not obtained for existing project: Copy of first CTE (NOC) &CCA obtained from GPCB	At present, unit is involved in manufacturing of various plywood based products which does not fall under purview of EIA notification, 2006	--

		i.e. before 14/09/2006. (For justification that you have not obtained EC for existing project).	and subsequent amendments. Hence, unit has not obtained Environment Clearance for existing project. Unit is having valid CC&A issued vide CC&A No. GPCB/ RO-NAV/ CCA/Tapi – 177/ ID – 78252/ 2493 on 07th May, 2022 and valid till 30th June, 2026. Unit has obtained ToR to CTE vide File No. GPCB/ (PCB ID. – 78252 on 29th October, 2022)	
	3	**Certified Compliance Report (CCR)** from the concern authority **(IRO-MoEF&CC/MS-GPCB) for existing EC/ CCA** as per the MoEFCC's OM no.F.No: IA3-22/10/2022-IA.III [E 177258] dated: 08/06/2022.	It is to note that, the existing project is involved in manufacturing of wood-based products which do not fall under purview of EIA notification, 2006 and subsequent amendments. The unit is in operational phase, having valid CC&A issued by GPCB vide consent no. AWH-51488 dated 19/01/2022 which is valid till 30/06/2026. As per the Office Memorandum issued by MoEF&CC vide file no. IA3-22/10/2022-IA.III [E 177258] dated 08/06/2022, as mentioned in section B, point No. iv i.e., "Self-certified Compliance Report for the latest CTO shall be sufficient if the project proponent applies for expansion within a period of one year from the grant/renewal of CTO. If such application is submitted beyond the period of one year from the grant/renewal of CTO, CCR shall be required for the latest CTO". In view of the above, we would like to highlight that, the unit applied for ToR by submitting online application for ToR vide proposal no. SIA/GJ/IND3/75316/2022 on 15/04/2022, ToR presentation was carried out in 414th SEAC meeting held on 05/05/2022 and ToR was granted vide File No. SEIAA/GUJ/TOR/5(f)/1977/2022 on 24/08/2022. Which is within 1-year span from grant of consent. Considering the same, Certified Compliance report is not applicable to the unit and the unit has submitted self-certified CC&A compliance report.	--	

	4	**Summary of CCR and Time bound action taken report/ plan of conditions i.e., partly complied/ non-complied**	Out of 35 conditions, 8 are noted, 22 are complied, 2 are agreed to comply by PP and 3 are Not complied. For not complied conditions, unit has proposed to develop greenbelt in area of around 7570 m^2 within plant premises according to standard GPCB/CPCB criteria. Undertaking mentioning the same is also attached as Annexure 8 in EIA report.	--
	5	Details of latest Consent to Operate (CTO/CC&A) obtained from GPCB along with date of issue and validity	Unit is having valid CC&A issued vide CC&A No. GPCB/ RO-NAV/ CCA/Tapi – 177/ ID – 78252/ 2493 on 07th May, 2022 and valid till 30th June, 2026.	--
	6	Details of **Improvement notice, Show- cause notice, Notice of direction, Directions, Closure direction etc**. issued by the GPCB to the existing unit in **last 3 years**. Details in tabular format comprise **issues, actions taken and current status**. As per the latest XGN screen shot.	Details are provided below:	

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Sr. No.	Particular	Reply Given
	Notice of direction issued vide letter no. CTE-NAV-541/GPCB ID:78252/605677 dated 03/11/2021.	
1	Unit is engaged is manufacturing of PF Resin without obtaining prior Environment Clearance from competent authority and prior CTE/CCA of Board. During inspection manufacturing of PF resin was going on.	We have immediately stopped the production Activity for PF Resin and we have disconnected/dismantle the plant of PF Resin. We assuring to the Board that after getting EC and CTE from the Board for PF Resin and then we will apply CCA and then we will start our production Activity of PF Resin. Photograph Attach
2	Unit is engaged in manufacturing of Resin paper without obtaining prior CTE/CCA of the Board. During inspection manufacturing of Resin paper was going on.	We have immediately stopped the production Activity for PF Resin and we have disconnected/dismantle the plant of PF Resin. We assuring to the Board that after getting EC and CTE from the Board for PF Resin and then we will apply CCA and then we will start production Activity of PF Resin.
3	Unit has installed (provided) 2nos of reactor /vessels having 4KL & 2KL capacities within premises for manufacturing of Resin and	We have immediately stopped the production Activity for PF Resin and we have disconnected/dismantled the plant of PF Resin, 2nos of reactor /vessels having 4 KL & 2 KL

	installed Resin paper dryer machine for production of Resin paper dryer machine for production of Resin Paper without obtaining of prior EC/CTE/CCA.	capacities), Resin paper dryer machine. We assuring to the Board that after getting CTE and EC from the Board and then we will apply CCA and then we will start our production Activity.
4	No any facility is provided to treat boiler blow down and RO Reject waste water and discharge it in unauthorized manner outside the factory premises.	The boiler blow down waste water and RO Rejected waste water which we are using in the cooling tower and we are not discharging waste water outside the factory premises.
5	AAQ is observed poor during inspection.	We have improved AAQ.
	Show Cause Notice Issued Vide Letter No: SCN-752600 dated 06/09/2023	
1	Unit has not maintained record of water consumption.	We will maintain record of water consumption.
2	Provided water scrubber as APCM with boiler is found not in operation	During the visit, due to Power Fluctuation, water circulation pump was tripped so at that time Water scrubber was not in operation. We have operate our water scrubber regularly & Properly.
3	Housekeeping is found poor in Boiler area	We have improved Housekeeping in Boiler area.

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7	Details of **Public Complaints**(If any)	None	
8	Details of **litigation** pending before any court of Law against the Project (If any)	No litigation or court cases are pending against existing unit related to environment. However, one FRI against the unit regarding copy right case is filed dated 18/04/2023.	

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Comments:

PP has submitted self-certified CC&A compliance report. Also,PP submitted that there is one notice of direction and one show cause notice were issued by GPCB in last three years.and reply of the same was submitted to GPCB. Further mentioned that there is no legal court case and public complaint against unit.

8) **PUBLIC HEARING APPLICABILITY AND ITS COMPLIANCE:**

Public Hearing was carried out on 29th May, 2023 at project site of M/s. Solaris Wood Products (India) Pvt. Ltd.

Questions/suggestions/concerns raised during public hearing and responses:

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Sr. No.	Name of and address of the representator	Points of representation	Reply given by the technical representative of the company	Justification/Action Plan
1	Name not disclosed	• He stated that whether a copy right case has been filed against this company or not. • According to the police records, there is no case against this company?	• The Regional Officer stated that no case has been filed. • As said by you, no environment related case filed for this company in GPCB. The matter mentioned by you is not related to this environmental public hearing	• It is to inform that, one FRI regarding copyright case has been filed against the unit on 18/04/2023.
		• What kind of chemical will be produced and how much water will be used in the upcoming project? Has the presentation been made in the surrounding affected villages and the people have been informed?	• A copy of the executive summary in English and Gujarati has been given to the Sarpanchs/ Talati in the surrounding 59 affected villages for wide publicity.	• Unit has proposed to manufacture single products i.e., Phenol Formaldehyde Resin. For the same, total 18.3 KLD fresh water will be required. Same will be sourced through existing bore well only. Unit will obtain NOC from CGWA for withdrawal of proposed quantity of fresh water from bore well. • Advertisement regarding public hearing was provided in local English newspaper The Indian express and Gujarati newspaper Divya bhaskar dated 14/05/2023.

					• Moreover, the executive summary mentioning the same was distributed in English as well as Gujarati language in surrounding 59 villages, falling under study area of 10 km radius.	
			• The report has been circulated in English.	• A copy of executive summary has been provided.	• It is to inform that, copy of executive summary has been distributed in English as well as Gujarati Language in surrounding 59 villages, falling under study area of 10 km radius.	
			• 18000 liters of water will be used in the upcoming project here and information has been given to the surrounding people that 300-400 liters water will be used. The company wants to start the project by misleading people.	• The details of water consumption and wastewater generation will be shown in the presentation. But the presentation was not allowed to proceed further.	• Unit has proposed to use total 18.3 KLD fresh water for proposed manufacturing of Phenol Formaldehyde Resin. Same has been mentioned in EIA report as well as executive summary which was distributed in surrounding villages in English as well as Gujarati Languages.	
			• Sir, you should inspect the nearby survey no. 49, 98, 51, 50. The sugarcane crop and stalks have dried up because the plant is discharging wastewater. Approx. 300 cows of Tokarwa village drink water in it every day, who is responsible if they get harmed? The company should build a pond for its wastewater disposal like GNFC & GSFC. Why the company is discharging wastewater	• Make your representations after completion of the presentation.	• From proposed manufacturing activities, total 6.2 KLD industrial effluent and 1.4 KLD domestic effluent shall be generated. Which will be treated into in-house ZLD based effluent treatment plant. 6.2 KLD Industrial effluent will be treated into evaporator and 5.8 KLD condensate will be recycled back within plant premises.	

			outside their premises? • The company is disposing their wastewater in the river till date. The pit has been dug three days ago, so we do not trust the company. The company will show only its positive points and not its negative points in the presentation.		1.4 KLD Domestic effluent shall be treated into packaged STP plant and treated water shall be reused for gardening purpose. It is to note that, there will be no discharge of effluent outside the plant premises. Hence, no direct impact on nearby ground water or surface water will occur.
	2	Shri Bhupendrabhai Chaudhari Vill.: Titwa, Ta.: Valod, Dist.: Tapi	• He stated that a resolution was passed in Titwa village to close the company and the company says that they have got the approval. We try to close the company every year and the company continues its operations. The company has installed the boiler without permission. When the boiler runs, it burns in the eyes and damages the eyes; even now the boiler is running. The company says it's a chimney since it's a small unit, but we know the technology and we can identify the boiler as well. If this company comes, our culture, land and water will be damaged. • This area falls under Schedule-5. So, we collective iterate that we do not want such kind company in this area. This is our tribal area.	• The Regional Officer stated that you can make your representations after listening to the presentation. But the people denied to listen to the presentation.	• Unit has proposed to utilize existing boiler having capacity of 7 MT/hr. In which, briquettes will be used as a fuel which is GPCB approved and eco-friendly fuel. Due to the use of briquettes, PM, SO_2 and NOx will be generated as a pollutant, for which unit has proposed to provide Air Pollution Control Measures i.e., Multicyclone Separator, Bag Filter and two stage alkali scrubber with adequate stack height of 35 m. • Due to proposed usage of boiler, increment in Ground Level Concentration of the pollutants has been assessed through AERMODCloudTM Air Dispersion Software developed by M/s. Envitrans Pvt. Ltd. from which it can be observed that, even after increment in GLC of the pollutants, resultant concentrations of

					pollutants will remain below standards stipulated by National Ambient Air Quality Standards (NAAQS). Details regarding the same are also provided in EIA report in section 4.8 of chapter 4 of EIA report.
	3	Smt. Kankuben Sarpanch, Vill.: Kaher, Ta.: Valod, Dist.: Tapi	• She stated that it was said during the meeting that 200-300 liters of water will be used and the company will use it again after recycling. In the report sent to the public, it is written that 18000 liters of water will be used. • Not everyone can read the details you have sent to Sarpanch.	• The Regional Officer stated that ask your questions after listening to the presentation, we are ready to listen. • According to the provisions of the notification, we have carried out announcement of public hearing in the area of 10 km radius.	• Unit has proposed to manufacture single products i.e., Phenol Formaldehyde Resin. For the same, total 18.3 KLD fresh water will be required. Same will be sourced through existing bore well only. Unit will obtain NOC from CGWA for withdrawal of proposed quantity of fresh water from bore well. • Distribution of executive summary in 59 villages surrounding the project site has been circulated as per the provisions of EIA notification, 2006 and subsequent amendments.
	4	Shri Maheshbhai Babalbhai Vill.: Tokarva, Ta.: Valod, Dist.: Tapi	• He stated that last year, 2-3 of my buffaloes died after drinking the toxic water disposed by the company during the monsoon. The sugarcane crop was also severely damaged due to toxic water.	• The Regional Officer stated that we will get it investigated.	• From proposed manufacturing activities, total 6.2 KLD industrial effluent and 1.4 KLD domestic effluent shall be generated. Which will be treated into in-house ZLD based effluent treatment plant. 6.2 KLD Industrial effluent will be treated into evaporator and 5.8 KLD condensate will

					be recycled back within plant premises. 1.4 KLD Domestic effluent shall be treated into packaged STP plant and treated water shall be reused for gardening purpose. It is to note that, there will be no discharge of effluent outside the plant premises. Hence, no direct impact on nearby ground water or surface water will occur. • Unit has also proposed rainwater harvesting scheme by which during monsoon season, unit will collect and store around 89.5 KLD rainwater.
	5	Name not disclosed	• He stated that we request you to show the villagers the pros and cons of the upcoming project. As the villagers have not been made aware of the same, we oppose the presentation and public hearing.	• The Regional Officer stated that you can make your representations after listening to the presentation. But the people denied to listen to the presentation and opposed collectively and did not allow to give replies to their questions.	• Detailed impact assessment matrix and related suggested mitigation measures are provided in EIA report in section 4.5.2, in chapter 4 of EIA report in which anticipated impacts as well as respective mitigation measures are also provided.
	6	Shri Himanshu Chaudhari Schedule-5 Area	• He stated that he said that he is a tribal. Approx. 90-95% of the people of this area are engaged in agriculture and animal husbandry. If animals are dying because of the company, then we oppose such company. We will live as we used to live by animal husbandry and agriculture. We don't want this company. We don't want		• Unit has proposed to provide employment to 45 people for the proposed project activities. It is to note that, priority will be given to the employees from nearby industries based on their skills.

			anybody's slavery. If people are made aware and the condition of the location investigated, the reality will be revealed. We don't want this this factory and public hearing. If this project gets approval, we will protest on Gandhian way.			
	7	Name not disclosed	• He stated and showed damaged hands of a person working in this company and stated that if anything happens to this person, if any trouble arises or if he is harassed, the police department and environment officials will be held responsible.		• Details regarding occupational health and safety program are already provided in section 7.5, in chapter 7 of EIA report. • Unit has also proposed to provide necessary mitigation measures for occupation health and safety. Unit has also proposed to provide separate funding of Rs. 13 Lakhs for various aspects i.e., PPEs/RPEs, Chemical protective suits/ Fire proximity suits, Safety Shower and Eye washers, Flame arrestors with breathing valve, SCBA sets, First Aid and Medicines, PLC with SCADA system etc. • Necessary SOPs will be made available and training will be provided to workers. Additionally, regular health checkup will be carried out of workers. Unit will also develop well laid Environment Management Cell for environment	

					management.
	8	Name not disclosed	• He stated that Borkhadi village is next to this village and our farm is 2.5 - 3 km from this location, where we have planted thousands of trees to protect the environment. We have seen extinct species of butterflies at the time of Corona Pandemic. The company will dispose its wastewater in Mindhola river passing beside our village. Borkhadi village has a large-scale farming and animal husbandry business and its milk is being sold in the SUMUL Dairy. If there is air and water pollution in the area, the situation will be serious. I am associated with the industry for the last 10 years and I am a mechanical engineer, working in Sachin GIDC. You know the situation of Sachin, Palasana, Baleswar and Kadodara better than me. There is greenery all around. Green gold grows here. While, we are giving our lives to save water, forest and land. The rivers of this area are clean, the land is fertile, the cleanliness should be maintained. We cancel this public hearing.		• It is to note that unit will provide necessary Air Pollution Control Measures to mitigate anticipated air pollution due to use of utilities. Additionally, unit has also proposed to develop greenbelt in area of 7570 m^2 within plant premises which is 33.8% of the total plot area. • Unit has also proposed to allocate funding of Rs. 108.5 Lakhs as a part of Environment Management Plan in which cost for conservation of Schedule-I species is also included. • Due to proposed ZLD based effluent treatment plant unit will ensure that there will be no discharge of effluent outside the plant premises. Unit will also maintain the record of effluent generation and treated water. Which will be submitted to GPCB through six monthly compliance report. • Unit has also proposed provision of post project environmental monitoring in which regular monitoring of the Air, Water and Soil environment will be carried out.
	9	Shri Bunty Dodiya Vill.: Ta.: Valod,	• He stated that what is the point of setting up such companies to create artificial		• Details regarding occupational health and safety program are already provided

		Dist.: Tapi	disasters when the government does not help those affected by natural calamities? These companies will directly or indirectly compromise people's life and nature, so there is no need for such companies in our area.		in section 7.5, in chapter 7 of EIA report. • Unit has also proposed to provide necessary mitigation measures for occupation health and safety. Unit has also proposed to provide separate funding of Rs. 13 Lakhs for various aspects i.e., PPEs/RPEs, Chemical protective suits/ Fire proximity suits, Safety Shower and Eye washers, Flame arrestors with breathing valve, SCBA sets, First Aid and Medicines, PLC with SCADA system etc. • Necessary SOPs will be made available and training will be provided to workers. Additionally, regular health checkup will be carried out of workers. Unit will also develop well laid Environment Management Cell for environment management.
	Repeat	Shri Bhupendrabhai Chaudhari Vill.: Titwa, Ta.: Valod, Dist.: Tapi	• He stated that those who don't want this factory should raise their hands and those who want a factory should raise their hands as well. Everyone in the public hearing here does not want such a company, so I request you to cancel this public hearing. Cancel this public hearing as this company is damaging 55 - 60 villages and		• It is to note that unit will provide necessary Air Pollution Control Measures to mitigate anticipated air pollution due to use of utilities. Additionally, unit has also proposed to develop greenbelt in area of 7570 m^2 within plant premises which is 33.8% of the total plot area. • Unit has also

			this area comes under schedule-5.		proposed to allocate funding of Rs. 108.5 Lakhs as a part of Environment Management Plan. • Due to proposed ZLD based effluent treatment plant unit will ensure that there will be no discharge of effluent outside the plant premises. Unit will also maintain the record of effluent generation and treated water. Which will be submitted to GPCB through six monthly compliance report. • Unit has also proposed provision of post project environmental monitoring in which regular monitoring of the Air, Water and Soil environment will be carried out.	
	10	Shri Prabhubhai Chaudhari Sarpanch Vill.: Titwa, Ta.: Valod, Dist.: Tapi	• He stated that these companies will harm people, environment, agriculture and animal husbandry. Hence, it is recommended that this public hearing be canceled in the interest of the people and their long life.		• Anticipation of possible impacts on Air environment, water environment and soil environment is carried out and same is provided in section 4.5.2, in chapter 4 of EIA report. • Considering the worst case scenario, mitigation measures are suggested to reduce the effects of anticipated impacts. Additionally, continuous monitoring will be carried out. Separate funding of Rs. 108.5 Lakhs will also be provided for Environment Management Plan.	

					Well laid Environment Management Policy and Environment Management Cell will be developed and followed by the unit.
	11	Name not disclosed Vill.: Kaher, Ta.: Valod, Dist.: Tapi	• She stated that in the villages, villagers are engaged in agriculture and animal husbandry. Even though the youth is educated, they do not get employment. So, we are/will earn our living from farming and agriculture, we don't need the upcoming project.		• Unit has proposed to provide employment to 45 people for the proposed project activities. It is to note that, priority will be given to the employees from nearby industries based on their skills.
	12	Shri Sunilbhai Ramanbhai Gamit, Sarpanch, Village: Inama, Ta.: Valod, Dist.: Tapi	• He stated that I don't have faith in this company, so this company should be closed.		• --
	13	Shri Rakeshbhai Vakil (His wife is sarpanch of Kolwada village)	• He stated that we are against the company, as it affects 35 villages and uses toxic chemicals, which is damaging the soil and water. We recommend that this public hearing should be cancelled.	• The villagers were asked to make any representations regarding the company or to submit them in writing by the Regional Officer.	• It is to note that unit will provide necessary Air Pollution Control Measures to mitigate anticipated air pollution due to use of utilities. Additionally, unit has also proposed to develop greenbelt in area of 7570 m^2 within plant premises which is 33.8% of the total plot area. • Unit has also proposed to allocate funding of Rs. 108.5 Lakhs as a part of Environment Management Plan. • Due to proposed ZLD based effluent treatment plant unit will ensure that there will be no discharge

				of effluent outside the plant premises. Unit will also maintain the record of effluent generation and treated water. Which will be submitted to GPCB through six monthly compliance report. • Unit has also proposed provision of post project environmental monitoring in which regular monitoring of the Air, Water and Soil environment will be carried out.

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QUESTIONS/SUGGESTIONS/CONCERNS RECEIVED THROUGH MAIL AND RESPONSES

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Sr. No.	Name of Person	Questions/ Suggestions/ Concerns	Reply Given	Reference / Remarks
1	**Shree Shiv Gau Rakshak Dal** Kadi, Mahesana	Supporting letter in favour of M/s. Solaris Wood Products (India) Pvt. Ltd.	-	Letter to Regional Officer, GPCB, Ref no. 205 dated 27/03/2023
2	**Gujarat Sonani Dadi (Dainik Samachar Patra)** Naroda, Ahmedabad	Supporting letter in favour of M/s. Solaris Wood Products (India) Pvt. Ltd.	-	Letter to Regional Officer, GPCB, Navasari with Ref. No. 478 on dated 28/03/2023
3	**Sarswati Foundation** Kadi, Mehasana	Supporting letter in favour of M/s. Solaris Wood Products (India) Pvt. Ltd.	-	Letter to Regional Officer, GPCB, with Ref. No. 207 on dated 26/03/2023
4	**Jan Seva Trust** Kadi,	Supporting letter in favour of M/s. Solaris Wood Products (India) Pvt. Ltd.	-	Letter to Regional Officer, GPCB,

	Mehasana			with Ref. No. 286 on dated 28/05/2023
5	**Patel Jitendrakumar Babalbhai** A 4, Gajanan Park, Behind R.B.L school, GIDC, Ankleshwar Dist.: Bharuch.	1. How many % greenbelts are there in the company now? Where are the trees grown in it? How many trees are there in total?	1. Unit will propose to develop 7570sq.m. ((%33.8area as greenbelt. Approximately 1815 regional trees will be planted. It includes trees like almond, teak, amla etc. Detailed information is given in Chapter- 10of the Draft EIA Report.	Letter to Member Secretary, Gujarat Pollution Control Board, Gandhinagar dated 26/05/2023
		2. As your plant is the producer and as your people are the workers. As well as greenbelt developers. Accordingly, we will need more than 25 kilolitres of water daily. So as per amendment suggested in EIA Notification, 2006 through S. O. 1599)E) dated 25th June, 2014we are not suitable to cover small scale industries in the criteria. Let's think about this properly.	2. The proposed project would require 18.3 KLD of fresh water which is less than 25 kiloliters. Details of which are given in Chapter 2 of the Draft EIA Report. Apart from this, no chemicals are to be used as per the guidelines of MAH.	
		3. Please attach the NABET approved certificate of the environmental consultant who prepared this project report.	3. Environmental Consultant name is ENPRO Enviro Tech and Engineers Pvt. Ltd. having valid certificate vide number is NABET/EIA/225/RA0236 _Rev01 which is valid upto 12/01/2025. It is shown in Annexure- 5of the draft EIA report.	
		4. What is the reason why we set up the project in this area? The area is full of natural environment? How fair is it to pollute it?	4. The new production in the plant is proposed to be carried out in the existing premises. No new space is taken. And the project has been proposed considering	

					Forest areas are rapidly decreasing in the state.	the natural parameters.	
				5.	Has our company ever been given a closure notice or a showcause notice for violating environmental regulations? Please enclose a copy if provided.	5. The unit has submitted to the GPCB the necessary replies and details of the notices received from the GPCB. Details regarding the same are available from the concerned government officials.	
				6.	If any system has been set up in the given plant for rainwater harvesting, please include a color photograph of the same.	6. At present there is no system for rain water harvesting in the plant. But in the proposed project, 30sq.m. area is given for rain water harvesting. The detailed information of which is given in Chapter-2of the draft EIA report.	
				7.	Has there ever been a fatal accident in our company, if so please provide the information.	7. No, our company has never had a fatal accident.	
				8.	Depending on how much conventional energy you use now, expect to use more conventional energy in the future.	8. In the proposed project, it is proposed to install 100kilowatt solar panels.	
				9.	Please enclose a copy of the MoU with whom you are currently supplying solid hazardous waste and if you have any MoU with them.	9. Solid hazardous waste generated from the proposed project is proposed to be sent to the TSDF site. MoU will be carried out after getting receipt of EC.	
				10.	Give how much ground water has been used in the last two years.	10. Monthly water consumption data is being submitted to GPCB regularly.	
				11.	Provide information on how much water tax was paid to which government agency.	11. This is not applicable for our project.	
				12.	432tonnes of ash will be released in 5	12. The ash produced from the proposed project will	

				years. Is there an MoU with any ton kiln to dispose of this? Please attach a copy.	be sent to a brick-making plant or for road construction activities. MoU will be carried out after getting receipt of EC.		
				13. You give 6KL of used oil per year. Where will this much oil be used?	13. The oil will be used in pumps, motors and other equipment in the plant. The oil produced from the established project will be sent to authorized recyclers.		
				14. How many trees will we need to cut to establish the plant?	14. No trees will need to be felled to set up the proposed plant. As the new production in the plant is proposed to be done in the existing premises.		
				15. What are you using as media in Scrubber? How will you dispose of it?	15. Alkaline solution (NaOH/CaOH) will be used as media in scrubber. Scabber bleed will be treated in ETP.		
				16. Please provide the information about what CSR activities the company has done so far for the surrounding villages and how much has been spent for it.	16. It may be noted that the unit has obtained permission to work for Plywood, Checkerwood, Truckwood in January, 2022 i.e. about 1 year. At present the unit has provided donations/funds for some development works activities in nearby villages. Apart from this, the unit will spend Rs. 19 lakhs is proposed to be allocated after obtaining EC. Details are given in Chapter 8 of the EIA report.		
				17. You have received Standard ToR on dated 24th August, 2022 and the baseline survey was completed in May- .22What is the reason for this?	17. Baseline survey could not be conducted in rainy season keeping in mind that baseline survey was conducted in summer season.		
				18. Out of the total number of people currently working in	18. At present around 25 people are working in the premises. The proposed		

				the plant, how many are from the affected area?	project will provide employment to around 45 people and priority will be given to local people.	
				19. You are expected to give maximum priority to locals in new recruitment.	19. Noted.	
	6	**Roshni B. Patel** Ta Vyara Dist Tapi		1. What will be used as fuel in boiler? No excess polluting elements (dangerous) are used? No information regarding this is given in the EIA report. So, provide copy of NOC and CCA approval issued by GPCB for burning carbon in boiler.	1. It is to note that, unit has proposed to use Briquettes as a fuel in boiler from which pollution load will be lesser compare to coal and LDO. Details regarding the same is provided in section 2.9.1 of chapter 2 in the EIA report. In addition to this, same details were provided in Executive Summary of the project (in both English and Gujarati language). The unit has a valid consent copy of which is given in the EIA report.	Letter to District Collector, Tapi and Regional Officer Gujarat Pollution Control Board, Gandhinagar on dated 29/05/2023
				2. If coke and coal are to be used as fuel in the company, show the amount of sulphur and ash in this coal. And provide the laboratory report for the same along with their original place of manufacture.	2. Not applicable. No coke or coal will be used as fuel for the proposed project.	
				3. This company is already located here so it is bound to do things according to CSR/CER (Corporate Social Responsibility/Corporate Environmental Responsibility). Give details including amount of annual expenditure.	3. It may be noted that the unit has obtained permission to work for Plywood, Checkerwood, Truckwood in January, 2022 i.e. about 1 year. At present the unit has provided donations/funds for some development works activities in	

					nearby villages. In addition to this, unit has proposed to provide Rs. 19 Lakhs (2% of total capital cost i.e., Rs. 9.5 Crore, as per OM issues vide letter no. 22-65/2017-IA.III on dated 1st May, 2019 by MoEF&CC) as a part of CER activities after obtaining EC for activities related to environment and renewable energy resources and for health, hygiene and education in surrounding villages. Details regarding the same is provided in chapter 8 of EIA report.		
				4. Hazardous waste (ETP & STP sludge, Salt from Evaporator, Used Oil, Discarded Drums, Bleed Liquor, Off specification waste) will be generated as per Form-1 of the company. No information about the quantity of this hazardous waste is given in the reports that are provided. If this type of hazardous waste is extremely harmful to the environment and public health, where will this waste be disposed of? If there is an agreement with any TSDF site for the disposal of this hazardous waste, provide a copy of it.	4. Details regarding hazardous waste quantity along with sources and their management is provided in section 2.9.3 of chapter 2 of EIA report as well as in executive summary distributed in villages in Gujarati as well as English language. Agreement with the nearby TSDF site and authorized co-processers etc. will be carried out after obtaining EC.		
				5. Whether STP is currently located in	5. Not applicable.		

					the company or not? Please provide details. Provide copy of analysis report for last 3 years regarding STP.	At present the STP is not located and its water goes into the ditch. For which proper permission has been obtained from the Board.	
				6.	The EIA report indicates that 18.2 kilo-liters of water will be used per day. There is no information on source of this water in report. Please provide in the final EIA report. If there is an agreement with water supply department for this, please provide details of the same.	6. It is to note that, total fresh water requirement for the proposed project will be 18.3 KLD which will be sourced through borewell only. Same is mentioned in section 2.8.2 of chapter 2 in EIA report. Permission to draw water from borewells will be taken from CGWA.	
				7.	The Zero Liquid Discharged (ZLD) System condition in the ToR of the project proposed to the company by the Ministry of Environment should be followed by the company as the currently located company's unit discharges polluted water into the canals of the surrounding area of the village causing pollution of the surrounding water which is blocked. I demand that the supplementary approval be given only after verifying the matter.	7. The unit has proposed the entire ZLD facility. No waste water will be discharged outside.	
				8.	Give information about the number of notices given to the company by GPCB till date for violation of environmental laws.	8. Unit has submitted justifications and replies for Notices received from GPCB to concerned authorities. Details regarding the same is available to the	

					respective governmental authorities.		
				9. Due to coming up of this project, there will be continuous emission of toxic/harmful gases in the air and harmful effects of air pollutants (PM, SOx, NOx, VOC) on the land of surrounding villages. And farm production will decrease day by day and farmers will have to suffer from pollution. So that air pollution control devices are installed in proper and adequate quantities.	9. There will be emissions of PM, SO2 and NOx from the operation of utilities, for which the unit has proposed multicyclone separator, bag filter and two stage alkali scrubber with 35 m stack height as air pollution control measures as per guidelines provided by GPCB. Monitoring will be done by the unit to a third party whose information is given in Chapter 6 of the EIA report.	
				10. In how many hectares of areas, trees have been planted by the company? According to the consent of GPCB, it is mandatory to plant trees in 33 percent area of the company. Which does not appear to have been done by looking at the Google image. Which should be done and then environmental clearance should be given to the proposed project.	10. Unit has proposed to develop greenbelt in area of 7570 m2 which will be developed after obtaining EC. Unit has proposed to provide funding of Rs. 20.7 Lakhs for development of greenbelt. Details regarding greenbelt development plan is provided in section 10.5.5 of chapter in the EIA report.		
				11. What technology will be used to reduce airborne particles in the work zone? State in detail what capacity and where it will be installed.	11. The entire manufacturing activity will be carried out in a closed system so that there is minimum pollution in the work-zone.		
				12. Provide a copy of the Notified	12. Not applicable as the proposed project site is		

		Industrial Area (Notified Industrial Area) order declared for this project area.	outside the industrial area. A copy of the land document is given as Annexure 2 in the EIA report.	

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Comments:

PP presented the issues raised by participant and issues received through written representation and its reply given by PP as mentioned in Public Hearing proceedings. Also, time bound action plan for issues raised during public hearing are found satisfactory.

9) **SITING CRITERIA DETAILS (OTHER THAN GIDC):**

Sr. no.	Environmental Sensitivity	Name/Specific details	Siting criteria as per GPCB guidelines dated: 05.06.2022 & its amendment	Aerial Distance in Km
1	Habitat (Residential Area)	Bajipura Village	500 m	1.1 km
2	Water Bodies			
	River	Mindhola River	500 m	1.5 km
	Lake/Pond/Wetlands	Pond near Bajipura	500 m	1.9 km
3	Protected Monuments/Heritage sites/Public Buildings i.e., School, colleges, etc.	Bajipura Highschool	500 m	1.4 km
4	National/State Highway OR Express way	NH – 53	75 m	0.7 km
5	Coastal Regulation Zone (CRZ) (In case of Coastal area projects)	Not Applicable	-	-

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Comments:

SEAC has deliberated on siting criteria i.e., habitation, river/ natural drain/ lake/ pond/canal/ reservoirs, protected monuments/ heritage sites/public buildings i.e. Schools, colleges, Coastal Regulation Zone (CRZ), etc. are found satisfactory.

10) A. **APPLICABILITY OF GENERAL CONDITIONS AND COMMENTS WITH SPECIFIC CLARIFICATION OF MOEF&CC GUIDELINES:** Any project or activity specified in Category 'B' will be appraised at Central level as Category 'A' if located in whole or in part within 5 Km radius from the project boundary of:-

Sr. No	Particulars	Aerial Distance in Km
1.	Protected Areas notified under the Wildlife (Protection) Act 1972 (53 of 1972)	Purna Wildlife Sanctuary at distance of around 21.5 km in South East Direction.
2.	CPA/SPA (Critically Polluted	GIDC, Sachin at distance of around

	Area/Severely Polluted Area) as identified by the CPCB	41 km in west direction.
3	Eco sensitive areas as notified under sub-section (2) of section 3 of EPA-1986	Purna Wildlife Sanctuary at distance of around 21.5 km in South East Direction.
4	Interstate boundaries and international boundaries	Gujarat-Maharashtra Inter-state boundary at distance of around 33.5 km in East Direction.

Comments:

As per MoEF&CC's notification dated: 25.06.2014 and as per details submitted by PP, General condition is not applicable.

B. Ensure compliance of category as defined in the amendment to EIA Notification, 2006 vide SO 1599 (E) dated 25/06/2014. i.e.Conditions of small units: (in case of 5 (f) category units and outside the GIDC)

<table>
<tr><th>Sr. no.</th><th>Condition</th><th>Compliance with justification</th></tr>
<tr><td>1</td><td>Water consumption less than 25 M^3/day;</td><td>Complied.
Fresh water Consumption will be 18.3 KLD. Detailed breakup is provided further in section 15.</td></tr>
<tr><td>2</td><td>Fuel consumption less than 25 TPD;</td><td>Complied.
-
<table>
<tr><th>Sr. No.</th><th>Fuel</th><th>Fuel Required for</th><th>Max Quantity Required</th></tr>
<tr><td>1.</td><td>Briquettes</td><td>Boiler <u>or</u> TFH (Standby*)</td><td>24 MT/Day</td></tr>
<tr><td>2.</td><td>Diesel</td><td>D.G. Set (Standby**)</td><td>105 Lit/Hr.</td></tr>
<tr><td colspan="4">Note:
*Unit will use TFH in case of break down or maintenance of boiler only.
** D.G. set will be kept stand-by only and will be used during power cut-off only.</td></tr>
</table>
-</td></tr>
<tr><td>3</td><td>Not covered in the category of MAH units as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989 as per the legal undertaking submitted with EIA report.</td><td>Complied.
It is to note that, Storage of Hazardous chemicals will be below the threshold limit and will not be covered under the category of MAH units as per MOEF & CC OM dated 25/06/2014. Details of Raw materials required for proposed manufacturing process is provided below:
-
<table>
<tr><th>Sr. No.</th><th>Name of the Product</th><th>Name of the Raw Material</th></tr>
</table></td></tr>
</table>

			1	Phenol Formaldehyde Resin	Phenol Formaldehyde (37%) Caustic Lye

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It is to note that, in column 3 of list provided in schedule 3 of the gazette notification issued by MoEF&CC vide S.O. No. 966 (E) dated 27th November, 1989 (Manufacturing, Storage and Import of Hazardous Chemicals Rules, 1989), Formaldehyde (37 %) is not listed.

However, unit will require Formaldehyde having concentration of 37% only, unit will not be covered in the category of MAH units as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989".

Comments:

As per details submitted by Project Proponent, it is "small scale" unit.

11) **AREA ADEQUACY AND COMMENTS**

Total Land area: 22396 m^2

Floor-wise land area break-up table

Area Adequacy table:

Sr. No	Components	Area required (sq. m)	Area Provided (sq. m)	Percentage (%)
1.	Office & OHC	156	156	0.7
2.	Shed - 1	4401	4401	19.7
3.	Shed - 2	1379	1379	6.2
4.	Shed - 3	1033	1033	4.6
5.	Production Area	150	256	3.0
6.	Utility Area	100	192	0.9
7.	Fuel Storage Area	100	320	1.4
8.	Raw Material Storage Area	100	223	1.0
9.	Finished Product Storage Area	100	186	0.8
10.	Haz. Waste Storage Area	100	168	0.75
11.	ETP & STP Area	75	168	0.75
12.	Changing Room and Canteen Area	540	540	2.4
13.	Security Cabin	18	30	0.1
14.	Green Belt Area	7391	7570	33.8
15.	Parking	260	260	1.2
16.	Road Area	5213	5213	23.3

Total	21086	22396	100

Comments:

SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.

12) **GREEN BELT CONDITIONS AND MEASURES ALONG WITH AREA:**

Total Plot area (Sq meter)	Total Green belt area (Sq meter)	% of Greenbelt
22396	**Inside:**7570 **Outside:**00	33.8

Details of copy of permission letter of concern GIDC/ Panchayat/etc. for greenbelt development (in case of greenbelt development outside the premises: Not Applicable

Comments:

- The PP shall develop green belt within premises (7570 Sq. m i.e. 33.8 % of the total plot area) as submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

13) **EMPLOYMENT GENERATION:**

Permanent	Contractual	Total
30	15	45

-

14) **SOURCE OF WATER SUPPLY WITH QUANTITY AND PERMISSION (DETAILS OF CGWA IF BOREWELL**

a) Source of water supply: Borewell
b) **Total Fresh water quantity (KLD):** 18.3 KLD
c) Permission of concerned authority (Name and quantity (in KLD): Application for withdrawal of Ground water has been carried out vide Application No. 21-4/11266/GJ/IND/2023 on 20/10/2023. Screenshot of the same is provided below:

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Comments:

PP has obtained permission from Central Ground Water Authority (CGWA) for procurement of water.

15) **WATER CONSUMPTION RELATED DETAILS WITH COMMENTS**

Category	As per existing CC&A (KLD)	Proposed (KLD)	Total (KLD)	Remarks
(A) Domestic	1	0.5	1.5	
(B) Gardening	0	9.6	9.6	9.6 Fresh + 1.4

				Recycled from STP
Industrial				
Process	0	1.6	1.6	
Washing	0	1	1	
Boiler	2.5	7.9	7	7 Fresh + Condensate
Cooling			3	3 Makeup + Recirculate
Others (Scrubber)			0.4	
(C) Industrial Total	**2.5**	**10.5**	**13**	
Grand Total (A+B+C)	**3.5**	**20.6**	**24.1**	
Total Water to be recycled			**5.8**	
Total Fresh Water Requirement			**18.3**	

Comments:

PP has submitted the above water consumption which is calculated considering the worst case scenario and in no case the water requirement shall not exceed the same which is found satisfactory.

16) **WASTE WATER GENERATION AND DISPOSAL**

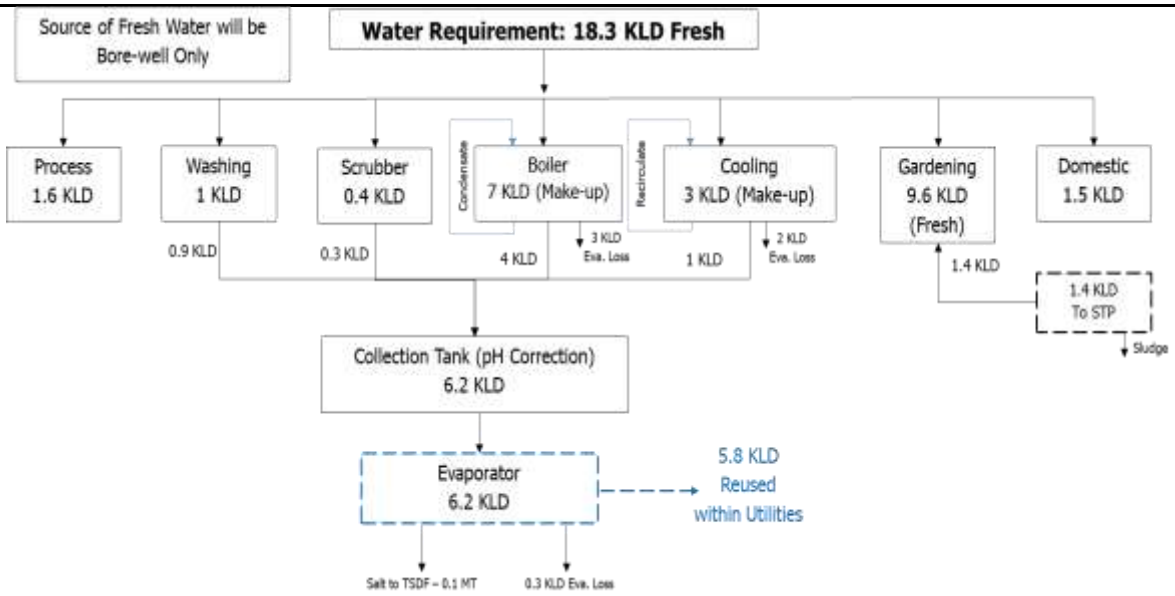
Category	As per existing CC&A (KLD)	Proposed (KLD)	Total (KLD)	Remarks
(A) Domestic	0.8	0.6	1.4	
(B) Industrial				
Process	0	0	0	
Washing	0	0.9	0.9	
Boiler	0.05	5.25	4	7 Fresh + Condensate
Cooling			1	3 Makeup + Recirculate
Others (Scrubber)			0.3	
Industrial Total	**0.05**	**6.15**	**6.2**	
Grand Total (A+B)	**0.85**	**6.75**	**7.6**	

Justification in case of increase/ drastic reduction in wastewater generation than water Consumption: Not Applicable. No stream segregation will be carried out.

Comments:

PP has submitted the above wastewater generation which is calculated considering the worst case scenario and in no case the wastewater generation shall not exceed the same which is found satisfactory.

17) **SIMPLIFIED WATER BALANCE DIAGRAM**



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18) **BREAKUP OF WASTE WATER DISPOSAL (DOMESTIC & INDUSTRIAL BOTH)**

Sr. no.	Quantity KLD	Facility
1	6.2 KLD	Effluent generated from Utilities shall be treated in ETP consisting of evaporator for complete ZLD.
2	1.4 KLD	Domestic wastewater shall be treated in Shall be send to packaged STP. Treated water from STP will be used in gardening.
Total	**7.6 KLD**	Generated effluent will be treated into in-house ZLD based effluent treatment plant only by which there will be no discharge of effluent outside the plant premises.

Comments for Domestic Effluent:

- Domestic wastewater generation shall not exceed 1.4 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.

Comments for Industrial Effluent:

1. Management of Industrial effluent shall be as under:
   - 6.2 KLD of effluent generated from Washing (0.9 KLD), Boiler (4 KLD), Cooling Tower (1 KLD), Scrubber (0.3 KLD) shall be treated in Collection tank (PH correction) followed by Evaporation system and thus there shall be no discharge of any industrial effluent into an environment like drain, land etc and shall maintain Zero Liquid Discharge

19) **MECHANISM AND METHODOLOGY OF STREAM SEGREGATION**
Not Applicable

20) **STP AND/OR ETP SPECIFICATION AND DESIGN AND ITS CAPACITY**

Flow Rate: 6.2 KLD **Design Capacity: 10 KLD**			
Sr. No.	**Name of Equipment**	**Nos. of Unit**	**Specification**
1.	Collection Tank cum neutralization	1	Type: Circular Tank Diameter: 2.5 m Height: 2.4 m Capacity: 10000 Litres MOC: HDPE
2.	Dosing Tank	2	Acid Tank: 100 Litres Alkali Tank: 100 Litres
3.	Evaporator	1	Capacity: Feed: 1 KL/hr Operating Hours: 10 hrs Inlet parameter: pH: 6.5-8.5
4.	Treated Water Storage Tank	1	Type: Circular Tank Diameter: 2.5 m Height: 2.4 m Capacity: 10000 Litres MOC: HDPE

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21) **TREATABILITY OF WATER**

Parameter	**Unit**	**Raw effluent characteristics**	**Treated water from Evaporator**
pH	-	6.5-8.5	6.5-8.5
TDS	mg/l	2500-3000	< 250
COD	mg/l	600-800	< 150
SS	mg/l	<100	< 100

(Source: Through Treatability study of Similar Industry)

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22) **SUMMARY OF WATER USE AND REQUIREMENT OF FRESH/REUSED WATER**

Summary of water requirement	**Quantity KLD**	**Remarks**
Total water requirement for the project **(A)**	24.1	-
Quantity to be **recycled (B)**	5.8	-
Total **fresh water** requirement **(C)**	18.3	-
Ensure **Total water requirement = Fresh water + Recycled water** **i.e. A = B + C**		

-

23) **REUSE, REDUCE, RECYCLE RECOVERY MEASURES ADOPTED**

a) Reduce

Sr. No.	**Item**	**Quantity**	**% percentage**
1	Water Requirement	5.8 KLD	24 %

b) Reuse

Sr. No.	**Item**	**Quantity**	**% percentage**
1	Boiler Condensate	70 KLD	91 %
2	Cooling Tower Recirculate	52 KLD	94.5 %

c) Recycle

Sr. No.	Item	Quantity	% percentage
1	Treated water from Evaporator	5.8 KLD	24 %
2	Treated water from STP	1.4 KLD	12.7 %

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24) **FLUE GAS EMISSION**

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
As per Existing CC&A						
1	Boiler (7 MT/Hr)	Height: 35 m	Wood	15 MT/Day	PM, SO_2, NOx	Multicyclone Separator, Bag Filter and water scrubber
2	D.G. set (325 KVA)	Height: 9 m	Diesel	50 Lit/hr		9 m stack height
Proposed Additional						
1	Thermic Fluid Heater (400 U) **Stand-by**	Height: 35 m	Briquettes	22 MT/Annum	PM, SO_2, NOx	Multicyclone Separator, Bag Filter and two stage alkali scrubber with 35 m Stack Height
Proposed Total						
1	Boiler (7 MT/Hr)	Height: 35 m	Briquettes	24 MT/ Day	PM, SO_2, NOx	Multicyclone Separator, Bag Filter and two stage alkali scrubber with 35 m Stack Height
2	Thermic Fluid Heater (400 U) **Stand-by**		Briquettes	22 MT/Day	PM, SO_2, NOx	Multicyclone Separator, Bag Filter and two stage alkali scrubber with 35 m Stack Height
3	DG Set (325 KVA) **Stand-by**	Height: 9 m	Diesel	105 liter/Hr	PM, SO_2, NOx	As Diesel is proposed as fuel, 9 m stack height will be provided

Note:

i) Unit will use Thermic Fluid Heater only in case of break down or shut down of boiler.

ii) Unit has proposed to change fuel in utility i.e., usage of briquettes instead of wood and also considering working hours of the boiler, quantity of the required fuel will also increase.

Comments:

- The proposed fuel to be used is approved fuel for the requirement of the heat energy and proposed the Air pollution Control measures and stack height so as to achieve the emission norms prescribed by the competent authorities are found satisfactory.

25) **PROCESS GAS EMISSION**

Sr. No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
As per Existing CC&A				
1	Nil	-	-	-
Proposed additional				
1	Reaction Vessel	VOC Fumes	11 m	Two Stage Alkali Scrubber
Proposed Total				
1	Reaction Vessel	VOC Fumes	11 m	Two Stage Alkali Scrubber

Comments:

- The proposed Air pollution Control measures and stack height so as to achieve the emission norms prescribed by the competent authorities are found satisfactory.

26) **FUGITIVE GAS EMISSION**

Sr. No.	Source	Probable Pollutant Emission	Control Measures/ APCM
1	Storage tank	Air pollutant (VOC)	iii) Carry out work place area monitoring to find out concentration level in ambient air Close handling system. iv) Provision of breather valve cum flame arrester.
2	Handling of raw material bags in storage area	Air pollutant (PM)	iii) Provision of exhaust ventilation Provision of PPE. iv) Provision of Job rotation to reduce exposure.
3	Flange joints of pipeline, pump & motors	Air pollutant (VOC)	iv) Routine &periodic inspection to check leakage. v) Preventive maintenance, Follow SOP for maintenance. vi) Pumps & motors will be mechanical seal type. vii) LDAR program will be followed. Provision of Flange guard.
4	Solid raw material transferring to reactor	Air pollutant (PM)	Hopper will be provided with powder transfer system.
5	Liquid raw material transferring to reactor	Air pollutant (VOC)	Feeding of liquid raw material will be carried out by closed pipeline and mechanical sealpump.
6	Loading /unloading at storage area	Air pollutant (VOC)	Unloading through pipeline to tank in a close system.

Comments:

The air pollution control measures proposed for fugitive gas emission are found satisfactory.

27) **HAZARDOUS PROCESSES AND ITS SAFETY MEASURES**

Types of process	Safety measures including Automation
Not Applicable	-

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28) **SOLVENT MANAGEMENT (For example)**

Not applicable as no solvent will be used.

29) **VOC EMISSION AND MITIGATION MEASURES FOR ACHIEVING MAXIMUM SOLVENT RECOVERY AND MINIMUM VOC GENERATION**

Not applicable as no solvent will be used.

30) **LDAR PROPOSED**

Leak Definition

- If a leak is detected whenever the measured concentration exceeds the threshold
- standard (i.e., leak definition) for the applicable regulation.
- Leak definitions vary by regulation, component type, service (e.g., light liquid, heavy
- liquid, gas/vapor), and monitoring interval.
- Many equipment leak regulations also define a leak based on visual inspections and
- observations (such as fluids dripping, spraying, misting or clouding from or around
- components), sound (such as hissing), and smell.

Following steps shall be followed for effective implementation of LDAR Program:

1. Process Controls
2. Emissions control program
3. Selection of appropriate method for leak detection
4. Scheduling and checklist for Leak Detection
5. Methods for rectification of identified leaks
6. Frequency of Monitoring
7. Record keeping of LDAR Program

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Leakage/ Component	Source of equipment leak	Detection Method
Valves	Flange leakage	Visual Check
Pump	From pump seal	Visual Check
Open vents from the tank top	Overflow of tank	High level alarm
High pressure leak	-	Audible Method
Connectors	Gasket failure and improperly torqued bolts on flanges.	For welded flanges place the probe at the outer edge of the flange-gasket interface and sample the circumference of the flange. If the source is rotating shaft, position the probe within 1 cm of the shaft seal interface for the survey.

Open ended line	At the point of line Incorrect implementation of block and bleed procedure	Place the probe inlet at approximately the entry of the opening to the atmosphere.

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31) **LDAR FOR SPECIFIC SOLVENT (For example)**

Not applicable as no solvent will be used.

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32) **HAZARDOUS WASTE MANAGEMENT MATRIX**

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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
				As per existing CC&A	Proposed Additional	Proposed Total	
1	Used Oil	From Plant/Machineries	5.1	0.15	5.85	6	Collection, Storage and Send to Authorized Recycler.
2	Empty Barrels/ Bags/ Drums/ Carboys	From Raw Material/Products Storage Area	33.1	0.500 (i.e., 200 Nos.)	4800 Nos.	5000 Nos.	Collection, Storage and Send to Authorized Recycler.
3	Salt	From Evaporator	35.3	0	6	6	Collection, Storage, Transportation, disposed by Landfilling to Common TSDF Site.
4	Off Specification Products	In case of Batch Failure during Production	28.4	0	12	12	Collection, Storage, Transportation and Send to CHWTSDF Site for Incineration / Send to Cement Industries for Co-Processing.
5	Bleed Liquor	From Scrubber (From process gas stack and flue gas stack)	--	0	0.3 KL/Day (i.e.,108 KL/Year)	0.3 KL/Day (i.e.,108 KL/Year)	Collection and treated into ETP consisting of

							evaporator.

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Comments:

- Hazardous waste management includes collection, storage, transportation and disposal at TSDF, captive/ common incineration, co-processing/ pre-processing, sold to authorized actual users having Rule-9 permission and recycle/ reuse of waste. SEAC examined the details provided and found it as per requirement.

33) **NON-HAZARDOUS WASTE MANAGEMENT MATRIX**

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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
				As per existing CC&A	Proposed Additional	Proposed Total	
1	Sewage Sludge	From STP	--	0	1.2	1.2	Collection, Storage, and reused as a manure in gardening or sent to TSDF site for landfilling.
2	Ash	From Utility	--	0	432	432	Collection, Storage and Send to brick manufacturing unit or road construction activity.
3	C&D Waste	From construction and demolition activities	--	0	As generated	As generated	Generated waste will be collected, stored and managed as per C&D waste management rules, 2016.

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Comments:

- Other wastes management includes collection, storage, transportation and disposal by selling to actual users and recycle / reuse of waste. SEAC examined the details

provided and found it as per requirement.

34) **STORAGE SAFETY MEASURES**

a) Storage of Hazardous chemicals in Tanks

Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
TANK FARM (NON-PESO)				
1	Phenol	10 KL	2	Toxic
2	Formaldehyde (37 %)	15 KL	2	Toxic
3	Phenol Formaldehyde Resin	20 KL	2	Toxic
		10 KL	1 (Spare)	
TANK FARM (PESO)				
1	None	-	-	-

Safety Measures for PESO Underground storage tank farm: Not Applicable

b) Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

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Sr. no	Name of Chemical	Capacity of Drum/Bag/ Cylinder/ Glass Bottle	Number of Drum/Bag/ Cylinder/ Glass Bottle	Hazardous Characteristics of Chemical
1	Caustic	50 kg bags	30 bags	Corrosive

Safety measures for Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
CORROSIVE CHEMICALS	• Preventing or minimizing contact between corrosive substances and skin, mucous membranes and eyes. • Corrosive substances should not be allowed to come in contact with materials that may react. • All the containers, pipes, apparatus, installations and structures used for the manufacture, storage, transport or use of these substances may be protected by suitable coatings, impervious to and unaffected by corrosives. • All containers or receptacles should be clearly labelled to indicate their contents and should bear the danger symbol for corrosives. • Adequate ventilation and exhaust arrangement whether general or local, should be provided whenever corrosive toxic gases or dust are present. • Personal protective devices shall be used • First aid treatment facilities shall be provided and all concerned should be instructed to follow safe practices such as (a) Prolonged washing with water (b) Removing contaminated clothing (c) Seeking immediate medical help. • Safety showers and eye washers is provided.
TOXIC	• Ventilation must be sufficient to prevent accumulation of vapor

	CHEMICALS	pockets. All fan switches should be outside the storage area. • Self-breathing apparatus, gas mask and 'emergency kits' should be located at strategic points under working condition and to be easily accessible in the event of emergency. • Appropriate minimum safety distances as stipulated in the above mentioned rules have to be maintained from buildings or group of buildings or adjacent property.
	REACTIVE CHEMICALS	• Store minimum quantities • Segregate chemicals, e.g., from water, air, incompatible chemicals, sources of heat, ignition sources • Spillage control; bund, spray, blanket, containment. Drain to collection pit • Decontamination and first-aid provisions, e.g., neutralize/destroy, fire-fighting • Contain/vent pressure generated to a safe area • Split-up stocks into manageable lots, e.g., with reference to fire loading/spillage control. • Ensure appropriate levels of security, hazard warning notices, fences, patrols. Control access including vehicles • Appropriate gas/vapour/fume/pressure venting, e.g., flame arrestors, scrubbers, absorbers, stacks • Ensure adequate natural or forced general ventilation of the storage area Provide adequate, safe lighting • Label (name and number); identify loading/unloading/transfer couplings • Provide appropriate fire protection (sprinkler, dry powder, gas) • Ensure adequate access for both normal and emergency purposes with alternative routes

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35) **FIRE LOAD CALCULATION**

Total Plot Area:	22,396
Area utilized for plant activity:	256 m^2
Area utilized for Hazardous Chemicals Storage:	409 m^2
Number of Floors:	Ground + 1
Water requirement for firefighting in KLD:	77 KL
Water storage tank provided for firefighting in KLD:	200 KL
Details of Hydrant Pumps:	Jockey Pump: 25 m^3/h Electrical Fire Pump: 273 m^3/h Trailer Pump: 108 m^3/h
Nearest Fire Station :	Fire station of Vyara Municipal Corporation 15.8 km (E)
Applicability of Off Site Emergency Plan:	Yes. Details regarding the same is provided in chapter 7 of the EIA report.

Comments:

The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 200 KL. SEAC found it as per the requirement.

36) **WORKERS SAFETY AND OCCUPATIONAL HEALTH MANAGEMENT**

Details of OHC:

Number of permanent Employee :	Unit has tie up with one doctor for medical checkup on regular basis.
Number of Contractual person/Labour :	-
Area provided for OHC:	30 m^2
Number of First Aid Boxes :	Minimum 03 at different places within plant premises
Nearest General Hospital :	PHC – 3.5 Km (W), Manekpore
Name of Antidotes to be store in plant :	As mentioned below:

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Chemical	Antidote / Medical Treatment
Formaldehyde	• There is no specific antidote or treatment for formaldehyde poisoning. Doctors can treat the symptoms and effects of exposure. • The general public is exposed to harmless, low levels of formaldehyde daily. Persons exposed to high levels of formaldehyde, or exhibiting symptoms of exposure, should be quickly removed from the source. -
Phenol	• In case of inhalation, evaluate vital signs including pulse and respiratory rate, and note any trauma. If no pulse is detected, provide Cardiopulmonary resuscitation (CPR). If not breathing, provide artificial respiration. If breathing is laboured, administer oxygen or other respiratory support. • Remove phenol from skin with undiluted polyethylene glycol 300 or 400, if available. If not available, use water. Follow polyethylene glycol wash with a water wash. Wash exposed skin areas for at least 15 minutes with large amounts of water.

General Advice:	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Eye Contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact:	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Inhalation:	f breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove to fresh air. Immediate medical attention is required.
Ingestion:	Do NOT induce vomiting. Call a physician or poison control center immediately.

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Health checkup of workers shall be carried out on regular basis by nearby Hospital/ Health care facilities.

Comments:

Project proponent has provided PPEs, Occupational health center (OHC) with adequate provision of manpower, equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

37) **DETAILS OF MEMBERSHIP OF COMMON FACILITIES:**

Sr. No.	Membership for Common Facility	Membership Certificate issuing agency along with Date of Issue and validity of membership
01	CETP	Not Applicable as unit has proposed in-house ZLD based effluent treatment plant.
02	TSDF site	Unit will apply for membership certificate
03	Common Hazardous Waste Incineration Facility	Unit will apply for membership certificate
04	Common Spray Drying Facility	Not Applicable as unit has proposed in-house ZLD based effluent treatment plant.
05	Common MEE Facility	Not Applicable as unit has proposed in-house ZLD based effluent treatment plant.
06	Common Conveyance System	Not Applicable
07	PESO permission	Not Applicable
08	FIRE permission	Will be obtained after receipt of Environment Clearance.
09	Health Certificate	Unit will tie up with one doctor on permanent basis.

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38) **EMERGENCY MEASURES PROPOSED AND PREPAREDNESS ACTION PLAN**

Details regarding the same is provided in chapter 7 of the EIA report.

39) **CER ACTIVITIES PROPOSED YEAR WISE/ IN CASE OF EXPANSION ANY ADDITIONALITY SUGGESTED AND ITS COMPLIANCE (AS PER THE MOEF & CC GUIDELINES)**

Total cost of Project (Rs. in Crores)	Total Cost of CER (Rs. in Crores or Lakhs)	Percentage (%)
9.5	19 Lakhs	2 %

Sr. No	Activities	Name of Villages	Cost (Rs in Lakhs)
1	Funds for Environment & Renewable energy resources	Tokarva, Butwada	Rs. 15 Lakhs
2	Health, Hygiene & Education	Manekpore, Titwa, Inama	Rs. 4 Lakhs
	Total		**Rs. 19 Lakhs**

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Funds for Environment & Renewable energy resources				
Village	**Activity**	**Unit Rate**	**Numbers**	**Total Amount**
Tokarva	Tree Plantation and maintenance	Rs. 750 /-	600	Rs. 4,50,000 /-
	Installation of Solar Street Light (60 W)	Rs. 12000 /-	50	Rs. 6,00,000 /-
Butwada	Tree Plantation and maintenance	Rs. 750 /-	600	Rs. 4,50,000 /-
	Total			**Rs. 15,00,000 /-**

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Funds for Health, Hygiene & Education				
Village	**Activity**	**Unit Rate**	**Numbers**	**Total Amount**
Manekpore	Providing Projectors at Gov. Primary School, Manekpore	Rs. 20,000 /-	4	Rs. 80,000 /-
Titwa	Providing Drinking Water Facility (Portable RO) at Gov. Primary School	Rs. 40,000 /-	3	Rs. 1,20,000 /-
Inama	Supply of Medical equipment	Rs. 2,00,000 /-	-	Rs. 2,00,000 /-
	Total			**Rs. 4,00,000 /-**

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Comments:

As per MoEF&CC's OM dated: 01.05.2018 and 30.09.2020, SEAC examined that the proposed cost of CER i.e 2 % (Rs 19 Lakhs) which is as per the requirement.

40) **ENVIRONMENT MANAGEMENT PLAN (ESPECIALLY WITH CEPI AND NON CEPI GUIDELINES, AS MAY BE APPLICABLE)**

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Sr. No	**Unit**	**Capital Cost (Per Annum)**		**Total Recurring Cost (Per Annum)**	
		Activity	**Rs. In Lakhs**	**Activity**	**Rs. In Lakhs**
1	Wastewater	ETP, Evaporator, etc.	10.00	Power consumption, maintenance cost of entire ETP	28.00
2	Air	Upgradation of existing Air Pollution Control Equipment and installation of proposed APCM i.e., Multicyclone Separator, Bag Filter, and two stage alkali scrubber, Stack and monitoring platform.	25.00	Power consumption and maintenance of APCM	10.00
3	Hazardous Management	Installation of Solid/Liquid Waste and Haz. Waste Storage Area	5.00	Transportation and disposal cost	3.00
4	Noise Control	Acoustic enclosure for D.G. Sets and other Noise Generating Equipment	1.00	Maintenance cost	0.5
5	Green Belt Development	Plant Seeds, Pit making, Soil, Gardener, fertilizer, water supply etc.	6.30	Gardener's cost, Fertilizer's cost, Water supply cost etc.	3.60
7	For Fire & Safety	Installation of Fire Hydrant Pipelines and installation of pumps, Automatic alarm system, tripping system, Fire extinguisher, Fixed & Portable Fire Fighting system, PPEs, Fire Proximity Suits, Fire tender, PLC with SCADA System	33.0.	Maintenance of equipment	4.0

8	For Occupational Health and Safety	Development of Occupational Health Centre/ First Aid Centre, Antidotes, First Aid Boxes, PPEs Kits etc.	2.0	Tie up with doctors, medical examiners and expenses.	1.0
9	Environment Monitoring Program	In-house Monitoring Facility	5.0	In-house analysis, Third party cost for environmental monitoring and Statutory compliance and chartered services	6.0
10	CER	Funds allotted for Corporate Environmental Responsibility Budget	19.0	-	-
11	Cost of conservation plan of Schedule-I species, if any	Peacock Conservation Plan	2.5	-	-
Total			**108.5**		**56.10**

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Comments:

The overall environment management plan (EMP) provided for capital and recurring cost for wastewater treatment, air emission control, noise control, hazardous waste disposal, fire & safety, occupational health, environment monitoring program, green belt and corporate environmental responsibility was deliberated and found satisfactory.

41) **RECOMMENDATIONS OF SEAC**

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and **unanimously** recommends the same to SEIAA for environmental clearance."

Conditions with which Environment Clearance is recommended:

42) **GENERAL CONDITIONS**

Construction Phase

a) "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum

up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades.

b) "No uncovered vehicles carrying construction material and waste shall be permitted."

c) "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured."

d) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).

e) No excavation of soil shall be carried out without adequate dust mitigation measures in place.

f) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.

g) Grinding and cutting of building materials in open area shall be prohibited.

h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.

i) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. Unit shall install CEMS **[Continuous Emission Monitoring System]** in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. **[For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].**
2. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
3. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
4. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
5. All measures shall be taken to avoid soil and ground water contamination within premises.
6. **Safety & Health:**

a) PP shall obtain PESO permission for the storage and handling of hazardous chemicals. (If applicable).
b) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
c) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
d) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
e) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
f) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
g) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
h) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
i) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
j) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
k) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.
l) The projectmanagement shall prepare a detailed Disaster ManagementPlan (DMP) for the project as per the guidelinesfromDirectorateof IndustrialSafety and Health.

WATER

7. Total water requirement for the project shall not exceed 24.1 KLD. Unit shall reuse 5.8 KLD of treated effluent within premises. Hence, fresh water requirement shall not exceed 18.3 KLD and it shall be met through borewell only. Prior permission from concerned authority shall be obtained for procurement of water.
8. The industrial effluent generation from the project shall not exceed 6.2 KLD.
9. Management of Industrial effluent shall be as under:
    - ✓ 6.2 KLD of effluent generated from Washing (0.9 KLD), Boiler (4 KLD),

Cooling Tower (1 KLD), Scrubber (0.3 KLD) shall be treated in Collection tank (PH correction) followed by Evaporation system and thus there shall be no discharge of any industrial effluent into an environment like drain, land etc and shall maintain Zero Liquid Discharge

10. Domestic wastewater generation shall not exceed 1.4 KL/day for proposed project and it shall be treated in STP.It shall not be disposed off into soak pit.Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
11. During monsoon season when treated sewage may not be required for the plantation / Gardening / Green belt purpose, it shall be stored within premises. There shall be no discharge of waste water outside the premises in any case.
12. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
13. Complete Zero Liquid Discharge [ZLD] status shall be maintained all the time and there shall be no drainage connection from the premises.
14. Unit shall provide STP and ETP with adequate capacity.
15. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
16. Proper logbooks of ETP; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

17. Unit shall not exceed fuel consumption for Boiler, Thermic Fluid Heater and D G Set as per the point no. 24 as mentioned above.
18. PP shall use approved fuels only as fuel in Boiler, Thermic Fluid Heater and D G Set.
19. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
20. Unit shall provide adequate APCM with process gas generation sources as the point no. 25 as mentioned above.
21. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety& Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly to

reduce the fugitive emission during vehicular movement.

- Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
- A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.

22. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
23. For control of fugitive emission, VOCs, following steps shall be followed :
    a. Closed handling and charging system shall be provided for chemicals.
    b. Reflux condenser shall be provided over Reactors / Vessels.
    c. Pumps shall be provided with mechanical seals to prevent leakages.
    d. Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.
24. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
25. Regular monitoring of ground level concentration of PM10, PM2.5, SO2, NOx and VOCsFumesshall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

26. All the hazardous/ solid waste management shall be taken care as per the point no. 32 and 33 as mentioned above.
27. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
28. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
29. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
30. STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.
31. Management of fly ash shall be as per the Fly ash Notification 2009 & its

	amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit. 32. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items. **GREENBELT AREA** 33. The PP shall develop green belt within premises (7570 Sq. m i.e. 33.8 % of the total plot area) as submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB. **OTHERS:** 34. The project proponent shall carry out the activities of amount of Rs. 19 Lakhs (Funds for Environment & Renewable energy resources at Tokarva, Butwada and Health, Hygiene & Education at Manekpore, Titwa, Inama) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent. 35. As proposed, at least Rs. 2.5 lakhs shall be allocated for the conservation plan Schedule- I species. (MoEF&CC) 36. The activities and the action plan proposed by the project proponent to address the socio-economic and public hearing issues in the study area, shall be completed as per the schedule presented before the Committee and as described in the EMP report in letter and spirit. (if Public consultation is applicable.) (MoEF&CC) 37. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. ENPRO Enviro Tech and Engineers Pvt. Ltd.and submitted by the project proponent and commitments made during presentation before SEAC and proposed In the EIA report shall be strictly adhered to in letter and spirit.
43)	**COMPLIANCE AND ADMINISTRATION/APPEAL OF EC ORDERS** 1. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through

	advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded. 2. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities. 3. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government. 4. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions. 5. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded. 6. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010. 7. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com& (b) seacgujarat@gmail.com		
6.	SIA/GJ/IND3/438198/2023	**M/s. Dyna Glycols Pvt. Ltd.** Plot no. 268 B, 269 B, 265, 266, 267, 270 A & 271, Sector 4, Kandla Special Economic Zone (KASEZ), Ta - Gandhidham,Dist. - Kutch (Gujarat) 370230.	**EC- Reconsideration**

Category: **5(f) – B1**

Project status: **EC- Expansion**

Project located either in CEPI or non CEPI **: non CEPI**

PP submitted salient features of the project including Water, Air and Hazardous waste management are as under from Sr. No. 1, 3 to 40. And in Sr. No. 2 detailed deliberation of Committee is mentioned. Comments of SEAC is given in relavant points.	
1)	**DETAILS OF APPLICATION:**

1.1 Type of application:	EC Expansion
1.2 Proposal no.	SIA/GJ/IND3/438198/2023
1.3 Category of Project :	5 (f) - B1
1.4 Date of application:	28.07.2023
1.5 Date of EDS by SEIAA a) EDS Raised b) Reply by PP	--
1.6 Date of EDS by SEAC a) EDS Raised b) Reply by PP c) Accepted by SEAC	18/08/2023 21/08/2023 01/09/2023
1.7 TOR No. & Date :	File No. SIA/GJ/161310/2022, dated 06.10.2022
1.8 Date and place of Public Hearing	Not applicable, project is located in KASEZ - Gandhidham
1.9 Name of accredited Environmental Consultant & address along with Accreditation No. & Validity	**Excel Enviro Tech** TF-2, Sun House, Old High Court Lane Off Ashram Road, Ahmedabad. Accreditation No: NABET/EIA/2124/RA 0234-Rev 01 Valid upto: June 27, 2024
1.10 SEAC Meeting No. and Date:	Meeting no. 710th, Dated 18.10.2023
1.11 ADS raised by SEAC meeting No & date :	Meeting no. 710th, Dated 18.10.2023
1.12 Reply Submitted by PP dated:	16.12.2023
1.13 Revised Consideration SEAC Meeting No. and Date:	SEAC Meeting no. 768th, Dated: 25.01.2024

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2) **DELIBERATIONS OF SEAC:**

1) This is an existing unit and now proposed for manufacturing of synthetic organic chemicals.
2) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
3) The proposal was considered in the SEAC video conference meeting **dated 18.10.2023.**
4) Project proponent (PP) and their Technical Expert/Consultant M/s Excel Enviro Tech remain present during video conference meeting.
5) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
6) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period October - 2022 to December - 2022. Ambient Air Quality

monitoring was carried out PM10, PM2.5, SO2 and NOx at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site will remain within the National Ambient Air Quality Standards (NAAQS).

7) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
8) Earlier PP obtained EC on dated: 16.05.2019 for which CTE is obtained. Unit is having Valid CCA vide letter no. AWH – 127684 dated: 17.07.2023. and valid upto dated: 02.05.2028 PP submitted that there is no legal court case and public complaint against unit.
9) Committee noted that as per MoEF&CC OM dated: 08.06.2022, unit has submitted Certified Compliance report dated 13-03-2023 of concerned authority.
10) PP has presented Plot allotment of SEZ Gandhidham of plot No. 268 – B & 269 – B of M/s. Dyna Glycols Pvt. Ltd. Dated: 27.02.2018.
11) PP has submitted Notorized undertaking vide certificate no. NABET/EIA/2124/RA 0234_REV01 valid upto dated: 27.06.2024.
12) PP has submitted TSDF Site membership certificate of M/s. Dyna Glycols Pvt. Ltd. Dated: 16.05.2019.
13) Committee noted that PP has not mention the Non – EC product (Blending) in product profile.
14) Committee noted that PP has not presented Amalgamation application/Documents of Plot no. 265, 266, 267, 270 A & 271 form KASEZ authority.PP was asked to submit land possession document of wach and every plot/block.
15) Committee asked whether the SEZ is a Notifed SEZ.
16) Committee asked PP for clarification of Spare tanks for storage of Ethyl oxide/ Propylene Oxide, in case of any emergency.
17) Committee asked PP for justification ofthe fuel (LPG & Natural gas) consumption in boiler & thermic fluid heater.
18) Committee asked PP regarding carbon footprint and carbon sequestration, specify the activities from where the carbon dioxide will generate and how you will sequencetration the same.

19) Committee noted that PP has not mention the separate Storage area of LPG cylinders.
20) Committee asked PP to submit the safety measures for Risk/Quantitative Analysis report of LPG & LDO.
21) Committee deliberated on compliance of TORs, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
22) PP presented salient features of the project including Water, Air and Hazardous waste management are submitted.
23) **After detailed discussion, Committee unanimously decided to consider the project in one of upcoming meeting only after submission of following documents :**
    1. Submit the Amalgamation application/Documents of Plot no. 265, 266, 267, 270 A & 271 form KASEZ authority. Submit Land possession documents for all the plots .
    2. Separate the Non-EC product (Blending) from Product profile and submit revised product list.
    3. Re-check & Revised details of Spare tanks proposed for storage of Ethyl oxide/ Propylene Oxide, in case of any emergency.
    4. Justify the fuel (LPG & Natural gas) consumption in boiler & thermic fluid heater and revise the quantity according to the Fuel utilise calculation.
    5. Mention the separate Storage area of LPG cylinders and mention in Area adequacy.
    6. Risk/Quantitative Analysis report of LPG & LDO. Submit the safety measures for the same.Carry out therat model for LPG.
    7. Regarding carbon footprint and carbon sequestration, specify the activities from where the carbon dioxide will generate and how you will sequencetration the same.
24) PP has submitted reply of above query generated on SEAC VC meeting, through Parivesh portal.
25) This proposal is reconsidered in SEAC VC meeting dated: **25.01.2024.**
26) PP along with their technical expert/consultant, M/s.Excel Enviro Techremains present in the meeting and made presentation before Committee.
27) During meeting, Committee noted that PP submitted following details:
    - ✓ Request letter for Amalgamation has been submitted to Revenue Department, KASEZ of Kutch District and the copy of acknowledgement slip Is submitted
    - ✓ We have to inform that current EC, CTE and CTO all are having similar nomenclature, where The Blend is part of product list.In other words, we want to say that; suppose 30 different organic products are manufactured in one group, in

same group, we have mentioned product no. 31as Blend of above. So, the total production will not increase in particular group.Further, if in proposed EC and CCA, we keep the same nomenclature and we mention blend as separate entity, it will not be possible for us to keep the records. SPCB may not permit us Blend as separate product in proposed activity under EC exemption because the EC has been obtained in past.

- ✓ We have provided total of 2 tanks of Ethyl oxide with a capacity of 20 KL each, one tank will always be kept empty for standby-purpose, 2 tanks of Propylene Oxide with a capacity of 50 KL each tank always keeping as empty for standby and 18 nos., of tanks for various raw materials like Propylene glycol, LA, TDA, DEG and others in various capacity. Details of Revised list of storage tanks are submitted**.** so, one tank of 20 Kl and one tank of 50 Kl will be available for emergency transfer same details in given in format at Sr. No. 34.
- ✓ Revised consumption of Fuel (LPG & Natural Gas) in boiler, TFH and revised quantity according to the Fuel utilize calculation are presented.
- ✓ Unit is and will be stored LPG in Cylinders. Unit is and will always store the LPG cylinder in an upright position and away from other combustible and flammable materials. We are using standards like ISI-approved tubes, stoves, regulators, and LPG appliances. Additionally, the unit will provide 142 m^2 area for LPG storage. The same is mentioned in the plant layout. Detailed plant layout & revised area adequacy has submitted.
- ✓ Risk/Quantitative Analysis report & Worst case scenario of LPG & LDO, Safety measures for LPG storage has submitted.
- ✓ Calculation of carbon sequestration against carbon footprint are presented.

28) During meeting committee asked for following details:

- ✓ To submit the undertaking for the following points: 1) All plots are adjoining to make close boundary polygon, 2) Plot allotment letters is obtained in name of PP, 3) Applied for amalgamation of plots to SEZ authority.
- ✓ Revised Spare tanks for storage of Ethyl oxide/ Propylene Oxide, in case of any emergency& Recheck the cylinder details of LPG.
- ✓ Mentioned figure of the affected population in Risk/Quantitative Analysis report.
- ✓ To revise fuel consumption in thermic fluid heater.
- ✓ Submit the SEZ Notification and all plot allotment letter with name of Company.

29) Later on PP has submitted following details through letter dated 07.02.2023;

- ✓ PP has submitted undertaking dated 21.01.2024 ;

" *we hereby undertake that all the plots are adjoining to our existing set up and all plots combined make single peripheral wall. There is no obstruction between any of the plots, we have obtained plot allotment letters from SE authority for all plots and we have applied for amalgamation of plots to SEZ authority*."

- ✓ PP has submitted that, thay have provided a separate spare tank for Ethylene Oxide with a capacity of 20 KL * 1 No. &Propylene Oxide with a capacity of 50 KL * 1 No. Details of revised list of storage tanks and LPG Cylinder and same details are given in format at Sr. No. 34.
- ✓ PP has mentioned the affected population in Risk/Quantitative Analysis reportas mentioned below:

Sr. No.	Short description of scenario	Chemical involved	Type of Risk	Probability	Concentration	Damage Distance from source	Population likely to be affected
1	Release from damage of LPG Cylinders	LPG Manifold	Flammable Effect	Very unlikely	12600 ppm 2100 ppm	30 meters 87 meters	250 industrial worker
			Overpressure (Blast force)	Very unlikely	1.0 psi 3.5 psi 8.0 psi	38 meters 19 meters LOC not exceeded	250 industrial worker
2	Release from damage of LDO	LDO Tank	Flammable Effect	Very unlikely	0.78 ppm (60 % LEL) 0.13 ppm (10 % LEL)	1100 meters 3000 meters	4950 industrial worker (30 % Villagers)

- ✓ PP has submitted, revised fuel consumption in the Thermic Fluid Heater and same details are given in format at Sr. No. 24.
- ✓ PP has submitted SEZ notification of Kandla Special Economic Zone and Plot allotment letter with the name of Dyna Glycols Pvt. Ltd.

30) Committee found presentation and reply submitted by PP was satisfactory.

3) **EIA REPORT (BASELINE STUDIES AND RISK ANALYSIS)**

Sr. no.	Particulars	Details (Give brief note / Conclusion of the particular subject)	Page no., Section no. & chapter no. of EIA report
a	Ensure that there is no change in EIA report w. r. t. ToR i.e. Form-1 & PFR	We have prepared EIA Report as TOR points mentioned by SEIAA	-

<table>
<tr><td></td><td>b</td><td>Baseline environmental monitoring period</td><td>October 2022 to December 2022</td><td>Chapter 3. Section 3.3 of EIA Report.</td></tr>
<tr><td></td><td>c</td><td>Whether baseline data is primary or secondary data?
If baseline data carried out by other NABL accredited laboratory then MoU between both.
If baseline data is taken from another EIA report, then MoU between NABET consultant and industry whose data used in preparing present EIA report and time period of baseline data shall be as per MoEF&CC's OM dated: 08.06.2022.</td><td>Baseline data is Primary Data.

Baseline data is carried out by the NABL Accredited Laboratory - Arihant Analytical Laboratory, MoU was done. Not Applicable.</td><td></td></tr>
<tr><td></td><td>d</td><td>Baseline study area (Km)</td><td>10 Km radius from the project site</td><td>--</td></tr>
<tr><td></td><td colspan="4">AIR</td></tr>
<tr><td></td><td>e</td><td>No. of AAQM stations including project site</td><td>8 Locations</td><td>Chapter 3, Section 3.6, Table 3.7 of the EIA Report</td></tr>
<tr><td></td><td>f</td><td>Parameters considered for AAQM including project specific parameters.</td><td>$PM_{2.5}$, PM_{10}, SO_2, NO_x</td><td></td></tr>
<tr><td></td><td colspan="4">-
<table><tr><th>Sr. no.</th><th>Parameters</th><th>Range of Concentrations (µg/m^3)</th><th>Remarks</th></tr><tr><td>1</td><td>$PM_{2.5}$</td><td>19.69 – 40.11</td><td rowspan="4">Results are well within prescribed Limit</td></tr><tr><td>2</td><td>PM_{10}</td><td>53.64 – 90.67</td></tr><tr><td>3</td><td>SO_2</td><td>5.15 – 22.14</td></tr><tr><td>4</td><td>NO_x</td><td>8.31 – 30.48</td></tr></table>-</td></tr>
<tr><td></td><td>g</td><td>Whether the results of AAQM is within the norms prescribed in NAAQS ?If no, give reasons as per EIA report</td><td>Yes, results are well within prescribed limits</td><td>Chapter 3, Table 3.8 & 3.9 page no 83 of the EIA Report.</td></tr>
<tr><td></td><td>h</td><td>Commentsfor AAQM results w. r. t. NAAQS</td><td>Values are well within the norms</td><td>--</td></tr>
<tr><td></td><td>i</td><td>Software used for the mathematical Modelling for anticipated incremental GLCs (Ground Level Concentrations</td><td>The mathematical model used for conducting the study is the latest version 8.8.9 Lakes AERMOD View which is entirely in line with the requirements of central Pollution Control Board, New Delhi.</td><td>Chapter 4, Section 4.4, sub - section: 4.4.3 of page no 128 of EIA Report</td></tr>
<tr><td></td><td>j</td><td>The resultant concentrations w. r. t. NAAQS and its conclusion.</td><td>The incremental values are well below the NAAQS norms</td><td>Chapter 4, Section 4.4.4 page no 135 of the EIA Report.</td></tr>
</table>

		WATER		
	k	No. of monitoring stations including project site wrt water Groundwater Surface water	Groundwater: 8 Locations Surface water: 8 Locations	Chapter-3, section 3.11.1, Table 3.20, and section 3.11.2, Table 3.22 on Page No. 120 & 123 of EIA Report.
	l	Conclusion of the Monitoring during baseline study of water (ground water and surface water)	Water samples have been collected from neighboring villages i.e., 09 locations within 10 km aerial distance from the site. The TDS concentration in the water samples has been found to vary between 1175 mg/L and 4300 mg/L and Total hardness in the range of 310 mg/L and 910 mg/L. The water quality data indicate that any industrial waste, sewage water does not pollute the ground water quality. The high TDS concentration in ground water may be due to sea water ingression. Concentration of metals in raw water is also within acceptable range. Ground water of Anjar is found below permissible limit because of rejection. All other ground water sample fit for drinking purpose Water samples have been collected from neighbouring villages within 10 km aerial distance from the site. The water quality is good and meets the drinking water standards. The pH of surface water sample was found in the range of 7.03 to 7.7 the water from Kandla creek is having high TDS concentration of 203468.0 mg/l. The high TDS concentration in ground water may be due to Kandla creek water ingression. The TDS concentration of samples collected from lakes were ranging between 877 mg/L to 2820 mg/l. Other parameters are also well within the range of acceptance criteria for drinking water as per IS: 10500.	Chapter-3, Table – 3.15, page no. 88 and table 3.15, page no. 89 of EIA report.
	m	No. of monitoring stations including project site wrt soil	8 Locations	Chapter-3, section 3.10 Table 3.18, and Page No. 94 of EIA Report.
	n	Conclusion of the Monitoring during baseline study of land /	Samples collected from identified locations indicate that the soil is neutral; to slightly alkaline pH value ranging	Chapter -3, Table 3.17, Page No. 93

	soil	from **7.49 to 8.68** Soil texture is mostly sandy. Sodium Absorption Ratio is in the range of **0.17 to 0.72;** which show that the soil is good for agricultural purpose.	of EIA Report.
o	No. of monitoring stations including project site wrt Noise	8 Locations	Chapter-3, section 3.7.2 Table 3.11, on Page No. 107 of EIA Report.
p	Conclusion of the Monitoring during baseline study of Noise	The hourly Leq noise levels recorded at project site show noise level in the range of **72.9 dB (A)** at day time and **64.2 dB (A)** at Night time. The noise level at project site was found in within the Industrial limits also currently no activities have been envisaged. The noise level recorded in study area is in the range of **48.6 dB (A) to 72.0 dB** (A) during day time and **37.9 dB (A) to 62.1 dB (A)** during night time and are found below the residential limits. The recorded noise levels were well below the national ambient noise level standards for day time and night time.44.05 g/mol	Chapter-3, section 3.7.2 on Page No. 84 of EIA Report.

q Any other details:

Details of carbon footprint: As per carbon sequestration analysis, the total CO2 emissions will be **21086.75**Tonnes/Annum from the process, fuel and transportation of finished products. Details of Carbon sequestration is given in Section 10.11, Page no. 213 of EIA report.

Details of water footprint: As per carbon sequestration analysis, the total CO2 emissions will be **21086.75**Tonnes/Annum from the process, fuel and transportation of finished products. Details of Carbon sequestration is given in Section 10.11, Page no. 213 of EIA report.

Details of carbon sequestration: As per carbon sequestration analysis, the total CO2 emissions will be **21086.75**Tonnes/Annum from the process, fuel and transportation of finished products/Raw material. To sequestrate the carbon emissions green belt plantation & various measures will be adopted. Total 7,454trees will be planted at project site and outside of premises for CO2 sequestrated. Additionally, Unit will sequestrate CO2 by installation of Solar Panels, Solar lights & Solar Trees. Thus, unit will sequestrate around **884.74 (7.84%) tons per year** of total carbon dioxide generated during year through above mitigation measures.

The GHG reduction initiatives practiced are sequestration of carbon by tree plantation and avoiding emissions by using renewable source of energy. Details are given below.

Absorption of CO2 emission by Trees Plantation

Nos. of Trees	Location	Absorption of CO2 by tree in kg	Absorption of CO2 by tree in Ton
7,454 Trees	Within premises & Outside of premises	705374.61	**705.37**

Reduction of CO2 by Renewable Energy:

S. No.	Source	CO2 reduction(TPA)

1.	Renewable Energy generation through Solar panel installation	179.37

Thus, unit will sequestrate around 884.74 (7.84%) tons per year of total carbon dioxide generated during year through above mitigation measures.

Details of roof top rain water harvesting and reuse within premises:
Rain Water Harvesting is a way to capture rain water when it rains, store that water above ground or charge underground water table with it. However, as the unit under consideration is located in KASEZ - Gandhidham, it would not be permitted to dig well for rainwater harvesting. However, the unit would consult the local authority and look out the possible contribution to undertake rainwater harvesting in the nearby area.

Sr. No.	Particular	Roof Top Area	Open Area	Greenbelt Area	Road Area
1	Catchment Area Available (m2)	19896	16643	22016	4800
2	Coefficient of Runoff (as per CGWA Guideline)	0.85	0.2	0.15	0.65
3	Annual Rainfall (m)	0.41	0.41	0.41	0.41
4	Area wise volume of rain water can be harvested (kl/Year)	6933.8	1364.7	1354.0	1279.2
5	No. of Rainy days per year	100 Days			
6	Total Volume of Rain water can be harvested (kl/Year)	6933.8(Considering only roof top area)			
7	Average volume of rainwater that can be harvested (kl/day) during 100 rainy days	1899.67			
8	Retention Period	7 days			
9	Total Volume that need to be store at a time	13297.69			
10	10% Evaporation Loss	11967.92			
11	Tank Size (including 20 % FB)	14361.5			
12	Tank Size need to provide at a time	15000* 1 nos.			

r	Details of Schedule-I species and its conservation plan, if any
	There is no Schedule- I species found in the study area.

4) **RISK ANALYSIS & ITS MITIGATION MEASURES IN GENERAL AS GIVEN IN EIA REPORT**

INTRODUCTION OF OEP

An emergency in the plant premises has the potential to cause serious injury or loss of lives or extensive damage to the property and/or environment and serious disruption both inside and outside the plant. In such cases sometimes outside agencies are required to call for help in handling the situation. The causative factors like plant/equipment failure, human error, earth quake, sabotage etc. will normally manifest in various forms viz. Fire, Explosion, Toxic release, structure collapse etc.

OBJECTIVES

The primary objective of the emergency procedure is to safeguard of life of the personnel working in the plant and the plant itself. Another objective is to familiarize all employees with the organizational set-up to combat any emergency likely to arise. The OEP is also to develop a permanent infrastructure of trained persons and suitable facilities to meet probable eventualities that may affect safety of people, plant and/or environment.

STATUTORY PROVISIONS

The Factories Act, 1948(1987) & the Gujarat Factories Rules 1963:
Section 7A (2) & 41(B) of the Factories Act 1948 (1987) and Rules 68-J (12) of the Gujarat Factories Rules 1963 providing that every occupier; who has control of an industrial activity pertaining to hazardous chemicals or industries involving hazardous process shall furnish the on-site emergency plan detailing how major accidents shall be deal with along with explaining specific responsibilities and

actions by various persons. On site emergency plan shall contain the details as specified in Schedule 8-A of the GFR-2004.

The Manufacture, Storage and Import of Hazardous Chemicals Rule 1989 (Amended 2000):
Rule 13(1) under the Manufacture, Storage and Import of Hazardous Chemicals Rule 1989 (Amended 2000), Rules framed under the Environment (Protection) Act-1986 (2001), indicates that the occupier shall prepare and keep up-to-date an on-site emergency plan containing details specified in Schedule 11 and detailing responsibilities and actions by different persons and agencies

1.	Name and Address of the Company /persons furnishing the information	:	**DYNA GLYCOLS PVT. LTD. PLOT NO. 265, 266, 267, 268 B, 269 B, 270 A & 271, SECTOR 4, KANDLA SPECIAL ECONOMIC ZONE (KASEZ), TA - GANDHIDHAM, DIST. - KUTCH (GUJARAT) 370230**
2.	Key Personnel of the organization and responsibilities assigned to them in case of an emergency	:	Section In charge, Managers, HSE, Engineering team etc.
3.	Outside organizations if involved in mutual aid during On-site emergency	:	Company will do Mutual aid agreement with outside organization
	(a) Type of accidents	:	Fire, Explosion, Spillage/leakage of chemical, falling objects, structure collapse, burn injury etc.
	(b) Responsibility assigned	:	Assigned (Emergency response team & Key personnel)
4.	Details of liaison arrangement between the organizations	:	Company will do liaison agreement with outside organization
5.	Information on the preliminary hazard analysis	:	---
	(a) Type of accidents	:	Toxic gas dispersion, Fire, Explosion, Fall, Burn etc.
	(b) System elements or events that can lead to a major accident	:	• Inadequate design • Mechanical failure of Pipes, Vessels, Reactors etc. • Failure of manual and automatic control system and safe devices • Failure of safety systems. • Unsafe operation / maintenance. • Heating of electrical element may result into fire. • Natural Calamities
	(c) Hazards	:	Physical, Chemical, Mechanical
	(d) Safety relevant components	:	• Provision of separate Chemical Storage area • Secondary containment provision • Provision of PPE, safety Shower with eye Washer. • Fire Protection System • Emergency Siren/Alarming system • Qualified Operatives/ Supervisors • Calibration, testing and Maintenance of machineries, Pressure gauges, safety valves etc. • Displaying Instruction, Cautionary Notice, HAZCOM. • Permit to work system, etc. • Provisions of training to workers, operatives, Supervisors, etc. • Testing & Inspection of lifting tools, tackles, air compressor etc. as per

				GFR requirements
6.	Details about the site		:	--
	(a) Location of dangerous substances		:	Storage area & Isolated
	(b) Seat of key personnel		:	Office & Plant area
	(c) Emergency Control Centre		:	Emergency Control Center has been decided. Fire & Rescue equipments, PPE's etc. has been provided.
7.	Description of hazardous chemicals at plant site		:	--
	(a) Chemicals (quantities and toxicological data)		:	As per Risk Assessment chapter
	(b) Transformation if any which could occur		:	--
8.	Likely dangers to the plant		:	--
9.	Enumerate effects of		:	
	(a) stress and strain caused during normal operations		:	There might be minor chances of stress and strain in manual operation. Effective steps will be taken to avoid for the same.
	(b) Fire and explosion inside the plant and effect if any of fire and explosion outside		:	As per Worst case scenario of Chemical (Risk Assessment Chapter)
10.	Details regarding		:	
	(I) Warning, alarm and safety and security systems		:	Company has been provided Emergency siren/ Alarming system, PPE's, Display of MSDS & Sign boards
	(ii) Alarm and hazard control plans in line with disaster control and hazard control planning, ensuring necessary technical and organizational precautions		:	Yes, provided alarms & developed emergency procedures.
	(iii) Reliable measuring instruments, control units and servicing of such equipments		:	Unit has been done Periodically Calibration & Testing of Equipments
	(iv) Precautions in designing of the foundation and load bearing parts of the building		:	Stability Certificate has been obtained
	(v) Continuous surveillance of operations		:	Maintenance and Inspection are carried out of equipments & operation.
	(vi) Maintenance and repair work according to the generally recognized rules of goods engineering practices		:	Company has followed preventive maintenance & repairing work accordingly & maintain good engineering practice.
11.	Details of communication facilities available during emergency and those required for an offsite emergency		:	Company has provided Emergency Siren, Mobile Phones, Windsock, Emergency Vehicles etc.
12.	Details of firefighting and other facilities available and those required for an offsite emergency		:	Adequate and appropriate ABC & CO2 type of Fire extinguishers has been provided; Fire hydrant system has been installed. SCBA set, safety shower and other PPE's are available.
13.	Details of first aid and hospital services available and its adequacy		:	First aid box has been provided at emergency control center, Security office, plant office. Mutual aid lisoning has been done nearby hospitals for medical emergency.

5) **PRODUCT PROFILE AND BRIEF NOTE OF PRODUCT PROFILE**

Sr. No.	Name of Products	CAS No.	Quantity (MT/month)			End use of Product
			Existing	Proposed	Total	
1.	**Alcohol Ethers, Ethers of fatty alcohols & Phenol Alkyl Phenol**					

		Alkoxylate of mixed liner primary alcohols (range C9 to C17)	68002-960	100	0.0	100	None Ionic Emulsfying agent
		Ethylated neodol1/ (C11 Alcohol Ethoxylate)	34398-01-1				
		Ethoxylated neodo9/ (C9 Alcohol Ethoxylate)	68439-46-3				
		Ethoxylated lauryl alcohol 2 mole to 12 mole	68439 - 50 - 9				
		Ethoxylated Tridecyl alcohol 3mole to 18 mole	24938-91-8				
		Ethoxylated Cetostearyl alcohol 20 mole to80 mole	68439-49-6				
	2.	Monoalkyl Ethers of Ethylene Glycol or of Diethylene Glycols					
		Polyethylene glycol-mol wt. 200,300,400 &600	25322-68-3	250	0	250	Additives in various formulations in textile, paper, metal and other various industries
		Polyethylene glycol-Flakes mol wt. 4000,6000,12000	25322-68-3				
		Polypropylene Glycol-1000	25322-69-4				
		Polyalkylene Lauryl Ether	68439-51-0				
		Polypropylene Glycol-2000	25322-69-4				
	3.	Other Ether Alcohols, Ether Phenol, ether Alcohol Phenols & their derivatives					
		Ethoxyl atednonyl phenol 4 mole to 150 mole	9016-45-9	100	0	100	In formulations for metal, oilfield & coating industries.
	4.	Ether Alcohols					
		EO/PO Block Co Polymer L61	9003 - 11-6	20	0	20	As an intermediate in various formulations in water treatment, oilfield industries.
		EO/PO Block Co Polymer L62	9003 - 11-6				
		EO/PO Block Co Polymer L64	9003 - 11-6				
	5.	Anionic Organic Surface Active Agent					
		Blend of alkoxylate of mixed liner primary alcohols (range C9 to C17) and PolyalkyleneLuryl Ether	68439-51-0 & 61725-89-1	20	780	800	Emulsifiers, wetting agent, degreasing agents, solubalizers in Textile, Paper, Paints/ coating and oilfield industries
		Alkyl Phenol Ethoxylate Sulphate sodium / ammonium salt and/or	68891-39-4				
		Fatty Alcohol (Alcohol C12 to 28) and/or Ethoxylate Sulphate, and their Sodium /Ammonium Salt And /or	68891-38-3				
		Fatty Alcohol Ethoxylate Carboxylate, and their Sodium /Ammonium Salt And /or	33939 – 64 - 9				
		Dioctyl Sulphosuccinate And /or	577-11-7				
		Di Iso Amyl Sulphosuccinate And /or	922-80-5				
		Alkyl Aryl Phenol	68649-55-8				

		Alkoxylate sulphate, and their Sodium /Ammonium Salt And /or					
		Fatty Alcohol (C4 to C28) and /or ethoxylates phosphate esters and their Sodium /Potassium / Ammonium Salt And /or	68130-47-2				
	6.	Nonionic Organic Surface Active Agent					
		Ethoxylated Decyl alcohol	61827-42-7	1140	2860	4000	Emulsifiers, wetting agent, degreasing agents, solubalizers in Textile, Paper , Paints/ coating and oilfield industries
		Ethoxylated Stearic acid 10 mole (acidic	9004-99-3				
		EO/PO Block Co Polymer F-68	9003 - 11-6				
		Ethoxylated Neodol91-2 mole to 9 mole	68439 -46-3				
		Fatty Alcohol (Alcohol C4 to C 28) Ethylene Oxide and/ or Propylene Oxide Condensate And /or	68439-51-0				
		Sorbitan Esters (Sorbitan Mono Oleate, Sorbitan Mono Laurate,Sorbitan Mono Stearate etc) Ethylene Oxide Condensate And /or	9005 – 65 - 6				
		Fatty Acid (C8 - C22 like Coconut Fatty Acid, Lauric Fatty Acid , Oleic Fatty Acid, Stearic Fatty Acid etc) Ethylene Oxide Condensate And /or	61791-29-5				
		Styrenated Phenol Ethylene Oxide Condensate and /or Propylene Oxide condensate And /or	32171-27-0				
		Alkyl Phenol (Nonyl Phenol/ Paraoctyl Phenol/Dodecyl Phenol/Dinonyl Phenol/P-Tert Butyl Phenol) Ethylene Oxide and/or propylene oxide condensate/alkoxylate And /or	9016-45-9				
	7.	Other Organic Surface Active Agent					
		EthoxylatedTrimethylol propane	50586-59-9	350	0	350	Emulsifiers, wetting agent, degreasing agents, solubalizers in Textile, Paper, Paints/ coating and oilfield industries
		Phenol Ethoxylate	9004-78-8				
		Fatty Acid (C12 to C18) Amide with Di ethanol amine Di ethylene tri amine, Amino ethyl ethanol amine and/or	93-83-4				
		Fatty Acid (C12 to C18) Imidazole with Di ethylene tri amine, Amino	21652-27-7				

		ethyl ethanol mine and/or					
		Betaine and/or	61789-40-0				
		Quaternary Ammonium compounds (Benzyl-c12-16-alkyldimethyl,Chlorides) and /or	68424-85-1				
	8.	Artificial Waxes and prepared waxes of Polyoxyethylene Polyethylene Glycol					
		Polyethylene Glycols Flakes (3000)	25322-68-3	20	40	60	As an ingredient in cosmetics, oilfield and other formulations
	9.	Other Artificial Waxes & Prepared Waxes					
		Polyethylene Glycols Flakes (4000))	25322-68-3	20	0	20	As an ingredient in cosmetics, oilfield and other formulations
	10.	Polyether & Polyesters					
		Polypropylene Glycol	25322-69-4	350	100	450	As an ingredient and defoamers in water treatment, metal treatment, paper, lubricant, and other industries
		Polyethylene Glycol	25322-68-3				
		Polyalkylene Glycol	9003-11-6				
		Polyalkylene Glycol Ether	9038-95-3				
		Alkyl (C4 - C28) Polyalkylene Glycol Ether	68439-50-9				
	11.	Finishing agents used in the textile, paper, leather or like industries					
		Blend of Alkoxylate of mixed liner primary alcohols (range C9 to C17))	68439 – 50 – 9 & 24938-91-8 & 103 – 09 – 3	50	0	50	As finshing agents in textile, paper, leather etc. industries
	12.	C10C12 fatty Alcohol and DIOL					
		Polyethylene Glycol)	25322-68-3	20	0	20	In manufacturing of various surfactants.
	13.	Other Organic Surface Active Agent					
		Ethoxylated castor oil 2.5 mole to 40 mole (acidic))	61791 – 12 – 6	50	0	50	Emulsifiers, wetting agent, degreasing agents, solubalizers in Textile , Paper , Paints/ coating and oilfield industries
	14.	Organic Surface Active agent					
		Blend of Polyethylene Glycol)	25322-68-3	60	2940	3000	Emulsifiers, wetting agent, degreasing agents, solubalizers in Textile, Paper, Paints/ coating and oilfield industries
		Fatty Alcohol (C8 to C28) Ethyelene Oxide and /or propylene Oxide condensate/alkoxylates And/or	68439-51-0				
		Hydrgenated Castor Oil Ethylene Oxide and / or propylene oxide condensate/alkoxylate And/or	61788-85-0				
		Castor Oil Ethylene					

		Oxide and/or propylene oxide condensate / alkoxylate And/or					
		Fatty Amine (Cocoamine, Oleyl Amine, Tallow Amine,Tallow Diamine, Stearyl Amine Ethylene Oxide and / or propylene oxide condensate / alkoxylate And/or	61791-12-6				
		Sulpho succinates and their salts like Sodium Dioctyl Sulphosuccinate, Sodium Di Isoamyl Sulphosuccinate , Disodium Lauryl Ether Sulphosuccinate etc.	577-11-7				
	15.	Other Organic Compound					
		Blend of Polyethylene Glycol and Propxylated 2 Ethyl Hexanol)	25322-68-3 & 103 – 09 – 3	20	0	20	Defoamers in various formulations in textile, paper etc industries
	16.	Other Saturated Monohydric Alcohols					
		Ethoxylated Lauryl Alcohol 2 Mole	68439 – 50 – 9	20	0	20	In manufacturing various surfactants
	17.	Other Industrial fatty Alcohol					
		Ethoxylated castor oil 2.5 mole to 40 mole (alkaline)	61791 – 12 – 6	250	0	250	In manufacturing of various surfactants.
		Ethoxylated oleylcetyl alcohol 5 mole to 25 mole	68920-66-1				
		Ethoxylated 2 ethyl hexanol	26468-86-0				
		Ethoxylated Hydrogenated castor oil 16 mole to 40 mole	61791 – 12 – 6				
		Propoxylated 2 ethyl hexanol)	64366-70-7				
	18.	ELAT-G					
		EO/ PO Block Copolymer	9003 - 11-6	20	0	20	Emulsifier, dispersing agent in various formulations in coating, and other industries
	19.	AF-260					
		Blend of EO/PO Block Copolymer	9003 - 11-6	20	0	20	Defoamers in various formulations in textile, paper etc industries
	20.	Additive 8500 Fatty Alcohol based polyether polyol derivative					
		Blend of EO/PO Block Copolymers and Polypropylene Glycols	9003 - 11-6 & 25322-69-4	100	0	100	Additive in various formulations in oil field and other industries.

	Fatty Acid Ester, SA-01					
21.	Ethoxylated Stearic acid 10 mole (alkaline)	9004-99-3	20	280	300	In cosmetics formulations
22.	Fatty Alcohol/ Fatty Acid Esters (Alkyl C12 -C14 Benzoate) And /or	68411-27-8				
	Total		**3000**	**7000**	**10000**	

 # Brief Note of Product Profile:

1. No of Manufacturing Plants: 2
2. Brief Note regarding number of Products to be manufactured considering plant capacity: 2-3

6) **PROJECT DETAILS (COST/LAND OWNERSHIP/NA PERMISSION ETC.)**

a) Total **cost of Proposed** Project (Rs. in Crores):

Existing(Crores)	**Proposed**(Crores)	**Total**(Crores)
46.79	115.55	162.34

Break-up of proposed project Cost:

Details	Existing (Rs. In Crore)	Proposed (Rs. In Crore)	Total (Rs. In Crore)
Land	00*	00*	00*
Building	24.28	20.20	44.48
Plant and Machinery	21.31	80.10	101.41
EMP	0.60	10.13	10.73
Miscellaneous	0.60	5.12	5.72
Total	**46.79**	**115.55**	**162.34**

** The land used by the existing and proposed project was taken on the lease by the company from the Kandla Special Economic Zone. So that, land cost is not included in the total cost of the project.

b) **Details of Land / Plot ownership details:** (Linking between Land ownership and PP is required.)

i. **Total Plot area (sq mt):** Total: 66714 m^2 (Existing 16560 m^2 + 50153.6 m^2)

ii. **GIDC Plot Allotment letter/ NA documents:** Plot allotment order in the name of **M/s. Dyna Glycols Pvt. Ltd.**

Letter no. KASEZ/EM/1/11-25/605/2006/446, Dated 12.04.2007. (Existing plot no.268 - B)

Letter no. KASEZ/EM/I/H-25/605/2006/1133, Dated 07.12.2010. (Existing plot no.269 - B)

Letter no.KASEZ/EM/I/H-25/605/2006/Vol.I, Dated 29.04.2019. (For plot no. 270)

Letter no. KASEZ/EM/I/H-25/605/2006/Vol.II- 7626, Dated 03.10.2019. (For plot no.271)

Letter no. KASEZ/IA/07/2006-07/Vol.I- 8991, Dated 12.01.2023. (For plot no.265, 266, 267)

(land is on lease from the KASEZ)

iii. **Rent agreement, if any** --

iv. **Other Land Possession documents, if any--**

7) **IF IT IS EXPANSION WHETHER CCR/EARLIER EC COMPLIANCE GIVEN:**

Sr.	Particulars	Brief	Remarks

	no.		Information/Details	
	1	Earlier Environmental Clearance **(EC)** details [EC letter no. and date & obtained from MoEF&CC/SEIAA.]	Unit has obtained EC for existing activity from SEIAA vide letter no. SEIAA/GUJ/EC/5(f)/815/2015, dated 30.03.2015 & letter no. SEIAA/GUJ/EC/5(f)/755/2019, dated 16.05.2019.	Copies of EC are submitted with EIA Report.
	2	In case EC not obtained for existing project: Copy of first CTE (NOC) & CCA obtained from GPCB i.e. before 14/09/2006. (For justification that you have not obtained EC for existing project).	Unit has obtained EC for existing activity from SEIAA vide letter no. SEIAA/GUJ/EC/5(f)/815/2015, dated 30.03.2015 & letter no. SEIAA/GUJ/EC/5(f)/755/2019, dated 16.05.2019. Unit has obtained CC&A, CCA No. AWH-93345 Issue Date 30/05/2018 valid till 02/05/202 and its amendment vide latter no. AWH -104312, dated 10.12.2019.	Copies of EC are submitted with EIA Report. Copy of CCA has been submitted with EIA Report.
	3	**Certified Compliance Report (CCR)** from the concern authority **(IRO-MoEF&CC/MS-GPCB) for existing EC/ CCA** as per the MoEFCC's OM no.F.No: IA3-22/10/2022-IA.III [E 177258] dated: 08/06/2022.	Not Applicable, As per MoEFCC OM dated 08.06.2022. As a CTO has been obtained in last one Year.	Copy of CCA has been submitted with EIA Report.
	4	**Summary of CCR and Time bound action taken report/ plan of conditions i.e partly complied/ non-complied**	We are regularly submitting half yearly compliance report to RO, MoEFCC-Bhopal.	Last EC compliance report Submitted on Dated. 01.10.2023
	5	Details of latest Consent to Operate (CTO/CC&A) obtained from GPCB along with date of issue and validity	Unit has obtained CC&A, CCA No. AWH-93345 Issue Date 30/05/2018 valid till 02/05/202 and its amendment vide latter no. AWH -104312, dated 10.12.2019.	Self-certified compliance report of CC&A and its amendment has been submitted with EIA Report.

	6	Details of **Improvement notice, Show- cause notice, Notice of direction, Directions, Closure direction etc**. issued by the GPCB to the existing unit in **last 3 years**. Details in tabular format comprise **issues, actions taken and current status**. As per the latest XGN screen shot.	There is no Show Cause notice received in last three year.	--
	7	Details of **Public Complaints** (If any)	No any public complaint.	--

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Comments:

As per MoEF&CC's OM dated: 08.06.2022, PP has submitted CCR dated 13-03-2023 from concerned authority with action taken report of non-complied/ partly complied conditions which is found satisfactory. Also, PP has submitted that there is no action taken by GPCB in last three years, no litigation pending and public complaints against the unit.

8) **PUBLIC HEARING APPLICABILITY AND ITS COMPLIANCE: Not applicable, The unit is located within the notified industrial area – KASEZ Gandhidham.**

Main Issues raised by stake holders	Commitments by Project proponent and Action Plan	Action Plan
--	--	--

Comments:

The public consultation is not applicable as per paragraph 7(i) III (i) (b) of the Environment Impact Assessment Notification-2006

9) **SITING CRITERIA DETAILS (OTHER THAN GIDC):**

Sr. no.	Environmental Sensitivity	Name/Specific details	Siting criteria as per GPCB guidelines dated: 05.06.2022 & its amendment	Aerial Distance in Km
1	Habitat (Residential Area)			
2	Water Bodies			
	River			
	Natural Nallah/Drain			
	Lake/Pond/Wetlands			
	Water supply Tanks/Reservoirs			
	Canal			

3	Protected Monuments/Heritage sites/Public Buildings i.e School, colleges, etc.			
4	National/State Highway OR Express way			
5	Coastal Regulation Zone (CRZ) (In case of Coastal area projects)			

Comments:

This unit is located in notified industrial area, so siting criteria is not applicable.

10) **A. APPLICABILITY OF GENERAL CONDITIONS AND COMMENTS WITH SPECIFIC CLARIFICATION OF MOEF&CC GUIDELINES:** Any project or activity specified in Category 'B' will be appraised at Central level as Category 'A' if located in whole or in part within 5 Km radius from the project boundary of:-

Sr. No.	Particulars	Aerial Distance in Km
1.	Protected Areas notified under the Wildlife (Protection) Act 1972 (53 of 1972)	Kachchh Desert Wildlife Sanctuary @ 42.2km in N direction & Marine Sanctuary @46.3 in S direction.
2.	CPA/SPA (Critically Polluted Area/Severely Polluted Area) as identified by the CPCB	Critically Polluted Area of GIDC Rajkot @ 111.9 km in NW Direction.
3	Eco sensitive areas as notified under sub-section (2) of section 3 of EPA-1986	Kachchh Desert Wildlife Sanctuary @ 42.2km in N direction & Marine Sanctuary @46.3 in S direction.
4	Interstate boundaries and international boundaries	International boundary of Pakistan @125.59 km in Sdirection

Comments:

As per MoEF&CC's notification dated: 25.06.2014 and as per details submitted by PP, General condition is not applicable.

B. Ensure compliance of category as defined in the amendment to EIA Notification, 2006 vide SO 1599 (E) dated 25/06/2014. i.e. Conditions of small units: (in case of 5 (f) category units and outside the GIDC)

Sr no.	Condition	Compliance with justification
1	Water consumption less than 25 M^3/day;	Not applicable
2	Fuel consumption less than 25 TPD;	

	3	Not covered in the category of MAH units as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989 as per the legal undertaking submitted with EIA report.	

Comments:

Unit is located within the notified industrial area so this small scale condition is not applicable.

11) **AREA ADEQUACY AND COMMENTS**

Total Land area: 66714 m^2(Existing Area:**16560 m^2** + Proposed Area: **50154 m^2**)

Floor-wise land area break-up table:

Area Adequacy table:

Sr. No.	Components	Area required (Sq. m)	Area Provided (sq. m)			Percentage (%)
			Existing	Proposed	Total after Expansion	
1.	Office/Admin building/Lab Building	170	220	0	220	0.33
2.	Production Area	1800	491	1754	2245	3.37
3.	Finished Goods Storage Area	900	106	1000	1106	1.66
4.	Raw Material Storage Area	12010	6477	9249	15726	23.57
5.	Hazardous waste Storage	436	72	500	572	0.86
6.	ETP / STP/ MEE/ RO/ ~~spray dryer~~/etc. area	980	160	900	1060	1.59
7.	Green Belt Area	22016	5971	16045	22016	33.00
8.	Parking, Road Area and Margins	3570	1500	3300	4800	7.19
9.	Tank Farm	865	433	600	1033	1.55
10.	Security Cabin	9	12	0	12	0.02
11.	Utility Block	800	621	645	1266	1.90
12.	OHC	15	15	0	15	0.02
13.	Open area + Area for future expansion	--	432	16069	16501	24.73
14.	Others(LPG storage)	42	50	92	142	0.21
	Total	--	**16560**	**50154**	**66714**	**100**

Comments:

SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.

12) **GREEN BELT CONDITIONS AND MEASURES ALONG WITH AREA:**

Total Plot area (Sq meter)	Total Green belt area (Sq meter)	% of Greenbelt

66714 **Sq. meter**	Inside: **22016Sq. meter** Outside: --	33%

Details of copy of permission letter of concern GIDC/ Panchayat/etc. for greenbelt development (in case of greenbelt development outside the premises:

Comments:

- The PP shall develop green belt within premises (22016 Sq. m i.e. 33 % of the total plot area) as submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

13) **EMPLOYMENT GENERATION:**

Permanent	Contractual	Total
160 Nos.	90 Nos.	250 Nos.

14) **SOURCE OF WATER SUPPLY WITH QUANTITY AND PERMISSION (DETAILS OF CGWA IF BOREWELL**

a) **Source of water supply: KASEZ – Gandhidham**
b) **Total Fresh water quantity (KLD): 266 KLD (After expansion)**
c) **Permission of concerned authority (KASEZ –** Existing permission for 266 KLD is already obtained vide letter no. KASEZ/EM/I/H-25/605/Vol.I/5993 dated 17.10.2023.

Comments:

PP has obtained permission from KASEZ – Gandhidham for procurement of water of 266 KLD which is found satisfactory.

15) **WATER CONSUMPTION RELATED DETAILS WITH COMMENTS**

Category	Existing (KLD)	Proposed (KLD)	Total (KLD)	Remarks
(A) Domestic	**18.5**	**36**	**54.5**	**Fresh water**
(B) Gardening	**18**	**24**	**42**	**Recycle water**
(C) Industrial				
Process	27	15	42	Fresh water
Boiler	15.5	50	65.5	Fresh water + Recycle water
Washing	20	60	80	Recycle water
Cooling	30	90	120	Fresh water
Other	0	10	10	Fresh water
Industrial Total	**92.5**	**225**	**317.5**	**--**
Grand Total (A+B+C)	**129**	**285**	**414**	**--**

Comments:

PP has submitted the above water consumption which is calculated considering the worst case scenario and in no case the water requirement shall not exceed the same which is

found satisfactory.

16) **WASTE WATER GENERATION AND DISPOSAL**

Category	Existing (KLD)	Proposed (KLD)	Total (KLD)	Remarks
(A) Domestic	**10**	**32**	**42**	**In to STP**
(B) Industrial				
Process	0.0	0.0	0.0	ZLD
Boiler	2.5	4.05	6.55	ETP+MEE/ATFD
Cooling	3	9	12	ETP+MEE/ATFD
Wash Water	18	62	80	ETP+MEE/ATFD
Other	0.0	10	10	ETP+MEE/ATFD
Total Industrial waste water	**23.5**	**85.05**	**108.55**	**--**
Total [A + B]	**33.5**	**117.05**	**150.55**	**--**

Justification in case of increase/ drastic reduction in wastewater generation than water Consumption: Total W/W generation from existing activity is 33.5 KLD which will be increased up to 150.55 KLD. Source of Industrial waste water generation will be 108.55 KLD and Domestic waste water will be 42 KLD. Major sources of W/W generation will be from Boiler (6.55 KLD), Cooling (12 KLD), washing (80 KLD) and Other (10 KLD).

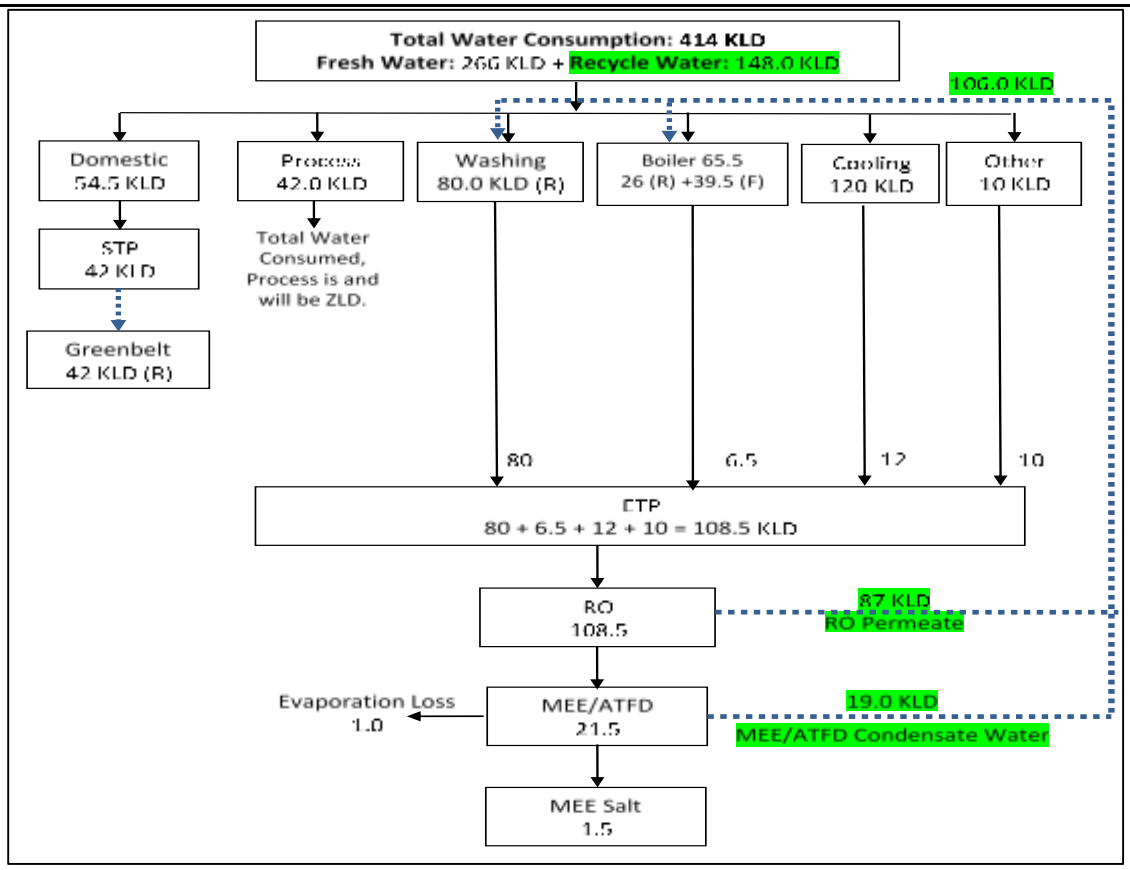
Some products are Liquid form products. During the process water is consumed and a small amount of water is evaporated, Hence, the Products achieve Zero liquid discharge. There is no reaction created during the process. The same is shown in mass balance. There will be no waste water generation from the manufacturing process. As a product is and will be ZLD. 108.5 KLD Effluent will be send to ETP followed by RO. ETP-RO permeate (87.0 KLD) will be reused in utility and RO reject (21.5 KLD) treated water will be sent to In house MEE/ATFD for final evaporation subject. MEE/ATFD condensate will be reused in the premises. 1.5 KLD MEE salt will be sent to TSDF site.

Domestic waste water will be sent to STP and treated water will be reused in the greenbelt development.

Comments:

PP has submitted the above wastewater generation which is calculated considering the worst case scenario and in no case the wastewater generation shall not exceed the same which is found satisfactory.

17) **SIMPLIFIED WATER BALANCE DIAGRAM**



Note: Water is used in some of our like anioninc Organic Surface Active Agent, Alkyl Aryl Phenol Alkylate Sulphate (50%), Quaternary ammonium Compound (Benzyl-C12-16 alkyl dimethyl, Chlorides) etc. Water is used in manufacturing process as a diluent to the product and there is not discharge, Go along with the product to end user. The same is shown in mass balance.

18) **BREAKUP OF WASTE WATER DISPOSAL (DOMESTIC & INDUSTRIAL BOTH)**

Sr. no.	Quantity (KLD)	Facility
1.	54.5	To STP and treated sewage will be used in gardening. (Domestic)
2.	108.5	To ETP – RO – MEE/TFD. (Industrial)
Total	**163**	**--**

Comments for Domestic Effluent:

- Domestic wastewater generation shall not exceed 42 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.

Comments for Industrial Effluent:

2. Management of Industrial effluent shall be as under:
   - 108.5 KLD of effluent generated from Washing (80 KLD), Boiler (6.5 KLD), Cooling (12 KLD) and other (10 KLD) shall be treated ETP followed by RO and then into MEE & ATFD for further treatment; RO permeate (87 KLD) shall be

reused in Industrial purpose and RO reject (21.5 KLD) shall be sent to MEE & ATFD.MEE & ATFD condensate (19 KLD) shall be Reuse within premises, evaporation loss (1 KLD)and MEE salt (1.5 KLD) shall be sent to TSDF site.

- Thus there shall be no discharge of any industrial effluent into an environment like drain, land etc and shall maintain Zero Liquid Discharge

19) **MECHANISM AND METHODOLOGY OF STREAM SEGREGATION**

Generated domestic Waste Water (42.0 KL/Day) will be disposed in to Sewage Treatment Plant. Generated dilute stream will be collected in collection tank. Homogeneous mixture of waste Water will be transfer in to neutralization tank where waste water neutralized by lime. Neutralized waste water will be filter and filtrated will be collected in holding tank. Treated dilute waste water will be passed through RO plant. RO reject waste will be evaporated in in house MEE/ATFDwithin premises. MEE condensate will be Reuse within premises. Generated salt of MEE/ATFD will be sent to TSDF.

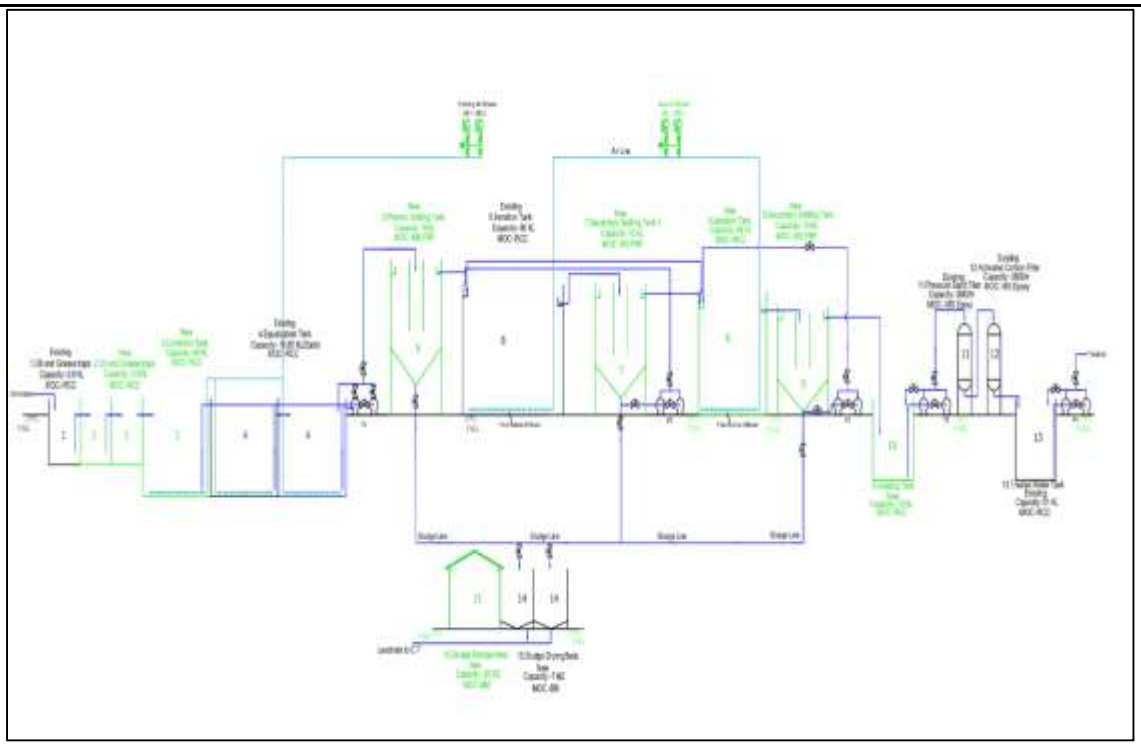
20) **STP AND/OR ETP SPECIFICATION AND DESIGN AND ITS CAPACITY**

STP Capacity: 50 KLD

Sr. No.	ETP Units	Capacity	Nos. of Unit	Ret. Time (Min)
1.	Oil & Grease Trap	5.88 m^3	1	47
2.	Collection Tank	64.95 m^3	1	520
3.	Chemical Neutralization Tank	30 m^3	2	160
4.	Poly-dosing system	--	--	--
5.	Aeration System For Neutralization	--	--	--
6.	Primary Settling Tank	18 m^3	1	144
7.	Effluent transfer pump	--	2	72
8.	Sewage Effluent transfer pump	--	2	72
9.	Bio-Reactor	128.82 m^3	1	1031
10.	Secondary Settling Tank + Tube Settler	14.898 m^3	1	119
11.	Clarifier	25 m^3	1	109
12.	Polishing Tank	19.72 m^3	1	158
13.	Pressure Sand Filter	0.398 m^3	1	3
	Tube Settler	--	1	-
14.	Activated Carbon Filter	0.398 m^3	1	3
15.	Air Blowers	350.80 m^3/ hr.	2	--
16.	Fine Bubble Diffused aeration system	--	--	--
17.	Return Sludge Pumps	--	--	--
18.	Filter Feed Pumps	--	--	--
19.	Sludge Drying Bed	38.732 m^3	03	309.9
	Total	**150 KL**	**--**	**--**

ETP Capacity & its specification: 150 KLD

Flow diagram pf ETP :



21) **TREATABILITY OF WATER**

Stream	Washing	Boiler	Cooling	After Primary Treatment	RO permeate	RO Reject	MEE/ATFD water
pH	7-9	8	8-9	pH	7.40	7.35	7.25
COD, mg/l	150	20	60	COD, mg/l	25	131	35
TDS, mg/l	1500	550	1500	TDS, mg/l	78	3870	173

22) **SUMMARY OF WATER USE AND REQUIREMENT OF FRESH/REUSED WATER**

Summary of water requirement	**Total after Expansion, KLD**	Remarks
Total water requirement for the project **(A)**	414	--
Quantity to be **recycled (B)**	148	--
Total **fresh water** requirement **(C)**	266	--
Ensure **Total water requirement = Recycled water + Fresh water i.e. A = B + C**		

23) **REUSE, REDUCE, RECYCLE RECOVERY MEASURES ADOPTED**

a) Reduce

Sr. No.	Item	Quantity	% percentage
1.	Recycle water	148 KLD	35.7 %

b) Reuse

Sr. No.	Item	Quantity	% percentage
1.	Recycle water	148 KLD	35.7 %

c) Recycle

Sr. No.	Item	Quantity	% percentage

	1.	Recycle water	148 KLD	35.7 %

24) **FLUE GAS EMISSION**

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)
Existing						
1.	Boiler – I (600 kg/hr.)	30	LDO	160 Litter/Hr.	PM, SO_2, Nox	Adequate stack height
2.	Boiler – II (600 kg/hr.)					Adequate stack height
3.	Boiler – III(2 T/Hr.)					Adequate stack height
4.	Boiler – IV (3 T)	30	LPG	159.6 Kg./Hr.		Adequate stack height
5.	D.G. Set (125 KVA) Stand by	11	Diesel	40 Litter/Hr.		Adequate stack height
6.	D.G. Set (320 KVA) Stand by	11	Diesel	100 Litter/Hr.		Adequate stack height
Proposed						
1.	Thermic fluid heater (8 Lacs Kcal/Hr.)	30	LPG, PNG	1.25 MT/Day, 1.65 MT/Day	PM, SO_2, Nox	Adequate stack height
2.	Boiler-V (6 TPH)	30	LPG, PNG	3.4 MT/Day, 3.5 MT/Day,		Adequate stack height
3.	Boiler – VI (6 TPH)	30	LPG, PNG	3.4 MT/Day, 3.5 MT/Day,		Adequate stack height
4.	D.G. Set (500 KVA) Stand by	11	Diesel	160 Litter/hr.		Adequate Stack Height
5.	D.G. Set (1000 KVA) Stand by			320 Litter/hr.		Adequate Stack Height

Comments:

- The proposed fuel to be used is approved fuel for the requirement of the heat energy and proposed the Air pollution Control measures and stack height so as to achieve the emission norms prescribed by the competent authorities are found satisfactory.

25) **PROCESS GAS EMISSION**

Sr No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures(APCM)
There will be no process gas emission from existing As well as proposed activity				

Comments:

- As per the submission of details there is no process gas emission.

26) **FUGITIVE GAS EMISSION**

Sr. No.	Source	Probable Pollutant Emission	Control Measures/ APCM
1	Solvent storage tank	Air pollutant (VOC)	v) The acids shall be taken from storage tanks to reactor through closed pipeline. Storage tanks shall be vented through trap receiver and condenser operated on chilled water.
2	Handling of raw material bags in storage area	Air pollutant (PM)	ii) The acids shall be taken from storage tanks to reactor through closed pipeline. Storage tanks shall be vented through trap receiver and condenser operated on chilled water.
3	Flange joints of pipeline, pump & motors	Air pollutant (VOC)	General control measures like routine & regular inspection to identify leakage, preventive maintenance and operational maintenance, provision of leak detection and repair system (LDAR). v) Preventive maintenance of flange connections and glands of pumps.
4	Solid raw material transferring to reactor	Air pollutant (PM)	Management to ensure proper handling of the spillages during transfer, charging operation and provision of a Dust Collection System for collection of the air borne material wherever applicable. viii) Reflux condenser to be provided over the reactor.
5	Liquid raw material transferring to reactor	Air pollutant (VOC)	Reflux condenser to be provided over the reactor.
6	Loading /unloading at storage area	Air pollutant (VOC)	Fugitive emissions in the work zone environment, product raw material storage area shall be monitored regularly.

Comments:

The air pollution control measures proposed for fugitive gas emission are found satisfactory.

27) **HAZARDOUS PROCESSES AND ITS SAFETY MEASURES**

Types of process	Safety measures including Automation
Bromination	--
Chlorination	--
Hydrogenation	--
Nitration	--
Sulphonation	--
Others, if any	--

28) **SOLVENT MANAGEMENT**

Solvents which are used as raw material in product manufacturing process are Iso Decyl Alcohol, Propylene Oxide, Potassium Hydroxide, Acetic Acid, Hydrogen Peroxide, Diethylene glycols, Propylene Glycol, Di octyl Maleate, Iso Amyl Alcohol, 2 Ethyl Hexanol, OleylCetyl Alcohol, Diethylene Glycol which are consumed completely and not recovered. Amount of solvent used and other details are given in the section 3. **Product wise Raw material consumption, page no. 2.**

Product No.	Product Name	Solvent	Qty. Used MT/ MT	Qty. Recovered MT/MT	solvent Losses in air (A)	solvent Loss in (Effluent - stripped out) (B)	Distillation Residue (C)	Total Losses (A + B+ C)	Solvent Recovery %
Not applicable									

29) **VOC EMISSION AND MITIGATION MEASURES FOR ACHIEVING MAXIMUM SOLVENT RECOVERY AND MINIMUM VOC GENERATION**

Sr. No.	Emission Source	Probable Pollutant Emission	Control measures
1	Solvent storage tank	Air pollutant (VOC)	The acids shall be taken from storage tanks to reactor through closed pipeline. Storage tanks shall be vented through trap receiver and condenser operated on chilled water.
2	Solvent recovery system	Air pollutant (VOC)	Preventive maintenance of flange connections and glands of pumps
3	Handling of raw material bags in storage area	Air pollutant (PM)	The acids shall be taken from storage tanks to reactor through closed pipeline. Storage tanks shall be vented through trap receiver and condenser operated on chilled water.
4	Flange joints of pipeline, pump & motors	Air pollutant (VOC)	General control measures like routine & regular inspection to identify leakage, preventive maintenance and operational maintenance, provision of leak detection and repair system (LDAR). Preventive maintenance of flange connections and glands of pumps.
5	Solid raw material transferring to reactor	Air pollutant (PM)	Management to ensure proper handling of the spillages during transfer, charging operation and provision of a Dust Collection System for collection of the air borne material wherever applicable. Reflux condenser to be provided over the reactor.

30) **LDAR PROPOSED**

S.N.	Component	Frequency of monitoring	Repair preventive maintenance schedule
1.	Pumps	Weekly	Leak from pumps can also be reduced by

			using dual seals with or without barrier fluid.
2.	Valves	Weekly	Leak from open ended line, sampling connection, compressors are usually fixed by modifying equipment. emission from pumps and valves can be reduced by use of leak less valves and seal less pumps
3.	Connectors	Weekly	
4.	Sampling Connection	Weekly	
5.	Compressor	Weekly	
6.	Pressure Relief Device	Weekly	
7.	Open Ended Lines	Weekly	

The Following methodology to be adopted during LDAR study:

- Identify the Chemical streams that must be monitored.
- Types of components (pumps, valves, connectors, etc.) to be monitored
- Frequency of monitoring.
- Actions to be taken if a leak is detected.
- Length of time in which an attempt to repair the leak must be performed.
- Actions that must be taken if a leak cannot be repaired within guidelines.
- Record-keeping and reporting requirements.

31) **LDAR FOR SPECIFIC SOLVENT**

Sr. No.	Solvent Name	Type of Storage	Mode of Transfer	Charging	Sources of Leakage	Mitigation Measure For find out leakages	Mitigation Measure (If leakages shall be occur)	Action taken for prevention of leakages
1.	Methanol	Tank/ drum	By Pump & Fix Pipe line	Direct Vessel	• Leak from Valve (failure of the valve packing & O-ring) • Leak from pump (Occur at seal) • Leak from tank • Leak from Connectors • Leak from open ended lines	For using Gas Detector by PID Sensor technology.	• If valve shall be leak stop pumping system and replace with new valve. When pump seal shall be leak immediately stop solvent transfer and immediately repair or replace with new seal.	Check Thickness of tank Using fix pipeline for solvent transfer Minimum use of Connectors & Joins Provided sufficient Space (Solvent Unloading area) for Solvent Tanker
2.	Butanol							
3.	Phenol							

32) **HAZARDOUS WASTE MANAGEMENT MATRIX**

Sr. no.	Type/Name of Hazardous waste	Specific Source of generation (name of activity, product etc.)	Category and Schedule as per HW Rules.	Total Qty (Mt/Annum)			Management of HW
				Existing	Proposed	Total	
1	ETP	ETP	35.3	66	100	166	Collection,

	Sludge						Storage, transportation, Dispose at TSDF site.
2	MEE/ATFD Salt	MEE	35.3	30	500	530	Collection, Storage, transportation, Dispose at TSDF site.
3	Empty Drum/Bags/ Containers/ Liners	RM Storage	33.1	25.5	60	85.5	Collection, Storage, decontamination, disposal By Selling Out To Register vendor
4	Used Oil	Machineries	5.1	300 Ltr./Year	700 Ltr./Year	1000 Ltr./Year	Collection, Storage, in closed containers, reuse for lubrication in plant machinery or sold to recyclers.
5	Evaporation Residue \(Process Waste)	Process	28.1	30	50	80	Collection, Storage, transportation, Dispose at TSDF site.

Comments:

- Hazardous waste management includes collection, storage, transportation and disposal at TSDF, captive/ common incineration, co-processing/ pre-processing, sold to authorized actual users having Rule-9 permission and recycle/ reuse of waste. SEAC examined the details provided and found it as per requirement.

33) **NON-HAZARDOUS WASTE MANAGEMENT MATRIX**

Sr. no.	Type/Name of non-hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Quantity (MT/Annum)	Management of HW
1	STP Sludge	STP	126	Collection, Storage and reuse within premises as manure.

Comments:

- Other wastes management includes collection, storage, transportation and disposal by selling to actual users and recycle / reuse of waste. SEAC examined the details provided and found it as per requirement.

34) **STORAGE SAFETY MEASURES**

a) Storage of Hazardous chemicals in Tanks

Sr	Name of Chemical	Capaci	Number of	Hazardous

. no		ty of Tank	Tanks	Characteristics of Chemical
TANK FARM (NON-PESO)				
1	Acetic Acid	1 kL	7	Flammable
2	Amino Ethyl Ethanol Amine	1 kL	4	Corrosive
3	C12 - C15 Alcohol	1 kL	4	Toxic, Irritant
4	Di ethylene glycols	50 kL	1	Irritant
5	Di Octyl Maleate	50 kL	3	Corrosive
6	Fatty Alcohol Ethoxylate	10 kL	10	Flammable Corrosive
7	Iso Decyl Alcohol	30 kL	1	Irritant
8	Lauryl Alcohol	50 kL	1	Toxic, Irritant
9	Lauryl Dimethyl Amine	5 kL	4	Corrosive, Irritant
10	Neodol 9	50 kL	1	Irritant
11	Nonyl Phenol	50 kL	1	Irritant
12	Para Octyl Phenol	50 kL	1	Corrosive
TANK FARM (PESO)				
1	2 Ethyl Hexanol	30 kL	1	Flammable
2	Alkyl Phenol	50 kL	6	Toxic
3	Butanol	23 kL	1	Flammable
4	Dimethyl acetamide	50 kL	2	Flammable
5	Ethylene Oxide	20 kL	1 + (1 Spare tank)	Flammable, Corrosive, Irritant
6	Phenol	50 kL	1	Flammable, Toxic, Corrosive
7	Propylene Oxide	50 kL	1 + (1 Spare tank)	Flammable
8	Propylene glycol	20 kL	2	Flammable
9	MCA	1 kL	5	Flammable

Safety Measures for PESO Underground storage tank farm: <u>Safety Measures for PESO Underground storage tank farm:</u>

- Storage will be in cool, dry well-ventilated location away from heat, any area where the fire hazard may be acute.
- Outside or detached storage will be done for solvents storage and separate from incompatible Chemicals.Dyke wall to be provided at all storage tanks.
- Corrosion resistant structural material will be used in the storage area.
- Effective ventilation will be applied to prevent accumulation of flammable vapours.
- Quantities of all flammable substance should be kept to absolute minimum.
- Tank, pipelines etc. will be bonded and grounded for transfer to avoid static sparks.
- A closed system transfer of flammable /toxic chemical should be used to prevent emission of flammable vapour
- Safety device such as sensors will be used to warn operators of overheating in process vessels so that appropriate measure taken immediately.
- Regular housekeeping should be practiced to minimize flammable dust accumulation.
- Storage and use area shall be identified and maintained as “no smoking area”.
- Use non-sparking type tools and equipment, including explosion proof ventilation.
- Smoking, welding, flame cutting and other hot work should be prohibited where flammable material is handled. ,Safety shower and eye washer shall be installed near storage area.
- Lightening arrestor on all chimney and building will be provided.,Safety permit system shall be followed for loading, unloading of hazardous chemical., Fencing, caution note, hazardous identification board should be provided., Only authorized person shall be permitted in storage tank area and register will be maintained.,Flame arrestor with breather valve will be provided on vent line.
- MSDS, Caution note and emergency handling procedure will be displayed at unloading are.
- Level gauge will be provided for storage tank.
- Fire Extinguishers, sand buckets and other firefighting equipments to be provided.

- Training will be provided and educate the workers for chemical handling safety.
- Spark arrestor shall be provided in vehicles for fire protection.
- If required, Flameproof electrical installation shall be provided in storage tank area.

b) Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

Sr. No.	Name of Chemical	Capacity of Drum/ Bag/ Cylinder/ Glass Bottle	Number of Drum/ Bag/Cylinder/ Glass Bottle	Hazardous Characteristics of Chemical
1.	Alkyl Aryl Phenol Alkoxylate	210 kg	1	Irritant
2.	Benzoic Acid	50 kg	40	Corrosive, Irritant
3.	Castor Oil	30	7	Flammable
4.	Caustic Potash (Catalyst)	50 kg	20	Corrosive
5.	Caustic Soda	100 kg	120	Corrosive
6.	Ethylene Glycol/ Diethylene Glycol	210 kg	1	Flammable
7.	Fatty Amine	210 kg	1	Irritant
8.	Fatty Acid	210 kg	1	Irritant
9.	Fatty Alcohol	210 kg	1	Irritant
10.	Hydrogen peroxide	100 kg	1	Flammable
11.	Hydrogenated Castor oil	210 kg	1	Flammable
12.	Iso Amyl Alcohol	210 kg	1	Flammable
13.	Maleic anhydride	100 kg	80	Flammable
14.	Mono Ethanol amine	15 kg	1	Flammable
15.	OleylCetyl Alcohol	15 kg	1	irritant
16.	Para Toluene sulfonic acid	50 kg	20	irritant
17.	Phosphorus Pentoxide	100 kg	6	Corrosive
18.	Potassium Hydroxide	210 kg	1890	Irritant, Corrosive
19.	Sodium Bisulphite	100 kg	140	Irritant
20.	Sodium hydroxide	210 kg	1	Corrosive, Irritant
21.	Sodium meta bi Sulphite	100 kg	90	Corrosive
22.	Sodium mono chloro acetate	210 kg	81	Toxic, Irritant
23.	Sorbitol ester	210 kg	1	Flammable& Toxic
24.	Stearic Acid	100 kg	70	Flammable, Irritant
25.	Styrenated Phenol	210 kg	1	Corrosive, Irritant
26.	Sulfamic acid	100 kg	60	Corrosive, Irritant
27.	Tri methylol Propane	100 kg	30	Corrosive
28.	Urea (Catalyst)	50 kg	20	Corrosive
29.	Benzyl Chloride	210 kg	38	Flammable, Toxic
30.	Di ethanol Amine	1 KL	4	Corrosive
31.	LPG	420 kg	30	Flammable

Safety measures for Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE CHEMICALS **CORROSIVE CHEMICALS** **TOXIC CHEMICALS** **REACTIVE CHEMICALS**	➢ Separate Isolated Storage Area will be constructed as per explosive departme requirement and separation distance will be maintained, accordingly. ➢ Barrel Must Be Labeled ➢ Heat/Spark, Flame, Wear PPE And Self-Contain Breathing Apparatus ➢ Containers and equipment used for storage and processing of corrosive material w be corrosion resistant ➢ Avoid Leakages, Barrel Tightly Closed, Ground/Bond Barrel and Receiving Equipmer ➢ Use Non-Sparking Tools And Equipment, ➢ Precaution Measure Against Static Discharge ➢ Explosion Proof Electrical Lighting ➢ Eye Washer and Safety Shower Should Be Provided. ➢ Personal protective devices shall be used. ➢ Self-breathing apparatus, gas mask and 'emergency kits' should be ➢ Located at strategic points under working condition and to be easily accessible in th event of emergency.
Others, if any	

-

35) **FIRE LOAD CALCULATION**

Total Plot Area:	66714 m^2
Area utilized for plant activity:	2245 m^2
Area utilized for Hazardous Chemicals Storage:	572 m^2
Number of Floors:	G+1
Water requirement for firefighting in KLD:	70 KLD
Water storage tank provided for firefighting in KL:	500 KLD
Details of Hydrant Pumps:	Jockey Pump-10 HP & Electrical Pump-60 HP are provided
Nearest Fire Station :	Gandhidham Fire Brigade @ 3.85 km
Applicability of Off Site Emergency Plan:	Will be obtained

Comments:

The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 500 KL. SEAC found it as per the requirement.

36) **WORKERS SAFETY AND OCCUPATIONAL HEALTH MANAGEMENT**

37) **DTAILS OF MEMBERSHIP OF COMMON FACILITIES:**

Sr. No.	Membership for Common Facility	Membership Certificate issuing agency along with Date of Issue and validity of membership
01	CETP	**Name of CETP: Not Applicable** **Date of Issue of membership along with validity: --** **Capacity of CETP (KLD): --** **Allotted Capacity (KLD) to member unit: --**

		Spare Capacity (KLD) of CETP: --
02	TSDF site	**Name of TSDF: Detox India Pvt. Ltd.** **Date of Issue of membership along with validity: 16.5.2019, Valid till 15.05.2024.** **Capacity of TSDF (MT): --** **Allotted Capacity (MT) to member unit: --** **Spare Capacity (MT) of TSDF:--**
03	Common Hazardous Waste Incineration Facility	Not applicable
04	Common Spray Drying Facility	Not applicable
05	Common MEE Facility	Not applicable
06	Common Conveyance System	Not applicable
07	PESO permission	License no. S/HO/GJ/03/1094(S33610), Valid till 30.09.2026
08	FIRE permission	Obtained Vide letter no. F.O.SFPS/FIRE-NOC – Industry 031/22, Dated 10.01.2022
09	Health Certificate	Obtained

38) **EMERGENCY MEASURES PROPOSED AND PREPAREDNESS ACTION PLAN**

Logistic facility /Tel Nos.	Destination	Distance Km.
Hospital	Govt. Hospital Kidana	1.61 km
Fire Brigade (101)	Gandhidham Fire Brigade	3.85 km
Nearest Police Station (100)	Gandhidham B Division Police Station	2.98 Km

39) **CER ACTIVITIES PROPOSED YEAR WISE/ IN CASE OF EXPANSION ANY ADDITIONALITY SUGGESTED AND ITS COMPLIANCE (AS PER THE MOEF & CC GUIDELINES)**

Total cost of Project (Rs in Crores)	Total Cost of CER (Rs in Lakhs)	Percentage (%)
162.33	86.66	0.75 %

Sr. No.	Activities	Name of Villages	Cost (Rs in Lakhs)
1.	Providing RO plant in Primary School/ Primary health Centers and local gram panchayat **(10*1,50,000/- Per RO installation & maintenance cost)**	Village Kidana, Mithi Rohar, Galpadar, Bharapar and Tuna.	15
2.	Provision of solar Tree contribution to nearby farmers **Cost of Solar Trees: -** The cost of 1 solar tree system is approximately Rs. 5,00,000 **Number of solar Tree** - 5 nos. i.e. 330 W/1 Solar tree **(@ 35 Panels /Tree)** Therefore, total cost for solar panels = Rs. 25,00,000/- (Note: Maintenance cost will be handled by farmers themselves.	Kidana, Gandhidham, Anjar and Mathak villages	25
3.	Greenbelt Development at Common places of	KASEZ –	10

		KASEZ – Gandhidham roads and Kidana, Rampar villages including maintenance (2000 Rs./- per tree including plantation and tree guard) (Considering, Total 300 Nos. of Trees to be planted in KASEZ, Rampar & Kidana village • Maintenance cost of tree will be 2000 Rs./- • Water Tanker charges /Day = Rs. 1000 /- Hence, Total cost for tree plantation • **300 * 2000 = Rs. 6,00,000 /-** • Water Tanker charges/year= 300 Nos.*Rs. 1000 = **3,00,000 Rs./-** gardener Charges for 1 Year = **1.0 lakh**	Gandhidham roads and Kidana, Rampar villages	
	4.	Installation of solar panelled street lights in **Bharapar village** - **50 KW** **Cost of Solar Energy: -** The cost of 1 KW solar panel system is approximately Rs. 40,000 per KW. Number of solar panels - 100 no. to be provided for Street lights **(@ 2 panels /KW)** Total power to be generated by solar panels **- 63 KW** Therefore total cost for solar panels = **Rs. 20,00,000/-**	Bharapar village	20
	5.	Primary Infrastructures including Road approach of Village	Meghpar and Antrajal Village	8.34
	6.	Water harvesting Activities at nearby villages	Vara Samdi, KASEZ - Gandhidham	5
	Total			**86.66**

Comments:

As per MoEF&CC's OM dated: 01.05.2018 and 30.09.2020, SEAC examined that the proposed cost of CER i.e 0.75 % (Rs 86.66 Lakhs) which is as per the requirement.

40) **ENVIRONMENT MANAGEMENT PLAN (ESPECIALLY WITH CEPI AND NON CEPI GUIDELINES, AS MAY BE APPLICABLE)**

Sr. No	Unit	Detail	Capital Cost (Rs. In Lakhs)	Total Recurring Cost (Rs. In Lakhs/ Annum)
1.	Wastewater	ETP - Manpower, Chemical cost etc.	51	25
		MEE/ATFD + RO - Manpower, Maintenance cost etc.	80	22
		STP - Manpower, Chemical cost etc.	30	10
2.	Air	Boiler, Utility & D G Set, etc.	60	35
3.	Hazardous Management	Storage area + Handling & Transportation	22	10
		Membership of common	25	8

		hazardous waste facility		
4.	Fire & Safety	Sprinklers	22	15
		Fire Extinguishers, Hydrant System & Safety Equipment, DCS + Flame proof electrical fittings, Automatic control system	17	5.5
5.	Green Belt Development	Saplings, water, fertilizer Gardner and its maintenance cost	13.76	4
6.	Occupational Health	O.H.C. + FMO (RMP)	10	10.9
		Health check-up of workers	12	5
7.	Noise Control	Silencer; Vibration pads; Noise PPEs, etc.	33	9.5
8.	VOC Control	DCS & PLC based interlocks for critical reaction systems, System Automation	50	25
9.	Environment Monitoring Program	Tie up with NABL accreditation laboratory for regulatory monitoring, etc.	0	24
10.	CER Activity	As per List	88.66	0
11.	Cost of conservation plan of Schedule-I species, if any	There is no schedule - I species found in the study area.	--	--
		Total	**514.42**	**208.9**

Comments:

The overall environment management plan (EMP) provided for capital and recurring cost for wastewater treatment, air emission control, noise control, hazardous waste disposal, fire & safety, occupational health, environment monitoring program, green belt and corporate environmental responsibility was deliberated and found satisfactory.

41) **RECOMMENDATIONS OF SEAC**

"On the basis of information provided to SEAC on project, its location, technical, physical and environmental infrastructure, products, quantity to be manufactured, its raw material, storage, waste disposal, water treatment, safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and **unanimously** recommends the same to SEIAA for environmental clearance."

Conditions with which Environment Clearance is recommended:

42) **GENERAL CONDITIONS**

Construction Phase

a) "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades.

b) "No uncovered vehicles carrying construction material and waste shall be permitted."

c) "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured."

d) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).

e) No excavation of soil shall be carried out without adequate dust mitigation measures in place.

f) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.

g) Grinding and cutting of building materials in open area shall be prohibited.

h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.

i) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. Unit shall install CEMS **[Continuous Emission Monitoring System]** in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. **[For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].**
2. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
3. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
4. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
5. All measures shall be taken to avoid soil and ground water contamination within premises.

6. Safety & Health:

a) PP shall obtain PESO permission for the storage and handling of hazardous chemicals. (If applicable).

b) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.

c) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.

d) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.

e) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.

f) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.

g) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.

h) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.

i) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.

j) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.

k) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

l) The projectmanagement shall prepare a detailed Disaster ManagementPlan (DMP) for the project as per the guidelinesfromDirectorateof IndustrialSafety and Health.

m) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals.

n) Provide double earthling to solvent storage tanks: (1) Unit shall provide effective fire hydrants, water monitors & foam application system at solvent storage tank farm area. (2) Unit shall provide adequate safety system such as water sprinklers, water curtains, foam pouring system etc. to restrict cascade fire emergency in solvent tank farm.

o) Unit shall never store drum/barrels/carboys of incompatible material/chemical

together.

WATER

7. Total water requirement for the project shall not exceed 414 KLD. Unit shall reuse 148 KLD of treated effluent within premises. Hence, fresh water requirement shall not exceed 266 KLD and it shall be met through KASEZ – Gandhidham water supply only. Prior permission from concerned authority shall be obtained for procurement of water.
8. The industrial effluent generation from the project shall not exceed 108.55 KLD.
9. Management of Industrial effluent shall be as under:
    - 108.5 KLD of effluent generated from Washing (80 KLD), Boiler (6.5 KLD), Cooling (12 KLD), other (10 KLD) shall be treated ETP followed by RO and then into MEE & ATFD for further treatment; RO permeate (87 KLD) shall be reused in Industrial perpose and RO reject (21.5 KLD) shall be sent to MEE & ATFD.MEE & ATFD condensate (19 KLD) shall be Reuse within premises, evaporation loss (1 KLD)and MEE salt (1.5 KLD) shall be sent to TSDF site.
    - Thus there shall be no discharge of any industrial effluent into an environment like drain, land etc and shall maintain Zero Liquid Discharge.
10. Domestic wastewater generation shall not exceed 42 KL/day for proposed project and it shall be treated in STP.It shall not be disposed off into soak pit.Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
11. During monsoon season when treated sewage may not be required for the plantation / Gardening / Green belt purpose, it shall be stored within premises. There shall be no discharge of waste water outside the premises in any case.
12. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
13. Complete Zero Liquid Discharge [ZLD] status shall be maintained all the time and there shall be no drainage connection from the premises.
14. Unit shall feed wastewater to in-house MEE/ATFD only after ensuring content of effluent for COD/VOC so as not to get air borne during evaporation in order to achieve no adverse impacts on Environment and Human Health.
15. Unit shall provide STP and ETP,RO, MEE with adequate capacity.
16. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
17. Proper logbooks of ETP; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power

consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

18. Unit shall not exceed fuel consumption for Boilers, Thermic fluid heater and D G Sets as per the point no. 24 as mentioned above.
19. PP shall use approved fuels only as fuel in Boilers, Thermic fluid heater and D G Sets.
20. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
21. Unit shall provide adequate APCM with process gas generation sources as the point no. 25 as mentioned above.
22. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety& Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
    - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
    - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
23. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
24. For control of fugitive emission, VOCs, following steps shall be followed :
    a. Closed handling and charging system shall be provided for chemicals.
    b. Reflux condenser shall be provided over Reactors / Vessels.
    c. Pumps shall be provided with mechanical seals to prevent leakages.
    d. Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.
25. Solvent management shall be carried out as follows:
    - ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
    - ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
    - ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
    - ✓ The condensers shall be provided with sufficient HTA and residence time so as to

achieve maximum solvent recovery.

- ✓ Solvents shall be stored in a separate space specified with all safety measures.
- ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
- ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.

26. Close loop solvent recovery system with adequate condenser system shall be provided to recover solvent vapours in such a manner that recovery shall be maximum and recovered solvent shall be reused in the process within premises.
27. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
28. Regular monitoring of ground level concentration of PM10, PM2.5, SO2, NOx and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

29. All the hazardous/ solid waste management shall be taken care as per the point no. 32 and 33 as mentioned above.
30. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
31. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
32. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
33. STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.
34. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

35. The PP shall develop green belt within premises (22016 Sq. m i.e. 33 % of the total plot area) as submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

36. The project proponent shall carry out the activities of amount of Rs. 86.66 Lakhs (Providing RO plant in Primary School/ Primary health Centers and local gram panchayat (10*1,50,000/- Per RO installation & maintenance cost) at Village Kidana, Mithi Rohar, Galpadar, Bharapar and Tuna, Provision of solar Tree contribution to nearby farmers Cost of Solar Trees: - The cost of 1 solar tree system is approximately Rs. 5,00,000 Number of solar Tree - 5 nos. i.e. 330 W/1 Solar tree (@ 35 Panels /Tree) Therefore, total cost for solar panels = Rs. 25,00,000/- (Note: Maintenance cost will be handled by farmers themselves at Kidana, Gandhidham, Anjar and Mathak villages, Greenbelt Development at Common places of KASEZ – Gandhidham roads and Kidana, Rampar villages including maintenance(2000 Rs./- per tree including plantation and tree guard) (Considering, Total 300 Nos. of Trees to be planted in KASEZ, Rampar & Kidana village Maintenance cost of tree will be 2000 Rs./ Water Tanker charges /Day = Rs. 1000 /- Hence, Total cost for tree plantation 300 * 2000 = Rs. 6,00,000 /- Water Tanker charges/year= 300 Nos.*Rs. 1000 = 3,00,000 Rs./- gardener Charges for 1 Year = 1.0 lakh at KASEZ – Gandhidham roads and Kidana, Rampar villages, Installation of solar panelled street lights in Bharapar village - 50 KW Cost of Solar Energy: - The cost of 1 KW solar panel system is approximately Rs. 40,000 per KW Number of solar panels - 100 no. to be provided for Street lights (@ 2 panels /KW) Total power to be generated by solar panels - 63 KW Therefore total cost for solar panels = Rs. 20,00,000/- at Bharapar village, Primary Infrastructures including Road approach of Village at Meghpar and Antrajal Village and Water harvesting Activities at nearby villages at Vara Samdi, KASEZ - Gandhidham) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
37. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Excel Enviro Tech and submitted by the project proponent and commitments made during presentation

	before SEAC and proposed In the EIA report shall be strictly adhered to in letter and spirit.
43)	**COMPLIANCE AND ADMINISTRATION/APPEAL OF EC ORDERS** 1. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded. 2. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities. 3. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government. 4. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions. 5. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded. 6. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010. 7. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com& (b) seacgujarat@gmail.com

7.	SIA/GJ/IND3/438273/2023	**M/s. R C Industries** Plot No. C-261/1, G.I.D.C. Industrial Estate,Saykha, Tal: Vagra, Dist: Bharuch, Gujarat - 392 140.	**EC – Refer back**

Category of the unit: **5 (f) – B1**

Project status: **Expansion**

Project located either in CEPI or non CEPI **: non CEPI**

1) Project proponent (PP) has submitted online application vide no.SIA/GJ/IND3/438273/2023 on 29.07.2023 for obtaining Environmental Clearance.
2) PP has applied for Environmental Clearance and the SEAC recommended the project for grant of Environmental clearance vide this office letter no. SEAC-GEN-99-IND3/6600 dated: 04.12.2023 for conditions as mentioned therein.
3) The case was referred back by the SEIAA, Gujarat vide Letter No. SEIAA/GUJ/EC/5(f)/1680/2023 dated 28.12.2023 with the following point:
    a) Details of solvent management are not included in SEAC recommendation, while proponent is using various solvents (column No 28).
    b) In SEAC Recommendation in Table No 10 of format, only Part A of General Condition is given, while part B is missing (for small units) and not given. SEAC is requested to submit details.
    c) Details of Fire permission & PESO permission are not submitted in recommendation.
    d) PP shall submit approved conservation plan of schedule-I species.
4) PP has submitted reply of above query generated on SEAC VC meeting, through Parivesh portal.
5) The case was reconsidered in the SEAC meeting dated **25.01.2024**.
6) Project proponent (PP) and Technical expert M/s.Jyotiom Chemical Research Centre Pvt. Ltd.remained present during video conference meeting.
7) PP presented their case as under:

    a) **Details of solvent management are not included in SEAC recommendation, while proponent is using various solvents (column No 28).**

Reply of PP:

- The unit would like to state that Solvents like Phenol, C-9, Xylene, IPA, n-Butanol, Ethyl Acetate will be used for manufacturing of products, but all the solvents will be used as reactant and they will be consumed while manufacturing of product. Manufacturing process in which solvent is used as reactant and consumed while manufacturing of product is submitted.
- However, Leak Detection and Repair (LDAR) program is proposed to be implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment. Leaking equipment, such as valves, pumps, and connectors, are probable source of emissions of volatile organic compounds (VOCs) and volatile hazardous air pollutants (VHAPs).
- Periodic monitoring of work area will be carried out to check the fugitive emission.
- VOC detectors will be installed at various places to detect leak.

    b) **In SEAC Recommendation in Table No 10 of format, only Part A of General Condition is given, while part B is missing (for small units) and not given. SEAC is requested to submit details.**

Reply of PP:

- Unit would like to state that part B (conditions for small units) has been updated to Topic No.2 under the heading Ensure compliance of category as defined in the amendment to EIA Notification, 2006 vide SO 1599 (E) dated 25/06/2014. i.e. Conditions of small units: (in case of 5 (f) category units and outside the GIDC).

Sr no.	Condition	Compliance with justification
1	Water consumption less than 25 M3/day;	Not Applicable located within G.I.D.C Saykha
2	Fuel consumption less than 25 TPD;	Not Applicable located within G.I.D.C Saykha
3	Not covered in the category of MAH units as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989 as per the legal undertaking submitted with EIA report.	Not Applicable located within G.I.D.C Saykha

c) **Details of Fire permission & PESO permission are not submitted in recommendation.**

Reply of PP:

- Unit would like to inform that the existing CTE obtained by the project is for inorganic products and fire NOC or PESO was not applicable to the unit. Fire NOC and PESO licence will be obtained after grant of EC & after installation of plant & machineries. We assure you that we shall submit PESO & fire NOC after obtaining the same.

d) **PP shall submit approved conservation plan of schedule-I species.**

Reply of PP:

- Unit would like to clarify that conservation plan of schedule-I species was submitted to The District Forest Officer, Bharuch dated 13/10/2023 and the copy submitted.
- While we approached The District Forest Officer, Bharuch for giving approved conservation plan of schedule-I species, they said the submitted letter is sufficient for conservation plan and that they can start the work for conservation plan as submitted in the letter dated 13/10/2023. They till date have not issued any such conservation plan to the industry and the process was new to them.

As decided in past, committee noted that, PP those have submitted a conservation plan to the office of the concerned authority. The approval of the conservation plan takes time which are from months to years. The decision part is lies with concerned authority. The responsibility of PP is to submit he conservation plan and comply the gap if any. Accordingly, PP has performed the part responsibility i.e Submission of conservation plan and treated as applicable.

After detailed discussion, it was decided to recommend the project to SEIAA, Gujarat for grant of Environmental Clearance with conditions mentioned in earlier Recommendation Letter forwarded from SEAC-GEN-99-IND3/6600 dated: 04.12.2023. along with following ;

B. Ensure compliance of category as defined in the amendment to EIA Notification, 2006 vide SO 1599 (E) dated 25/06/2014. i.e. Conditions of small units: (in case of 5 (f) category units and outside the GIDC)

Sr no.	Condition	Compliance with justification
1	Water consumption less than 25 M3/day;	Not Applicable located within G.I.D.C Saykha
2	Fuel consumption less than 25 TPD;	Not Applicable located within G.I.D.C Saykha
3	Not covered in the category of MAH units as per the Management, Storage, Import of Hazardous Chemical Rules (MSIHC Rules), 1989 as per the legal undertaking submitted with EIA report.	Not Applicable located within G.I.D.C Saykha

Comments:

Unit is located within the GIDC so this small scale condition is not applicable.

The meeting ended with a vote of thanks to the chair.

***

Minutes approved by:

1.	Shri Akshay Kumar Saxena, Chairman, SEAC	
2.	Dr. S. C. Pant, Vice Chairman, SEAC	
3.	Shri D. C. Chaudhari, Member, SEAC	
4.	Shri J. K. Vyas, Member, SEAC	
5.	Shri Anand Zinzala, Member, SEAC	
6.	Shri B. M. Tailor, Member, SEAC	
7	Shri D.M.Thaker, Member Secretary, SEAC	