Minutes of the 512th meeting of the State Level Expert Appraisal Committee held on 1st November 2022 through Video Conference (VC) on National Informatics Centre (NIC).

In the wake of recent crisis of COVID-19, 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 01/11/2022 at 13.30 hrs.

The 512th meeting of the State Level Expert Appraisal Committee (SEAC) was held online by Video conferencing on 1st November 2022 at 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, 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/IND/233886/2021	**M/s UltraTech Cement Limited** 20, 21, 22, 23, 33, 25, 26, 27, 86, 87 at Magdalla Port, Village: Gaviyar, Taluka: Choryasi, District- Surat	EC

Category of the unit: **3(b)**

Project status: **Expansion**

1) Details of Application:

1.1. Type of application:	Application for EC - Expansion in cement production capacity under clause 7 (ii) of EIA Notification, 2006.
1.2. Proposal no.	SIA/GJ/IND/233886/2021
1.3. Category of Project:	Category B1
1.4. Date of application: (Online accepted by SEAC)	17.10. 2022

1.5. Documents Submitted by Project Proponent (PP)	EIA/ EMP along with Annexures.
1.6. TOR No. & Date:	-
1.7. Technical expert / Environmental Consultant:	J.M. EnviroNet Pvt. Ltd.
1.8. SEAC Meeting No. and Date:	512th SEAC meeting dated: 01.11.2022
1.9. ADS vide letter dated:	-
1.10. Reply Submitted by PP dated:	-
1.11. Revised Consideration SEAC Meeting No. and Date:	Not applicable

2) This is an existing unit proposed for expansion of Clinker Grinding Unit with Cement production as mentioned below:

S. No.	Product	CAS Number	Capacity, TPM	End use
1.	Cement (OPC / PPC / PSC / Composite)	65997-15-1	208,333.33	Cement is used in concrete for different types of construction purpose, based on the market scenario and demand will produce cement / product mix of OPC, PPC, PSC & Composite at any ratio in line with the relevant standard of BIS and EC and CTE / CTO of 4.0 MTPA.
	Total		**208,333.33**	

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

4) The proposal was considered in the SEAC video conference meeting dated 01.11.2022.

5) Project proponent (PP) and their Technical Expert M/s J.M. EnviroNet Pvt. Ltd remain present during video conference meeting.

6) As per MOEF&CC OM *"Guidelines for granting EC under para 7(ii)(a) of EIA Notification, 2006, for expansion upto 50%, within the existing premises/ mine lease area, without additional land acquisition" vide* No: F.No. IA3-22/10/2022-IA.III [E 177258] dated: 11.04.2022 relevant paras for this project are as under:

Para-5: Scenario (III): *Intended change through modernization/ change of product mix/ expansion upto 40 % based on successful compliance of previous environmental safeguard conditions related to expansion of 20%, the public consulation is exempted.*

Para-6: *Project proponent shall apply in the requisite form on the Parivesh portal under para 7(ii) of EIA Notification 2006, along with EIA/EMP reports based on standard TORs and public consultation report, if applicable. The concerned EAC/SEAC shall appraise the project proposal and it may prescribe additional*

sector specific and/ or other environmental safegrounds after due diligence, as required.

7) Project proponent has submitted EIA Report prepared by M/s. J.M. EnviroNet Pvt. Ltd based on the Standard TORs.

8) Commitee noted that PP is proposing only 25% expansion in Cement production capacity (from 2.0 MTPA to 2.5 MTPA) by up-gradation of existing Roller Press along with mechanized clinker feeding system within the Existing Grinding unit under section 7(ii) EIA Notification, 2006 & as amended thereof.

9) Earlier PP obtained EC. Unit is having Valid CCA of the Board for existing plant. PP submitted that there is no legal court case and public complaint against unit.

10) Commitee noted that Certified compliance report (CCR) from MOEF&CC dated: 13.08.2021 for existing EC. As per CCR, out of total 42 conditions, 21 are compiled, 06 are agreed to comply, 11 are being compiled, 01 is not applicable and 03 are agreed.

11) 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, Green belt, etc.

12) 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 April-2022 to June-2022. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx and NOx at three 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).

13) 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.

14) Commitee asked to submit the following details:
   - ✓ Treatment of domestic effluent instead of disposal in soal pit.
   - ✓ Details of CER and revised EMP including the CER as per MoEF&CC OM dated: 30.09.2020.

15) PP later on submitted the following details vide email:
   - ✓ Treatment of domestic effluent in STP.
   - ✓ Details of CER and revised EMP including the CER as per MoEF&CC OM dated: 30.09.2020.
   - ✓ Copy of request letter to IRO, MoEF&CC dated: 01.11.2022 for latest CCR.

16) Commitee noted that as per MoEF&CC OM dated: 08.06.2022 regarding Certified Compliance report of existing EC, PP has submitted CCR of MoEF&CC dated: 13. 08.2021 (date of inspection is 26.07.2021)

and date of submission of EC application is 13.10.2021. Out of 42 conditions, 21 are complied, 6 are agreed to comply, 11 are being complied, 1 is not applicable and 3 are agreed.

17) Further, committee noted that successful compliance of previous environmental safeguard conditions is mandatory requirement. PP has submitted the CCR which is older than one year in which no conditions are not complied. Hence, a special condition is imposed for submission of latest CCR of concerned authority within 30 days.

18) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

<table>
<tr><th>Sr. no.</th><th>Particulars</th><th>Details</th></tr>
<tr><td>A</td><td>Total cost of Proposed Project
(Rs. in Crores):
<table>
<tr><th>Total Project Cost</th></tr>
<tr><td>Rs. 50 Crores for proposed activity</td></tr>
</table>
<table>
<tr><th>Details</th><th>Project Cost
(Rs. In Crores)</th></tr>
<tr><td>Land</td><td>0</td></tr>
<tr><td>Building</td><td>5</td></tr>
<tr><td>Machinery</td><td>44.5</td></tr>
<tr><td>Env. & Safety</td><td>0.5</td></tr>
<tr><td>Miscellaneous</td><td>0</td></tr>
<tr><td>Total</td><td>50</td></tr>
</table></td><td></td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>B</td><td colspan="2">Land / Plot ownership details:
(Linking between Land ownership and PP is required.)
Total Plant area is 19.89 ha. Out of Total land 17.66 ha is under the possession of the company and also converted for industrial use while 2.23 ha is Leased area.</td></tr>
<tr><td>B-1</td><td colspan="2">In case of outside GIDC only -</td></tr>
<tr><td></td><td colspan="2">Siting Criteria
<table>
<tr><th>Sr. no.</th><th>Environmental Sensitivity</th><th>Name/Specific details</th><th>Aerial Distance in Km</th></tr>
<tr><td>1.</td><td>Habitat (Residential Area)</td><td>Gaviyar</td><td>0.55 km in SSE direction</td></tr>
<tr><td>2.</td><td>Eco sensitive zones</td><td>None</td><td>No ESZ</td></tr>
<tr><td>3.</td><td>Wild life sanctuaries/National Parks</td><td>No National Parks & Wildlife Sanctuaries fall within the 10 km radius of the study area.</td><td>No National Parks & Wildlife Sanctuaries fall within the 10 km radius of the study area</td></tr>
<tr><td>4.</td><td>Water Bodies</td><td></td><td></td></tr>
</table></td></tr>
</table>

		River	i. Tapi River ii. Dumas Distributary iii. Tena River iv. Mindhola River	i. Adjacent in North direction ii. 0.5 km in SE direction iii. 7.5 km in NNW direction iv. 8.0 km in SSW direction
		Natural Nallah/Drain	There is no Nallah / Drain within the project site.	There is no Nallah / Drain within the project site.
		Lake/Pond/Wetlands	Gaviyar Wetland	700 m in South direction
		Water supply Tanks/Reservoirs	There are no Water supply Tanks / Reservoirs in nearby area to proposed locations.	There are no Water supply Tanks / Reservoirs in nearby area to proposed locations.
		Canal	There is no canal within the project site.	There is no canal within the project site.
	5.	Protected Monuments/Heritage sites/Public Buildings etc.	There are no any Protected Monuments / Heritage sites / Public Buildings etc. is within 10 km radius of proposed location.	There are no any Protected Monuments / Heritage sites / Public Buildings etc. is within 10 km radius of proposed location.
	6.	National/State Highway OR Express way	i. SH-168 ii. NH-6	i. 1.5 km in NE direction ii. 6.0 km in North direction
	7.	Coastal Regulation Zone (CRZ) (In case of Coastal area projects)	No CRZ	No CRZ
	8.	Ground water table in meter	5.21 to 8.64 mbgl	No ground water use
	9.	Railway Line	Surat Railway Station	13.0 km in NE direction
	10.	Air Port	Surat International Airport	2.0 km in SSE direction
B-2	**Area adequacy** Total Plot area (sq. meter): 198900.0 sq. m. **Area Adequacy table:**			

S. No.	Unit	Area (in ha)
1.	Plant & Machineries	5.92
2.	Office Buildings and stores area	1.05
3.	Paved Area (Road, Corridor, Parking and Drainage)	2.785
4.	Greenbelt / Plantation	5.82
5.	Open Area	4.315
Total		**19.89**

1) Total Plant area is 19.89 ha. Out of Total land 17.66 ha is under the possession of the company and also converted for industrial use while 2.23 ha is Leased area.
2) Out of the total owned plant area (i.e., 17.66 ha) 33% area i.e., 5.82 ha has been developed under greenbelt & plantation.

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.

B-3 **Green belt area**

	Total (Sq. meter)
Area in Sq. meter	58200
% of total area	33 %

Out of the total owned plant area (i.e., 17.66 ha) 33% area i.e., 5.82 ha has been developed under greenbelt & plantation.

Comments:

The condition shall be given that -

- The PP shall develop green belt (58,200 Sq. m i.e. 33 % of the total plot area) as per the undertaking 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.

C **Employment generation**

Total
299

Source- From Local Area based on Qualification / Skilled / Unskilled / Outside

D **WATER**

D-1

Source of Water Supply: Surat Municipal Corporation (through tanker)

Permission for drawl of 70 KLD water has been obtained from SMC vide letter no. S.W. (ATHWA) ZONE/OUT/4007 dated 27.09.21 and the same will be amended as per the current proposal.

Comments:

Prior permission from concerned authority shall be obtained for withdrawal of water.

D-2

Water consumption (KLD)

Category	Quantity KLD	Remarks
(A) Domestic & Gardening	14	Source - Surat Municipal Corporation
		-
(B) Industrial		
Process	NA	-
Washing	NA	-
Boiler	NA	-
Cooling	56	Source - Surat Municipal Corporation.
Others (Dust Suppression)	NA	-
Industrial Total	56	-
Total (A + B)	70	-

1. The total water requirement after Expansion of Clinker Grinding Unit will be 70 KLD; which will be sourced from Surat Municipal Corporation.
2. Permission for drawl of 70 KLD water has been obtained from SMC vide letter no. S.W. (ATHWA) ZONE/OUT/4007 dated 27.09.21 and the same will be amended as per the current proposal.

Comments:

- The water consumption above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.

D-3

Waste water generation (KLD)

Category	Waste water (KLD)	Remarks
(A) Domestic	2.9	Domestic wastewater (2.9 KLD) generated from the plant
(B) Industrial		
Process	0	-
Washing	0	-
Boiler	0	-
Cooling	0	Water used for cooling at various stages of

			cement manufacturing will be evaporated, no waste water will be discharged.
	Others	0	-
	Total Industrial waste water	2.9	-
	Total [A + B]	2.9	Zero Liquid Discharge (ZLD) will be maintained.

Comments:

- The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4	**Break-up of waste water disposal & facility (For Domestic)** Domestic wastewater (2.9 KLD) generated from the plant is being / will be disposed of in soak pits/STP.

Comments:

- Domestic wastewater generation shall not exceed 2.9 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.
- Unit shall provide STP with adequate capacity.

D-5	**Break-up of waste water disposal & facility (For Industrial)**

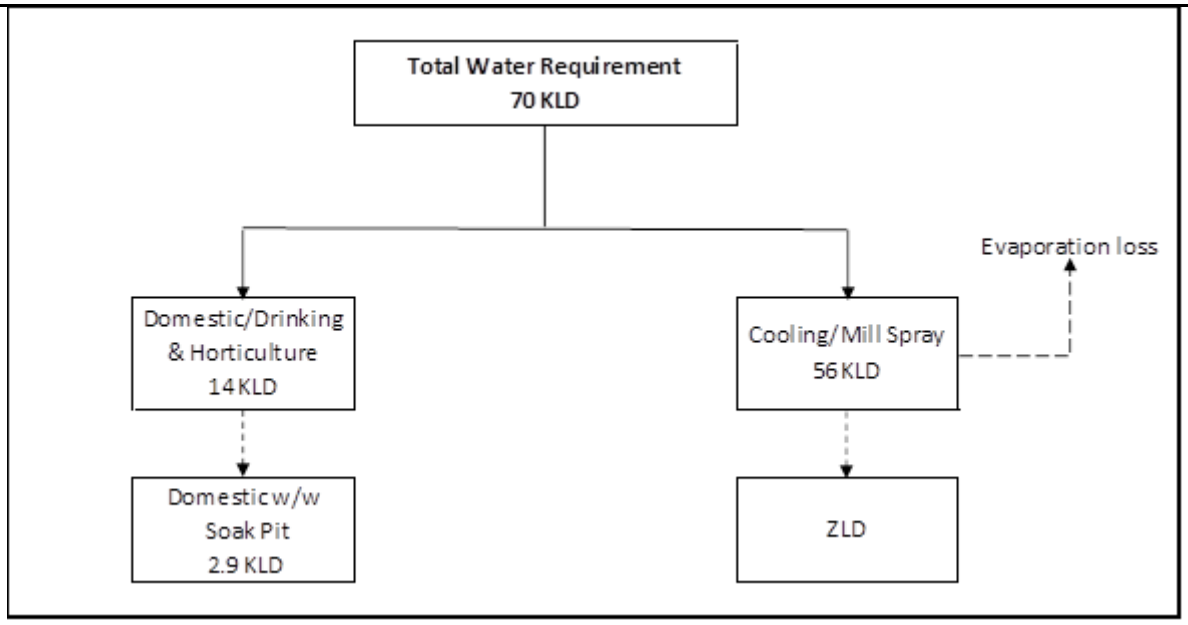
1.

Sr. no.	Quantity KLD	Facility
1.	2.9	Domestic wastewater generated from the plant is being / will be disposed of in soak pits/STP.
Total	2.9	Zero Liquid Discharge (ZLD) will be maintained and treated water will be used for gardening/horticulture.

Comments:

There shall be no generation of wastewater from mnaufcaturing process.

D-6	**Simplified water balance diagram**



D-7 **Summary**

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project **(A)**	70	Source - Surat Municipal Corporation through tankers
Quantity to be **recycled (B)**	0	-
Total **fresh water** requirement **(C)**	70	-
Ensure **Total water requirement = Recycled water + Fresh water** **i.e., A = B + C** 1) Total water requirement for the project: 70 KLD 2) Quantity to be recycled: 0 KLD 3) Total fresh water requirement: 70 KLD		

E	**AIR**
E-1	Power (Electricity) requirement: 11 MW
E-2	**Flue gas emission details**

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.	Clinker Grinding Unit of Cement Mill - 1	15	-	-	Particulate Matter	Bag House
2.	Clinker Grinding Unit of Cement Mill - 2	30	-	-	Particulate Matter	Bag House

-

E-3	**Process gas –** No pyro/ fuel burning operations

E-4	**Fugitive emission details with its mitigation measures.**

Sr. No.	Source	Probable Pollutant Emission	Control Measures/ APCM
1.	Grinding Unit	Particulate Matter	• Covered Conveyor belts will be provided for transfer of raw materials / finished products. • Additives (Lime Powder) will be stored in covered storage yard. • 02 Bag Houses has been installed along with Cement Mill stack and various bag filters have been installed at all materials transfer points in the existing clinker grinding unit. • Fly ash will be sourced from Thermal Power stations at Ukai and Reliance Industries Ltd. at Hazira through closed bulkers (from other sources) & fed into silo through pneumatic system. • Clinker, fly ash and Cement will be stored in the silos. • Gypsum will be stored in the covered sheds. • Road sweeping machines will be used • Proper maintenance of vehicles will be done to reduce gaseous emissions • PUC certified vehicles will be used • Greenbelt/ plantation will be carried out along the plant boundary to attenuate air pollution.

Comments for E2, E3 & E4:

- The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- The air pollution control measures, has been proposed by PP for checking flue gas emission, fugitive gas emission, with adequate systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Solvent management, VOC emissions etc.**
F-1	**Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.**
Not Applicable (as this is a Standalone Clinker Grinding unit) no chemical processing involved	
F-2	**VOC emission sources and its mitigation measures for achieving maximum solvent recovery and minimize VOC generation:**

Not Applicable (as this is a Standalone Clinker Grinding unit) no chemical processing involved

F-2	VOC emission Sources and its Mitigation Measures.		
Sr. No.	**Emission Source**	**Probable Pollutant Emission**	**Control measures**

F-3	**LDAR proposed:** Not Applicable (as this is a Standalone Clinker Grinding unit) no chemical processing involved

S. N.	Component	Frequency of monitoring	Repair preventive maintenance schedule
As example given below			

F-4	**LDAR for specific solvent:** Not Applicable (as this is a Standalone Clinker Grinding unit) no chemical processing involved

As example given below.

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

	Comments for F-1, F-2, F-3 & F-4 Not Applicable (as this is a Standalone Clinker Grinding unit) no chemical processing involved
G	**Hazardous waste**
G-1	**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
1.	Used / Spent Oil Waste	Different sections of Plant Maintenance	Category 5.1 & Schedule - I	6.87 MT/ Annum	Will be Send to the authorized recyclers or reuse in plant
2.	Empty Barrels	Different sections of Plant Maintenance	Category 33.3 & Schedule - I	6 MT/ annum	Will be send to the authorized recyclers

Comments:

- Waste management includes hazardous waste management and other solid waste management.

Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.

G-2	Non- Hazardous waste management matrix

The Municipal Solid Waste will be segregated into Bio-degradable and non-biodegradable. The Bio-degradable municipal waste will be composted & will be used as manure in greenbelt development / plantation and the non-biodegradable waste will be disposed-off suitably. In addition to this, concept of waste minimization 3 R's (Recycle, Reduce & Recover) scheme will be adopted by the company.
Dust collected (approx. 600 TPA) from various APCEs will be recycled back into the process.

H	SAFETY details
H-1	Details regarding storage of Hazardous chemicals Not Applicable

a) Storage of Hazardous chemicals in Tanks

As example given below.

Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
TANK FARM (NON-PESO)				
1				
TANK FARM (PESO)				
2	Diesel	20 KL	2	Petroleum class - B

Safety Measures for PESO Underground storage tank farm:

- Suitable fire extinguishers and fire hydrant system for fire- fighting in emergency situation.
- Warning signs have been installed in the diesel storage area.
- The area has been declared as No - Smoking area.
- No manual handling, only handling with fixed pipeline.
- Static earthing provision shall be made for road tanker as well as storage tank.
- Flame arrestor with breather valve shall be provided on vent line.
- Road tanker unloading procedure shall be prepared and implemented.
- Fire load calculation shall be done and as per fire load hydrant system shall be provided and fire extinguishers shall be provided as per fire load calculation.
- Spark arrestor shall be provided to all vehicles in side premises.
- Flame proof type equipment and lighting shall be provided.
- Trained and experience operator shall be employed for tank farm area.
- Label (hazard identification) capacity and content shall be displayed on tanks.

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

Not Applicable (As proposal is for Standalone Clinker Grinding Unit)

Sr. no	Name of Chemical	Capacity of Drum/Bag/	Number of Drum/Bag/	Hazardous Characteristics

		Cylinder/ Glass Bottle	**Cylinder/ Glass Bottle**	**of Chemical**

c) Safety details of Hazardous Chemicals: Not Applicable (As proposal is for Standalone Clinker Grinding Unit)

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	**-**
CORROSIVE& CHEMICALS	**-**
TOXIC CHEMICALS	**-**
REACTIVE CHEMICALS	**-**

Applicability of PESO: Yes, for only Petroleum class – B i.e. Diesel

Comments:

- Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The Petroleum and Explosives Safety Organization (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the details which attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.

H-2	Types of hazardous Processes involved and its safety measures:

As example given below.

Types of process	Safety measures including Automation
Amination	**-**
Bromination	**-**
Chlorination	**-**
Hydrogenation	**-**
Nitration	**-**
Sulphonation	**-**

H-3	Details of Fire Load Calculation

Total Plot Area:	19.89 Ha.
Area utilized for plant activity:	10.225 Ha.
Area utilized for Hazardous Chemicals Storage:	0 Ha
Number of Floors:	1 Nos.
Water requirement for firefighting in KL:	112 KL
Water storage tank provided for firefighting in KL:	300 KL
Details of Hydrant Pumps:	Yes, 3 Nos. of Fire pumps are installed. Maintains the fire header pressure at 8 Kgs/cm2.

	A. 01 Nos. of main pump, Capacity 273 M3/hr. B. 01 Nos. of diesel pump, Capacity 273 M3/hr. C. 01 Nos. Jockey pump, Capacity 10.80 M3/Hr.
Nearest Fire Station:	Fire station Vesu, Surat. (6 Km in East direction)
Applicability of Off-Site Emergency Plan:	Off site emergency plan has been incorporated in the EIA / EMP Report in Chapter - 7, Section - 7.2.4.4.

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 300 KL. SEAC found it as per the requirement.

H-4	**Details of Fire NOC/Certificate:**

Fire NOC is not required at this stage as per Gujarat govt resolution no: FAC/142020/456894/M.3 dated 09.02.2022

H-5 Details of Occupational Health Centre (OHC):

To control and minimize the risks at workplace, M/s. UltraTech Cement Limited (Unit: Narmada Cement Magdalla Works) implements Health, Safety and Environment Policy (HSE) with the following objectives:

- To prevent hazards
- To provide safe and healthy environment to all the employees.

The following Health, Safety and Environment Policy (HSE) exists at workplace:

a) Monitoring health of all Regular and Contractual workers.

b) Initial Medical Examination or Pre employment Medical examination is done mandatorily for parameters ECG, Lung Function Test - Spirometry, Hearing Test - Audiometry in a sound proof chamber, Blood Tests like Complete Blood Count, Lipid Profile, Sugar levels, Urea, Creatinine, Liver Function Test, Urine Routine & Chest X ray.

c) All data relating to Occupational Health and Patient history are being maintained.

Number of permanent Employee:	55
Number of Contractual person/Labour:	217
Area provided for OHC:	350 M2
Number of First Aid Boxes:	15 nos.
Nearest General Hospital:	6 Km
Name of Antidotes to be store in plant:	-

Comments

Project proponent has provided Occupational health center with adequate provision of manpower,

equipment and operational cost. SEAC finds it as per the provisions of Gujarat Factory Rules 1963.

H-6	**Details of Emergency measures proposed and preparedness action for chemicals and fire explosion etc.** ➢ Suitable fire extinguishers (262 Nos.), Multipurpose fire tender, fire hydrant system and fire buckets has been provided for fighting the fire during emergency. ➢ Stores staff has been imparted the training for first aid firefighting to prevent/extinguish the fire at initial stage.

I	**Details of Membership for Common Facility:**

Sr. No.	Membership for Common Facility	Membership Certificate issuing agency Date of Issue and validity of membership
01	CETP	Not Applicable
02	TSDF site	Not Applicable
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	Obtained
08	FIRE permission	Not Applicable
09	Health Certificate	Obtained

J	**Reduce / Reuse / Recycle measures adopted.**

(a) Reduce

Sr. No.	Item	Quantity	% percentage
1.	Fly Ash (used in Manufacturing of PPC Cement)	0.717 MTPA	100 % quantity of received

(b) Reuse

Sr. No.	Item	Quantity	% percentage
1.	Dust collected from various APCEs is totally recycled back into the process	600 TPA	100 %

(c) Recycle

Sr. No.	Item	Quantity	% percentage
1.	Chemical Gypsum	100000 TPA	100 % quantity of received

K	**EMP Details**

Sr. No	Unit	Detail	Proposed Capital Cost (Rs. In Lakhs	Total Recurring Cost per Month (Rs. In Lakhs per Annum)
1.	Wastewater	Domestic wastewater (2.9 KLD) generated from the plant is being / will be disposed of in soak pits/STP	No additional activity proposed - At actual / As per existing practice	No additional activity proposed - At actual / As per existing practice
2.	Air	To maintain stack PM emissions below prescribes limit unit has already installed Bag House of adequate capacity at both cement mill stacks and bag filters at material transfer points of belt conveyors, silos and cement packing section. However, additional bag filters will be installed at proposed mechanized clinker handling system to control the fugitive dust emissions. Moreover, all conveyor belts are covered, clinker, fly ash and cement is being stored at silos, fly ash is being handled pneumatically to avoid leakages and spillages during manual handling, mobile road sweeping is deployed to maintain proper housekeeping of plant area, plant internal roads are concreted, green belt development etc.	50 Lakhs	4 Lakhs
3.	Hazardous Management	There is no chemical processing / storage at proposed project. However a small quantity of Used oil will be generated and same is being/will be stored send to authorized recycler as per existing practice	No additional activity proposed - At actual / As per existing practice	No additional activity proposed - At actual / As per existing practice
4.	Fire & Safety	Suitable fire extinguishers (262 Nos.), Multipurpose fire tender, fire buckets, Electrical Jockey Pump, Fire Hydrant System, (Pipe Hydrant System, Flexible Pipe, Valve, Fire Brigade Booster, Booster Pump Set, Fire Hose, Block Plan, etc.)	No additional activity proposed - At actual / As per existing practice	No additional activity proposed - At actual / As per existing practice
5.	Green Belt Development	33% of the greenbelt development has already been done, Gap filling is proposed.	No additional activity proposed - Only gap filling and	0.5 Lakhs

			maintenance	
6.	Occupational Health	a) Monitoring health of all Regular and Contractual workers. b) Initial Medical Examination or Pre-employment Medical examination is done mandatorily for parameters ECG, Lung Function Test - Spirometry, Hearing Test - Audiometry in a sound proof chamber, Blood Tests like Complete Blood Count, Lipid Profile, Sugar levels, Urea, Creatinine, Liver Function Test, Urine Routine & Chest X ray. c) All data relating to Occupational Health and Patient history are being maintained.	No additional activity proposed - At actual / As per existing practice	No additional activity proposed - At actual / As per existing practice
7.	Noise Control	Provided adequate noise control measures such as acoustic insulation, hood, silencers, enclosure vibration dampers, regular maintenance of machineries, green belt development around the plant etc.	No additional activity proposed - At actual / As per existing practice	No additional activity proposed - At actual / As per existing practice
8.	Environment Monitoring Program	Environmental Monitoring is being done as per prescribed frequencies of EC and CC&A.	No additional activity proposed - At actual / As per existing practice	0.5 Lakhs
9.	CER Activity	CER will be done with the focus of prescribed areas mention in CER notification such as Education, Health care, Sustainable Livelihood, Infrastructure development, Social welfare	Rs. 50 Lakh	-
Total Proposed			**1 Crore**	**5 Lakh**

Comments:

- The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

L	**Details of Proposed CER** -

Sr. No	**Activities**	**Rs in Lac.**
A	**Education**	

1	Develop existing Anganwadi centre in to model Anganwadi centre by repairing, painting, provide toys etc.	2
2	Construction/Repairing of Sanitation in nearby school.	2
3	Provide furniture in schools	5
4	Stationary Distribution in Schools	2
5	Special support to girl child for education	1
6	School building repairing	6
	Total	**18**
B	**Health Care**	
1	General Health Camp	2
2	Mother and Child Health care (Ante Natal Care, Pre Natal Care, post natal care and Neonatal care) in association with ICDS dept.	1.5
	Total	**3.5**
C	**Sustainable Livelihood**	
1	Construction of cattle watering troughs	1.5
2	Tree plantation with tree guard in villages/schools	5
3	Solar roof top in school & temples	9
	Total	**15.5**
D	**Infrastructure Development**	
1	Drinking water facility structure for public.	1
2	Solar street lights in villages/general roads	5
3	Sitting arrangement facility for general public	2
	Total	**8**
E	**Social Change/Welfare**	
1	Support for encourage sports activities	1
2	Social & Hygiene Awareness through painting on common walls in villages.	4
	Total	**5**
	Grand Total	**50**

Sr. No.	Key Focus Areas	Years (Rs in Lacs)					Total (Rs in Lacs)
		1st Year	2nd Year	3rd Year	4th Year	5th Year	
1	Education	3	4	3	3	5	**18**
2	Health & Family Welfare	1	0.5	0.5	0.5	1	**3.5**
3	Sustainable Rural Livelihood	4	4	2	2.5	3	**15.5**
4	Infrastructural Development Expenses	2	2	2	1	1	**8**
5	Social Welfare	1	1	1	1	1	**5**
	Total	**11**	**11.5**	**8.5**	**8**	**11**	**50**

19) DELIBRATION AND RECOMMENDATION:

"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:

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. PP shall submit the latest Certfied Compliance Report (CCR) of existing EC from concerned authority within 30 days.
2. 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].**
3. 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.
4. All measures shall be taken to avoid soil and ground water contamination within premises.
5. PP shall carry out the pre-employment and periodic medical check-up of their employees covering lungs and X-ray test.
6. **Safety & Health:**

a) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
b) 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.
c) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
d) 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.
e) PP shall install adequate fire hydrant system within premises and separate storage of fire water and foam for the same shall be ensured by PP. Also PP shall provide alarm system in nearby fire station for emergency of any fire in plant area.
f) 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 labor within premises.
g) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
h) Personal Protective Equipments (PPE) shall be provided to workers and its usage shall be ensured and supervised.
i) First aid box shall be made readily available in the unit.
j) Occupational health surveillance of the workers shall be done and its records shall be maintained. Pre-employment and periodical medical examination for all the workers shall be undertaken on regular basis as per Factories Act & Rules.

WATER

7. Total water requirement for the project shall not exceed 70 and it shall be met from Surat Municipal Corporation through tankers. Prior permission from concerned authority for withdrawal of water shall be obtained.
8. There shall be no generation of wastewater from cement manufacturing process.
9. Domestic wastewater generation shall not exceed 2.9 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.
10. 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.
11. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
12. Proper logbooks of STP; reuse/ recycle of treated/ untreated effluent; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to

time.

AIR:

13. As per the guidelines of CPCB for cement plant (considering only grinding part of the guidelines) following minimum Air Pollution Control Measures (APCM) should be provided.

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
1	Cement Mill	Close Circuit System	Particulate Matter	Bag filter
2	Material Handling	Close Conveyor		N.A.
3	Packing House	Close Automatic Machine		Bag filter

14. The above air pollution control devices are indicative in nature. Cement Plant may explore the possibilities of other latest devices to achieve the better results to comply with the air pollution control norms prescribed by the GPCB.
15. The applicant shall carry out third party monitoring with respect to the design, and efficacy of the proposed air pollution control equipment through the credible institute like NPC, LDCE or any other institute of repute.
16. The fugitive emission in the work zone environment and ambient air environment shall be monitored. The emission shall confirm to the standards prescribed by the concerned authorities including the Director of Industrial Hygiene and Safety as well as the Gujarat Pollution Control Board from time to time. Following indicative guidelines shall be followed to reduce the fugitive emission.
    a) Enclosure shall be provided at all loading and unloading operations.
    b) Water shall be sprayed on all raw materials stockpile periodically to retain some moisture in top layer except wet gypsum to reduce the fugitive emission.
    c) All transfer points shall be fully enclosed.
    d) Accumulated dust on the ground and other surfaces shall be removed / swept regularly and water the area after sweeping.
    e) Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
    f) Air borne dust shall be controlled with water sprinklers at suitable interval in the plant.
    g) A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission
17. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.

18. There shall be no process gas emission.
19. Regular monitoring of ground level concentration of PM_{10} and $PM_{2.5}$, shall be carried out in the impactzoneand 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 toexceed the prescribed limits, necessary additionalcontrol 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:

20. All the hazardous/ solid waste management shall be taken care as per the point no. G-1 as mentioned above.
21. 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.
22. The company shall strictly comply with the rules and regulations with regards to handling and disposal of Hazardous waste in accordance with the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016, as may be amended from time to time. Authorization of the GPCB shall be obtained for collection / treatment / storage / disposal of hazardous wastes.
23. Hazardous wastes shall be dried, packed and stored in separate designated hazardous waste storage facility with pucca bottom and leachate collection facility, before its disposal.
24. 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.

NOISE:

25. The overall noise level in and around the plant area shall be kept well within the standards by providing noise control measures including engineering control like acoustic insulation, hoods, silencers, enclosures etc. on all source of noise generation. The ambient noise level shall confirm to the standards prescribed under Environment (Protection) Act & Rules, 1986 amended from time to time.
26. Noise levels for workers shall be as per the Factories Act & Rules.

CLEANER PRODUCTION AND WASTE MINIMISATION:

27. The company shall undertake following various waste minimization measures including :
    a) Metering and control of quantities of active ingredients to minimize waste.
    b) Reuse of by-products from the process as raw materials or raw materials substitutes in other process.
    c) Use of automated and enclosed filling to minimize spillage.
    d) Venting equipment through vapour recovery system.
    e) Use of close feed system into batch reactors.

GREENBELT AREA AND OTHER PLANTATION

28. The PP shall develop green belt within premises (58,200 Sq. m i.e. 33 % of the total plot area) as per the undertaking 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.
29. The unit shall develop green belt within premises as per the CPCB guidelines. However, if the adequate land is not available within the premises, the unit shall take up adequate plantation on road sides and suitable open nearby areas in consultation with the GPCB and submit an action plan of plantation for next three years to the GPCB.
30. Drip irrigation / low-volume, low-angle sprinkler system shall be used for the green belt development within the premises.

OTHERS:

31. Transportation of the clinker and the cement shall be done in the vehicles covered from the top.
32. The project proponent shall also comply with any additional condition that may be imposed by the SEAC or the SEIAA or any other competent authority for the purpose of the environmental protection and management.
33. The project proponent shall carry out the activities of Rs 50 Lakhs [Develop existing Anganwadi centre in to model Anganwadi centre by repairing, painting, provide toys etc.; Construction/Repairing of Sanitation in nearby school; Provide furniture in nearby schools; Stationary Distribution in Schools; Special support to girl child for education; School building repairing; General Health Camp; Mother and Child Health care (Ante Natal Care, Pre Natal Care, post natal care and Neonatal care) in association with ICDS dept.; Construction of cattle watering troughs; Tree plantation with tree guard in villages/schools; Solar roof top in school & temples; Drinking water facility structure for public.; Solar street lights in villages/general roads; Sitting arrangement facility for general public; Support for encourage sports activities and Social & Hygiene Awareness through painting on common walls in villages.] 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.
34. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s J.M. EnviroNet 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.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

35. 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.

36. 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.
37. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
38. 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.
39. 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.
40. 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.
41. 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/IND3/68644/2021	**M/S. COLSMITH DYES & INTERMEDIATES** Plot NO. C-213 Saykha Industrial Estate, Ta: Vagra Dist: Bharuch Gujrat-392140	EC

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

Project status: **New**

1) Details of Application:

1.1. Type of application:	EC-New
1.2. Proposal no.	SIA/GJ/IND3/68644/2021
1.3. Category of Project :	5 (f) – B1
1.4. Date of application : (Online accepted by SEAC)	Submitted by Proponent : 24/05/2022 Accepted by SEAC: 26/08/2022
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. & Date :	SIA/GJ/IND3/68644/2021dtd 25/10/2021
1.7. Technical expert / Environmental Consultant :	B. S. Rana
1.8. SEAC Meeting No. and Date:	512th No. SEAC Meeting Date : 01/11/2022
1.9. ADS vide letter dated :	--
1.10. Reply Submitted by PP dated:	--

1.11. Revised Consideration SEAC Meeting No. and Date:	---

2) This is a new project proposed for manufacturing of synthetic organic chemicals (dyes and dyes intermediates) as mentioned below:

Sr No	Product Name	CAS No	MT/Month
Group-A Dye Intermediate			
1.	4 C.A.P.	95-85-2	50
2.	G-SALT	842-18-2	
3.	SODIUM NAPTHIONATE	130-13-2	
4.	P.N.C.B.O.S.A.	946-30-5	
5.	O.N.C.B.O.S.A.	946-30-5	
6.	P.A.A.B.S.A.	104-23-4	
7.	P.N.A.O.S.A.	30693-53-9	
8.	METANILIC ACID	121-47-1	
9.	2.5-ANILINE SULPHONIC ACID	98-44-2	
10.	2.4-ANILINE SULPHONIC ACID	82324-60-5	
11.	2-N.A.D.A.P.S.A.	135-11-5	
12.	4-N.A.D.A.P.S.A	91-29-2	
13.	O.T.5.S.A.	98-33-9	
14.	4ADAPSA	91-30-5	
15.	4NADPSA	91-29-2	
16.	R-SALT	148-75-4	
17.	K-Acid	118-03-6	
18.	ARMSTRONG ACID	81-04-9	
Group-B: REACTIVE DYES			
19.	Yellow HE4G(Yellow 105)	176023-34-0	50
20.	Yellow HE6G (Yellow 135)	77907-38-1	
21.	Orange HE2R(Orange 94)	129651 -47-4	
22.	Orange HER (Orange 84)	91261-29-9	
23.	Red HE3B (Red 120)	61951-82-4	
24.	Red HE7B (Red 141)	61931-52-0	
25.	Red HE8B (Red 152)	71870-80-5	
26.	Blue HERD (Blue 160)	71872-76-9	
27.	Navy Blue HER (Blue 171)	77907-32-5	
28.	Green HE4BD (Green 19A)	61931-49-5	
29.	Yellow ME4GL (Yellow 160)	129898-77-7	
30.	Golden Yellow MERL (Yellow 145)	93050-80-7	
31.	Orange ME2RL (Orange 122)	40986-22-1	
32.	Red ME3BL (Red 194)	23354-52-1	
33.	Red ME6BL (Red 196)		
34.	Red BSRD (Red 111)	88232-20-6	
35.	Blue BF (Blue 222)	93051-44-6	
36.	Navy Blue ME2RL (Blue 248)		
37.	Yellow M4G (Yellow 22)	12226-49-2	

38.	Yellow M8G (Yellow 86)	61951-86-8	
39.	Orange M2R (Orange 4)	12225-82-0	
40.	Red M5B (Red 2)	12226-03-8	
41.	Red M8B (Red 11)	12226-08-3	
42.	Blue M2R (Blue 81)	75030-18-1	
43.	Yellow H4G (Yellow 18)	12226-48-1	
44.	G. Yellow HR (Yellow 12)	35642-64-9	
45.	Orange H2R(Orange 13)	12225-85-3	
46.	Red H8B (Red 31)	12237-00-2	
47.	Red HR (Red 24)	70210-20-7	
48.	Red H3R / P2B (Red 45)	12226-22-1	
49.	Blue H3RP / P3R / PN2R	61968-98-7	
50.	Red Brown H4R (Brown 9)	12225-66-0	
51.	Black HN (Black 8)	12225-26-2	
52.	Yellow FG (Yellow 42)	12226-63-0	
53.	Yellow GR (Yellow 15)	12226-47-0	
54.	G. Yellow R (Yellow 17)	6359-98-4	
55.	G. Yellow RNL 150% (Orange 107)	90597-79-8	
56.	Orange 2R (Orange 7)	12225-83-1	
57.	Orange 3R (Orange 16)	12225-83-1	
58.	Red 5B (Red 35)	12226-12-9	
59.	Red RB (Red 198A)	145017-98-7	
60.	Blue 3R (Blue 28)	12225-45-5	
61.	Blue BBID (Blue 220)	128416-19-3	
62.	Navy Blue GG (Blue 203)	147826-71-9	
63.	Navy Blue RGB (Blue 250)	93951-21-4	
64.	Turq. Blue G (Blue 21)	12236-86-1	
65.	Black B (Black 5)	4197-25-5	
66.	Black RL (Black 31)	12731-63-4	
67.	Black HFGR	17095-24-8	
Group-C: ACID DYES			
68.	Acid Yellow 17	6359-98-4	50
69.	Acid Yellow 23	1934-21-0	
70.	Acid Yellow 36	587-98-4	
71.	Acid Yellow 42	6375-55-9	
72.	Acid Yellow 73	518-47-8	
73.	Acid Yellow 79	12220-70-1	
74.	Acid Yellow 99	10343-58-5	
75.	Acid Yellow 110	12220-74-5	
76.	Acid Yellow 194	61814-52-6	
77.	Acid Yellow 199	70865-20-2	
78.	Acid Orange 7	633-96-5	
79.	Acid Orange 8	5850-86-2	
80.	Acid Orange 10	1936-15-8	
81.	Acid Orange 56	6470-20-8	

82.	Acid Orange 142	61901-39-1	
83.	Acid Red 1	3734-67-6	
84.	Acid Red 4	5858-39-9	
85.	Acid Red 14	3567-69-9	
86.	Acid Red 18	2611-82-7	
87.	Acid Red 33	3567-66-6	
88.	Acid Red 131	12234-99-0	
89.	Acid Red 151	6406-56-0	
90.	Acid Red 182	61901-42-6	
91.	Acid Red 183	6408-31-7	
92.	Acid Red 184	6370-15-6	
93.	Acid Red 186	52677-44-8	
94.	Acid Red 195	12220-24-5	
95.	Acid Red 337	39280-63-2	
96.	Acid Violet 17	4129-84-4	
97.	Acid Violet 49	1694-09-3	
98.	Acid Violet 90	6408-29-3	
99.	Acid Blue 1	116-95-0	
100.	Acid Blue 7	3846- 30- 4	
101.	Acid Blue 9	2650-18-2	
102.	Acid Blue 113	3351-05-1	
103.	Acid Blue158	6370-08-7	
104.	Acid Brown 14	5850-16-8	
105.	Acid Brown 75	8011-86-7	
106.	Acid Brown 161	61724-13-8	
107.	Acid Brown 165	61724-14-9	
108.	Acid Brown 282	12219-65-7	
109.	Acid Brown 315	12219-82-8	
110.	Acid Brown 355	60181-77-3	
111.	Acid Brown 425	119509-49-8	
112.	Acid Black 1	1064-48-8	
113.	Acid Black 52	5610-64-0	
114.	Acid Black 194	61931-02-0	
Group-D: DIRECT DYES			
115.	Direct Yellow 6	1325-38-8	
116.	Direct Yellow 12	2870-32-8	
117.	Direct Yellow 86	50925-42-3	
118.	Direct Yellow 99	138-28-3	
119.	Direct Orange 26	3626-36-6	
120.	Direct Orange 39	1325-54-8	50
121.	Direct Red 16	6227-02-7	
122.	Direct Red 23	3441-14-3	
123.	Direct Red 31	5001-72-9	
124.	Direct Red 80	2610-10-8	
125.	Direct Red 81	2610-11-9	

126.	Direct Red 227	12222-51-4	
127.	Direct Red 239	60202-35-9	
128.	Direct Red 254	101380-00-1	
129.	Direct Blue 15	2429-74-5	
130.	Direct Blue 71	4399-55-7	
131.	Direct Blue 86	1330-38-7	
132.	Direct Blue199	12222-04-7	
133.	Direct Black 22	6473-13-8	
134.	Direct Black 80	8003-69-8	
Group-E: Solvent Dyes			
135.	Solvent Yellow 2	60-11-7	25
136.	Solvent Yellow 14	842-07-9	
137.	Solvent Yellow 16	4314-14-1	
138.	Solvent Yellow 18	6407-80-3	
139.	Solvent Yellow 56	2481-94-9	
140.	Solvent Yellow 72	61813-98-7	
141.	Solvent Yellow 82	12227-67-7	
142.	Solvent Orange 7	3118-97-6	
143.	Solvent Orange 58	71775-93-4	
144.	Solvent Orange 62	52256-37-8	
145.	Solvent Orange 86	81-64-1	
146.	Solvent Orange 99	110342-29-5	
147.	Solvent Red 1	1229-55-6	
148.	Solvent Red 8	33270-70-1	
149.	Solvent Red 23	85-86-9	
150.	Solvent Red 24	85-83-6	
151.	Solvent Red 49	509-34-2	
152.	Solvent Red 127	61969-48-0	
153.	Solvent Violet 9	467-63-0	
154.	Solvent Blue 35	17354-14-2	
155.	Solvent Blue 36	14233-37-5	
156.	Solvent Black 27	12237-22-8	
Group-F: Basic Dyes			
157.	Methyle Violet (Basic Violet 1)		50
158.	Rhodamine B (Basic Violet 10)	81-88-9	
159.	Magenta Powder (Basic Violet 2/14)	3248-91-7	
160.	Auramine O (Basic Yellow 2)	2465-27-2	
161.	Chrysodine Y (Basic Orange 2)	532-82-1	
162.	Metheline Blue (Basic Blue 9)	61-73-4	
163.	Victoria Blue (Basic Blue 26)	2580-56-5	
164.	Diomond Green (Basic Green 1)	633-03-4	
165.	Malachite Green (Basic Green 4)	2437-29-8	
166.	Rhodamine 6G (Basic Red 1)	989-38-8	
167.	Bismark Brown-Y (Basic Brown 1)	10114-58-6	
168.	Bismark Brown-R (Basic Brown 4)	5421-66-9	

Group-G: CHROME PIGMENT			
169.	Scarlet Chrome	12656-85-8	50
170.	Middle Chrome/Lemon Chrome	1344-37-2	
Group-H: PIGMENT POWDER			
171.	Pigment Blue 15:0	147-14-8	25
172.	Pigment Blue 15:1	147-14-8	
173.	Pigment Blue 15:3	147-14-8	
174.	Pigment Blue 15:4	147-14-8	
175.	Pigment Green 7	1328-53-6	
176.	Pigment Orange 13	3520-72-7	
177.	Pigment Orange 34	15793-73-4	
178.	Pigment Red 8 (F4R)	6410-30-6	
179.	Pigment Red 12 (Bordeaux)	6410-32-8	
180.	Pigment Red 31 (Red Violet)	6448-96-0	
181.	Pigment Red 57:1 (Rubine Toner)	09-04-5281	
182.	Pigment Violet 23	6358-30-1	
183.	Pigment Red 112	6535-46-2	
TOTAL			**350**

3) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
4) The proposal was considered in the SEAC video conference meeting dated 01.11.2022.
5) Project proponent (PP) and their Technical Expert M/s B.S.Rana 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) 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 PM_{10}, Sox and NOx at Nine 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).
8) 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.
9) Committee asked to submit the following:

- ✓ Floor-wise fire Plan of the project.
- ✓ Membership of TSDF.

10) Later on PP submitted following details through email
- ✓ Floor-wise fire Plan of the project.
- ✓ Copy of payment receipt for obtaining membership of TSDF dated: 01.11.2022.

11) 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.

12) Compliance of the ToR found satisfactory.

13) PP presented salient features of the project including Water, Air and Hazardous waste management are submitted.

14) **After deliberation, SEAC unanimously decided to consider the proposal in one of the upcoming meeting of SEAC after satisfactory submission of the following details:**

1. Provisional membership of TSDF for disposal of hazardous waste mentioning capacities i.e total capacity, booked capacity, allotted capacity ans spare capacity.

3.	SIA/GJ/IND3/71294/2022	**M/s. Metropolitan Eximchem Pvt. Ltd.** Plot No. 902/1, Jhagadia Notified GIDC Industrial Estate - 393 110, District- Bharuch	EC

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

Project status: **Expansion**

1) Details of Application:

1.1. Type of application:	EC-Expansion
1.2. Proposal no.	SIA/GJ/IND3/71294/2022
1.3. Category of Project :	5 (f) – B1
1.4. Date of application : (Online accepted by SEAC)	16/05/2022 Online accepted by SEAC – 19/10/2022
1.5. Documents Submitted by Project Proponent(PP)	Form-1, Pre-feasibility Report, EMP
1.6. TOR No. & Date :	SIA/GJ/15101/2022,Date:26/01/2022
1.7. Technical expert / Environmental Consultant :	M/s. Siddhi Green Excellence Pvt. Ltd.
1.8. SEAC Meeting No. and Date:	512nd meeting 01/11/2022
1.9. ADS vide letter dated :	--
1.10. Reply Submitted by PP dated:	--
1.11. Revised Consideration SEAC Meeting No. and Date:	--

2) This is an existing project proposed for expansion of manufacturing of synthetic organic chemicals as mentioned below:

A. Cumulative product List:

SN	Name of Product	CAS No. / HSN code	Quantity (MT/Annum)				End Use	Remarks
			Existing as per EC1 (Note1)	Existing as per CTO (Note 2)	Proposed (Applied for EC2) (Note 3)	Total		
			(1)	(2)	(3)	(2+3)		
1.	5 Chloro 8 Hydroxy quinoline	130-16-5	200	200	***300***	500	Pharma Intermediate	Existing with expansion
2.	2,5 Dichloro p-Phenylene diamine	20103-09-7	120	120	0	120	Pigment Intermediate	No Change Product
3.	2,3-Dibromo propanyl chloride	18791-02-1	50	50	0	50	Building Block	No Change Product
4.	2-Amino 4 [(2,3,-Di Bromo 1-oxypropyl) amine], Benzene Sulfonic Acid	27685-88-7	30	30	0	30	Dye Intermediate	No Change Product
5.	4,4'-Diamino Diphenyl Amine Sulphate	53760-27-3	20	20	0	20	Dye Intermediate	No Change Product
6.	3-(4-Chloro-2-Fluro-5-mercaptophenyl)-1-Methyl-6- triflurомethyl,H-pyrinidine-2-,4-dione	353292-92-9	300	300	***-150***	150	Pharma Intermediate	EC required for 150 MTA instead of 300 MTA
7.	3(2-Chloro propionyl aniline) propionic acid methyl ester	1154368-75-8	200	*25*	***-15***	10	Pharma Intermediate	EC required for 10 MTA instead of 200 MTA
8.	Di amino Benzoic Acid	619-05-6	10	10	0	10	Dye Intermediate	No Change Product
9.	3,3 Di nitro di Phenyl Sulfone	1228-53-1	20	20	0	20	Dye Intermediate	No Change Product
10.	2,2-Bis(4-hydroxy-3-nitrophenol,hexafluro) propane	73340-33-7	20	20	0	20	Epoxy Adhesive	No Change Product
11.	3-(2,4-Dichlorophenyl)-6-Fluroquinazoline-2,4 (1H,3H-Dione	168900-02-5	10	10	***-10***	0	Pharma Intermediate	EC for this product to be withdrawn
12.	2-Amino di methyl terephthalate	5372-81-6	150	150	***-90***	60	Dye Intermediate	Existing with reduction in production
13.	Zinc tetra isopropyl bis (dithiophosphate)	6990-43-8	150	150	***-100***	50	Rubber Curing	Existing with reduction in production
14.	Zinc O,O-Di butyl Di Thiophosphate	6990-43-8	100	100	***-50***	50	Rubber Curing	Existing with reduction in production
15.	BTCA(1,2,3,4-Butanetetracarboxylic acid)	1703-58-8	100	100	0	100	UV absorption	No Change Product
16.	2 anilino 6 dibutyl amino, 3 methyl fluoran	89331-94-2	500	500	0	500	Thermal Paper Sensitization	No Change Product
17.	Oligomer Phenyl phthalimide para bis phenol	29331990	100	*0*	0	0	Polymerization	To be Discontinued
18.	4-Amino-3-Methoxy Azobenzene-3-Sulphuric	138-28-3	140	140	0	140	Dye Intermediate	No Change Product

	Acid							
19.	5-Nitro 2-Amino Phenol	121-88-0	150	150	0	150	Dye Intermediate	No Change Product
20.	5 Amino 6 Methyl Benzimidazolone	67014-36-2	150	150	***50***	200	Pigment Intermediate	Existing with expansion
21.	2,4,6-Tri[(2,4-Dihydroxy3-Methyl) Phenyl] 1,3,5-triazine	434942-20-8	100	100	0	100	UV absorption	No Change Product
22.	2-(4,6-Di Phenyl-1,3,5-Triazine-2-yl)-5(2-Hydroxyethoxy) Phenol	184782-88-5	50	50	0	50	UV absorption	No Change Product
23.	Aniline methane sulfonic acid	26021-90-9	25	25	***-25***	0	Dye Intermediate	To be Discontinued
24.	3,7-Diamino-2-,8-Dimethyl di benzo thiophene 5,5 dioxide hydrochloride	71226-58-9	10	10	0	10	Dye Intermediate	No Change Product
25.	Di Phenyl Sulfone	127-63-9	150	150	***450***	600	Flame retardant	Existing with expansion
26.	Direct yellow F6GZ	123038-32-4	100	100	0	100	Pigment Intermediate	No Change Product
27.	4-(2 Chloro-Ethyl sulfonyl) Butric Acid	121315-24-0	50	50	0	50	Dye Intermediate	No Change Product
28.	2-Chloro 4-(2 Chloro Ethyl sulfonyl) Butric Acid	24352-85-0	100	100	0	100	Dye Intermediate	No Change Product
29.	3-(Dibromo Propionyl)Amido-Benzoyl K Acid	80669-04-1	10	10	0	10	Dye Intermediate	No Change Product
30.	Dipropylene glycol methyl-n-propyl ether	150407-54-8	30	30	0	30	Dye Intermediate	No Change Product
31.	3-Amino-4-[(4-Amino 2 sulfophenyl)- diazenyl] 5 hydroxy naphthalene, 2,7 Di sulfonic acid	215500-05-3	20	20	***-20***	0	Dye Intermediate	To be Discontinued
32.	2,3 Di chloro 6- quinoline carbonyl chloride	1919-43-3	30	30	0	30	Dye Intermediate	No Change Product
33.	4,4 Thio di phenol	2664-63-3	150	10	0	10	Specialty molecule	No Change Product
34.	1,3,benzene diol 4 (4,6,bis 2 dimethyl phenyl) 1,3,5 triazine 2-yl	1668-53-7	100	100	***-80***	20	UV absorption	Existing with reduction in production
35.	2-(2-hydroxy,4- methoxy phenyl) 4,6 diphenyl 1,3,5 triazine	106556-36-9	100	100	***-80***	20	UV absorption	Existing with reduction in production
36.	Cuprate {2-[1-amino-4-hydroxyl 3-(2 hydroxyl-5-sulfophenyl)azo-4,5-dimethoxy phenyl]}azo-2-Naphthalene sulfonic acid	151604-82-9	20	20	0	20	Dye Intermediate	No Change Product
37.	Diethyl sulfate	64-67-5	200	200	0	200	Ethylating Agent	No Change Product
38.	m-cresol pure	108-39-4	10	10	***-10***	0	Pharma Intermediate	To be Discontinued
39.	1-(2,4-dichlorophenyl)-N-(2,4-diflurophenyl)-1,5-dihydro-N-(methylethyl)-5-oxo-4-H-1,2,4-triazole-4-	212201-70-2	150	150	0	150	Active Agent	No Change Product

	carboxamide (Ipfencarbazone)							
	Proposed Group: Dyes & Pigments							
40.	2-(4-Aminophenyl)-6-methyl-1,3-benzothiazole-7-sulfonic acid (DTPTSA)	130-17-6	0	0	1500	1500	Dye Intermediate	Proposed New Product
41.	4- Chloro-2-AminoPhenol 5 sulfonic acid	88-23-3					Dye Intermediate	Proposed New Product
42.	4-Chloro 5-Nitro 2- Amino Phenol	6358-07-2					Dye Intermediate	Proposed New Product
43.	Formazone Blue (Copper Formazone blue F 4-Sulpho anthranilic acid)	77840-01-8					Dye Intermediate	Proposed New Product
44.	4, 4'-Diamino 2-Methyl Azo Benzene (DAMAB)	43151-99-1					Dye Intermediate	Proposed New Product
45.	2 N- Carbethoxy Amino 5-Naphthol 7- Sulphonic acid	124605-84-1					Dye Intermediate	Proposed New Product
46.	5-Benzylsulfonyl-2-methoxy-aniline	2815-50-1					Dye Intermediate	Proposed New Product
47.	1H-Indole-5-sulfonic acid, 2-phenyl- monosodium salt.	119205-39-9					Dye Intermediate	Proposed New Product
48.	Aniline Methyl Omega Carboxy Acid	89331-94-2					Dye Intermediate	Proposed New Product
49.	4-(2-hydroxy-N-benzyl)amino-benzaldehyde (353)	67676-47-5					Dye Intermediate	Proposed New Product
50.	3,4 Diamino Toluene	496-72-0					Dye Intermediate	Proposed New Product
51.	2,5-Diamino 4-Methyl 3-Sulfo Diphenyl sulfone (Lanosole Red B base)	84385-48-8					Dye Intermediate	Proposed New Product
52.	Anthroniloyl Anthranilic Acid	612 -34-0					Pigment Intermediate	Proposed New Product
53.	Chloranil	118-75-2					Dye Intermediate	Proposed New Product
	Proposed Group: Flame retardant							
54.	2,3 - Di Methyl 2,3 - Diphenyl Butane (Dicumene)	1889-67-4	0	0	12620	12620	Flame retardant	Proposed New Product
55.	Tetra Bromo Bisphenol A (TBBA)	79-94-7					Flame retardant	Proposed New Product
56.	AP1300 (Bis(2,3 di bromo-2-methyl propyl ether))	97416-84-7					Flame retardant	Proposed New Product
57.	AP 1800 (Bis (2,3-dibromo propyl ether))	21850-44-2					Flame retardant	Proposed New Product
58.	Decabromo Diphenyl Ethane	84852-53-9					Flame retardant	Proposed New Product
59.	Tolyl Triazol	29385-43-1					Flame retardant	Proposed New Product
60.	Sodium Trichloro Benzene Sulfonate (STB)	53423-65-7					Flame retardant	Proposed New Product
61.	3(Phenyl sulfonyl) Benzene Sulphonic Acid	63113-43-8					Flame retardant	Proposed New Product
	Proposed Group: Organic synthesis							
62.	Para Bromo Toluene	106-38-7	0	0	470	470	Organic	Proposed

							Synthesis	New Product
63.	Ortho nitro bromo benzene (ONBB)	577-19-5					Organic Synthesis	Proposed New Product
64.	IODO naphthalene (1-Iodonaphthalene)	90-14-2					Organic Synthesis	Proposed New Product
65.	Bromo naphthalene (1-Bromo naphthalene)	90-11-9					Organic Synthesis	Proposed New Product
	Proposed Group: Pharma intermediate							
66.	5 amino 2 Nitro benzoic acid	616-79-5	0	0	530	530	Pharma Intermediate	Proposed New Product
67.	4 chloro anthranilic acid	89-77-0					Pharma Intermediate	Proposed New Product
68.	Di Phenic acid	482-05-3					Pharma Intermediate	Proposed New Product
69.	2-Phenoxy aniline	2688-84-8					Pharma Intermediate	Proposed New Product
70.	N-(2-hydroxy benzoyl) anthranilic acid (334)	13316-98-8					Pharma Intermediate	Proposed New Product
71.	Oryza Sativa Bran Wax	8016-60-2					Pharma Intermediate	Proposed New Product
72.	8-Hydroxy quinoline	148-24-3					Pharma Intermediate	Proposed New Product
	Proposed Group: Photo initiator							
73.	Photoinitiator 184 (Methanone cyclohexyl phenyl)	947-19-3	0	0	150	150	Photo initiator	Proposed New Product
74.	Photoinitiator 1173 (1-Propanone, 2-hydroxy-2-methyl-1-phenyl-)	7473-98-5					Photo initiator	Proposed New Product
75.	Photoinitiator PBP (Methanone, [1,1'-biphenyl]-4-ylphenyl-)	2128-93-0					Photo initiator	Proposed New Product
	Proposed Group: Specialty molecules							
76.	Metro Dol (2,3,3 Trimethyl 4,5 benzo -3-H Indole)	41532-84-7	0	0	1040	1040	Specialty molecule	Proposed New Product
77.	Benzotriazole	95-14-7					Specialty molecule	Proposed New Product
78.	Di hydroxyl di phenyl sulphone (DHDPS)	80-09-1					Specialty molecule	Proposed New Product
79.	N-Hexyl Bromide	111-25-1					Specialty molecule	Proposed New Product
80.	3-Mercaptopropionic acid	107-96-0					Specialty molecule	Proposed New Product
81.	2-Acetyl Aminophenol	614-80-2					Specialty molecule	Proposed New Product
82.	R&D products	--	0	0	6	6	--	Proposed New Product
	Total		**3925**	**3510**	**16486**	**19996**		

B. Non – EC products as per CTO:

1	Adhesives for Ink Manufacturing	**Production Capacity (MT/A)**
A	Nova Wash Econo	**15900**
B	Nova Wash Universal	
C	Amberwash	
D	Nova Wash Premium	

E	Nova Wash Universal Plus		
F	Revivo Wash		
G	Artemas Wash 60		
H	Artemas Wash 80		
I	HMK Wash 1		
J	Nova Wash DP		
K	UV Wash		

Note:

1. EC1: First EC granted for existing production, Total production quantity granted as per EC1 dated 16-03-2020 vide letter no. F.No. J-11011/242/2018-IA-II(I) is 4150 MTA including co-product (i.e. 225 MTA taken in HW mateix). Unit has fully converted the EC to CTE having CTE file no. GPCB/(PCB ID- 65756) dated 04-07-2020.
2. Unit has converted 90% of the EC1 to CTO having consent no. AWH- 116527 valid upto 06/09/2026 (CTO granted on 03-01-2022).
3. Now, for proposed expansion, unit has proposed new products and expansion of production capacity of products of existing EC together with withdrawal and reduction of production capacity of few products of existing EC reduction/deletion/expansion of existing granted products as per CTO (product summary is given in above Table-A)

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

4) The proposal was considered in the SEAC video conference meeting dated 01.11.2022.

5) Project proponent (PP) and their Technical Expert M/s Siddhi Green Excellence 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) 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 September-2021 to November-2021. Ambient Air Quality monitoring was carried out PM_{10}, $PM_{2.5}$, SOx, NOx, VOC, Benzene, NH_3, CO, HCl and HBr 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 “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).

8) 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.

9) Earlier PP obtained EC from MoEF&CC dated: 16.03.2020 which is partly converted into CCA. Unit is having Valid CCA of the Board valid upto dated: 06.09.2026. PP submitted that there is no legal court

case and public complaint against unit.

10) PP submitted Certified Compliance Report of RO-GPCB for existing EC. Out of 64 conditions, 39 are complied, 1 is non-complied, 2 are complied AR awaited, 21 are noted and agreed by proponent to comply and 1 is not applicable to unit. Also status of compliance of non & partially complied points are submitted.

11) 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.

12) Compliance of the ToR found satisfactory.

13) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details
A	Total **cost of Proposed** Project (Rs. in Crores):	

Existing	Proposed	Total
76 Crores	76.66 Crores	152.66 Crores

Break-up of proposed project Cost:

Group	Particulars	Nos.	Cost (Rs. In lakhs)
Process Plant	Reactors	22-25	700
	Condenser	20	80
	Centrifuge (CF)	7-8	96
	Dryers	8-10	1200
	Tanks	3-4	60
	Process Pumps	70-80	80
	Ejectors	2-3	20
	Valve and Instruments		150
	Columns	7-8	50
Utilities	Boiler	1	200
	Brine	1	150
	D.G.Set	1	200
	RO system	1	20
	Chiling plant	1	50
	Nitrogen plant	1	10
	Compressors	3	20
	Cooling tower	5-6	100
Storage Tanks	Raw material storage tank/ bullets	3-4	200
Environment	Effluent treatment plant (ETP)	--	200
	MEE plant & RO	1	400
	Sewage treatment plant (STP)	1	10
	Green Belt Development	--	10
	Air Pollution Control Devices (APCD)	--	70
	Hazardous storage facilities	--	20
Civil	Plant building civil and structural work		1000
	Preoperative expenses		100
	Piping Installation		1000
	Insulation & Painting		300
	Safety Items		100

	Instrumentation & PLC		100
	Electrical installation		200
	Misc-expenses:- Lab, office, Warehouse, furniture & fixtures, office & Lab requirement		100
		Total	**6996**
		Contingencies (10%)	**670**
		Grand Total	**7666**

-

B **Land / Plot ownership details:**

The plot where site is located has been acquired by GIDC as industrial plot and was allotted to M/s. Agrasen Dyes & Intermediate P Ltd. as first owner which was later transferred to M/s. Metropolitan Eximchem Pvt. Ltd. in 2016 as barren and unoccupied land without any industrial activity.

B-1 **In case of outside GIDC only – Not applicable**

Siting Criteria

Sr. no.	Environmental Sensitivity	Name/Specific details	Aerial Distance in Km
1	Habitat (Residential Area)	-	-
2	Eco sensitive zones	-	-
3	Wild life sanctuaries/National Parks	-	-
4	Water Bodies	-	-
	River	-	-
	Natural Nallah/Drain	-	-
	Lake/Pond/Wetlands	-	-
	Water supply Tanks/Reservoirs	-	-
	Canal	-	-
5	Protected Monuments/Heritage sites/Public Buildings etc.	-	-
6	National/State Highway OR Express way	-	-
7	Coastal Regulation Zone (CRZ) (In case of Coastal area projects)	-	-
8.	Ground water table in meter	-	-
9.	Railway Line	-	-
10.	Air Port	-	-

B-2 **Area adequacy**

- Production capacity: 19996 MTA (EC Products) + 15900 (Non-EC products) = 35896 MTA
- Manufacturing Plants: 3 nos. having area of 2010 sq. m. each

Area Adequacy table:

Storage	Period of storage	Maximum storage required (MT)	Type of storage	Required Space sq. m.	Allocated space, sq. m.	Area no. site plan
Raw Material Store	3 days	275	~1375 Nos. of Drums (200 L each)	275	2005.20	21
		411	~8220 Nos. of Bags (50 kg each-Stacked in 3 layers)	411		
		7.25	~145 Nos. of Carboys (50 L each)	7		

	Finished Good store	10 days	583	~2000 Nos. of Bags (25 kg each-Stacked in racks) ~1000 Nos. of bags (50 kg each-Stacked in racks), ~100 Nos. of bags (500 kg each-Stacked in racks), ~85 Nos. of Drums (200 L each)	583	2005.20	12
	Raw Material Storage in Tank	--	450	Tank storage	--	1810.76	18
	Solvent Storage (Fresh & Recovered solvent)	3 days	616	Tank storage	--	2884.80	17
	HW Storage	30 days	2614	Drums and bags in stacking arrangement	871	1060.00	8, 9,10
	Utility area	--	--	--	140	770.00	11

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.

B-3 **Green belt area**

	Existing	Proposed (Sq. m.)	Total (Sq. m.)
Area in Sq. meter	23291.67 sq. m (within the premises)	--	23291.67 sq. m (within the premises)
% of total area	~33.2%	--	~33.2%

Comments:

The condition shall be given that -

- The PP shall develop green belt within premises (23291.67 Sq. m. i.e. 33.2 % of 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.

C **Employment generation**

Existing	Proposed	Total
108 Nos. (56 nos. Company employees + 52 nos. Contract basis)	268 Nos. (68 nos. Company employees + 200 nos. Contract basis)	376 Nos. (124 nos. Company employees + 252 nos. Contract basis)

-

D **WATER**

D-1 **Source of Water Supply**

- GIDC supply

Comments:

	Prior permission from concerned authority shall be obtained for withdrawal of water.
D-2	**Water consumption (KLD)**

-

Water Consumption - Category	Existing As per EC1 (KLD)		Existing as per CTO (KLD)		Reduction due to discontinuing/ reducing existing production (KLD)	Existing after discontinuing/ reducing existing production (KLD)	Proposed additional & Total scenario (KLD)		Remarks
	Existing fresh as per EC1	Recycled Water	Existing fresh as per CTO	Recycled Water			Applied for EC (Proposed Additional)	Total after Expansion	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(6+7)	
(A) Domestic	20	10	20	10	0	30	22	52	**Total: 32 KLD Fresh from GIDC + 20 KLD recycled from STP** Existing : 20 Fresh from GIDC + 10 KLD from STP Proposed additional: 12 Fresh from GIDC + 10 KLD from STP
(B) Gardening	100	10	100	10	0	110	10	120	**Total: 100 KLD Fresh from GIDC + 20 KLD recycled from STP** Existing 100 Fresh from GIDC + 20 KLD from STP. No additional fresh water requirement for gardening as existing is sufficient.
(C) Industrial									
Process	133.9	0	131	0	-25	106	276	382	**Total: 382 KLD Fresh from GIDC**
Product washing	138.9	0	144	0	-26	118	269	387	**Total: 387 KLD Fresh from GIDC**
Washing (Machinery washing, Floor washing)	0	45	0	37	0	37	42	79	**Total: 37 KLD from MEE & RO + 42 KLD utility blowdown.** **Existing:** 37 KLD from RO & MEE for machinery washing **Proposed additional:** Utility blow down water (Boiler: 4 KLD + Cooling tower: 38 KLD = 42 KLD) shall be passed through cartridge filter and shall be used for washing purpose.

										Hence, fresh water requirement for washing shall be NIL
	Boiler (Makeup + Steam condensate recycling)	30	180	30	114	0	144	144	288	**Total : 60 KLD fresh from GIDC + 228 KLD Steam condensate** **Existing :** 30 KLD Fresh from GIDC + 114 KLD Recycled quantity **Proposed additional :** 30 KLD Fresh from GIDC + 114 KLD Recycled quantity ***Note:*** *At Start up stage (First Batch) the additional Fresh Water Consumption for boilers is 288 KLD & second batch onwards Fresh water consumption is reduced to 60 KLD from 288 KLD due to recycling condensate.*
	Cooling	0	429	0	429	0	429	383	812	**Total recycled water requirement for: 812 KLD** Existing 429 KLD requirement is met from MEE condensate & RO permeate. Additional 383 KLD requirement shall also be met from MEE condensate & RO permeate. Hence, there is no fresh water requirement from GIDC for cooling tower makeup for existing as well as proposed expansion.
	Others (APCM)	0	0 (included in washing)	0	0	0	0	20	20	**Total Fresh water requirement for additional APCM : 20 KLD**
	Industrial Total	**302.80**	**654**	**305**	**580**	**-51**	**834**	**1134**	**1968**	**Total Fresh water requirement : 849 KLD, Recycled**

									quantity: 1119 KLD including Steam condensate
Grand Total (A+B+C)	**422.8**	**674**	**425**	**600**	**-51**	**974**	**1166**	**2140**	**Total Fresh water requirement : 981 KLD, Recycled quantity: 1159 KLD including Steam condensate**

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Comments:

- The water consumption above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-3 **Waste water generation (KLD)**

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Category	Existing as per EC1 in KLD	Existing as per CTO KLD	Reduction due to discontinuing/ reducing existing production KLD	Qty. after discontinuing/ reducing existing production KLD	Proposed additional & Total Scenario (KLD)		Remarks (Disposal scenario)
					Applied for EC (Proposed Additional)	Total after Expansion	
	(1)	(2)	(3)	(4)	(5)	(4+5)	
(C) Domestic	20	20	0	20	20	40	**Presently treated in own STP and treated water is reused in gardening & domestic flushing. Same shall be continued after expansion (existing 30 KLD STP to be augmented to 45 KLD)**
(D) Industrial							
Process (strong stream)	77	72	-15	57	164	221	Presently treated in MEE and MEE condensate reused in machinery washing and cooling tower make up. Same shall be continued after

							expansion
Product washing (Weak stream)	319.8	318	-34	284	405	689	Presently treated in ETP having Primary, Secondary & Tertiary treatment units. Same shall be continued after expansion
Washing (Machinery washing, Floor washing)	45.2	44	0	44	42	86	Presently treated in MEE and MEE condensate reused in machinery washing and cooling tower make up. Same shall be continued after expansion
Boiler	15	15	0	15	4	19	**Existing :** 15 KLD To ETP (P+S+T treatment) **Additional : 4 KLD** shall be passed through cartridge filter and shall be used for washing purpose and then shall be given Primary, Secondary & Tertiary treatment in ETP.
Cooling	15	15	0	15	38	53.0	**Existing :** 15 KLD To ETP (P+S+T treatment) **Additional : 38 KLD** shall be passed through cartridge filter and shall be used for washing purpose and then shall be given Primary, Secondary & Tertiary treatment in

							ETP.
	Others	0	0	0	0	24	24	To MEE
	Total Industrial waste water	**472**	**464**	**-49**	**415**	**677**	**1092**	• Total Industrial Waste water generation after expansion: 1092 KLD • Existing: 464 KLD treated in ETP-UF-RO and MEE and reused entirely within premises • After proposed expansion : • Recycled blowdown : 42 KLD • Strong stream : 221 (process) + 86 (washing) +24 (APCM) = 331 KLD to be treated in MEE, MEE condensate to be reused for cooling tower makeup and washing. • Weak stream 689 KLD (process) + 15 KLD (boiler blowdown) + 15 KLD (cooling tower blowdown) = 719 KLD to be treated in own ETP consisting of Primary, secondary & tertiary treatment. 150 KLD treated effluent to be • discharged to JPP of M/s. NCT, Ankleshwar for final disposal

								into deep sea and remaining 563 KLD to be further treated in RO and MEE for recycling within the premises. 6 MT Sludge shall be disposed to TSDF site.
	Total [A + B]	**492**	**484**	**-49**	**435**	**697**	**1132**	**Total waste water generation : 1132 KLD**

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Comments:

- The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4	Break-up of waste water disposal & facility (For Domestic)

Presently sewage is treated in own STP and treated water is reused in gardening & domestic flushing. Same shall be continued after expansion.

Comments:

- Domestic wastewater generation shall not exceed 40 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 flushing and gardening & plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
- Unit shall provide STP with adequate capacity.

D-5	**Break-up of waste water disposal & facility (For Industrial)**

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Sr. no.	**Quantity KLD**	**Facility**
1	150	Treated effluent is sent to FETP of M/s. NCT, Ankleshwar for final disposal into deep sea.
2	1119	• 42 KLD utility blowdown recycled for machine washing purpose • 849 KLD RO permeate and MEE condensate recycled for cooling tower and machine-washing purpose
Total	**150**	--

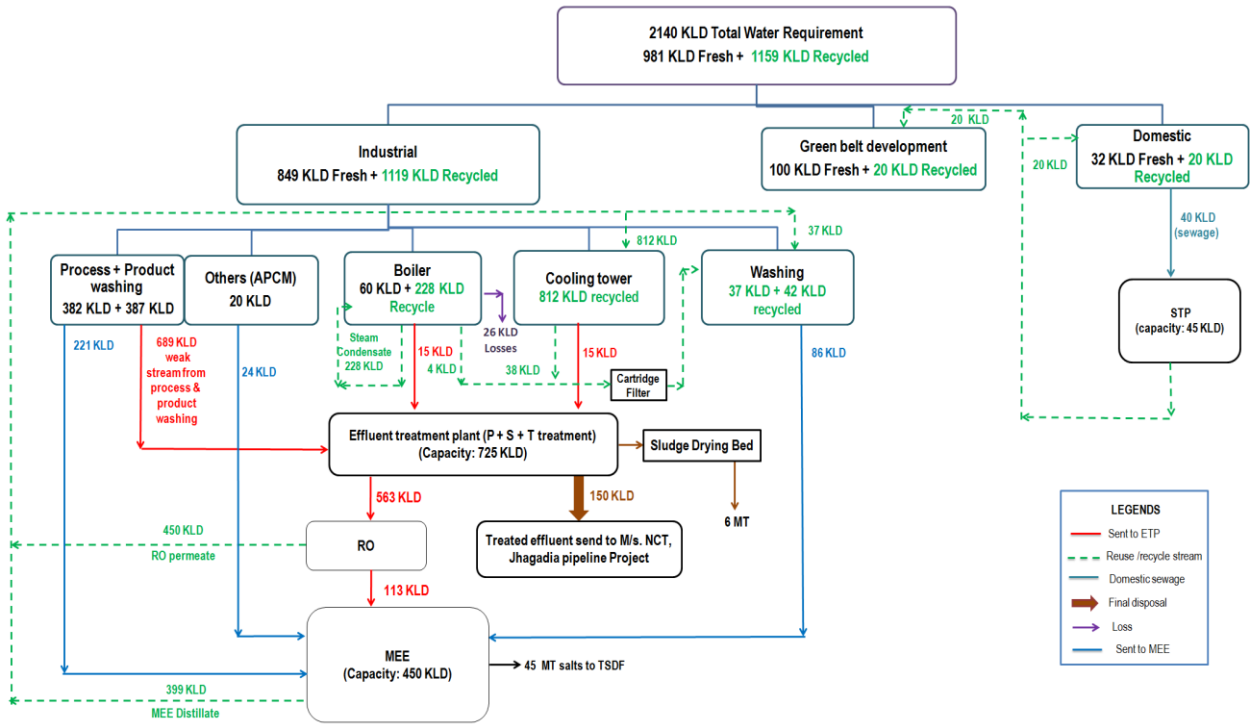
Comments:

- Management of Industrial effluent shall be as under:
  - ✓ Dilute stream (719 KLD): 719 KLD effluent generated from process, product washing and utilities shall be treated in primary, secondary & tertiary ETP. Out of 713 KLD treated effluent, 150 KLD shall be sent to M/s NCTL, Jhagadia pipeline and remaining 563 KLD shall be treated in RO. 450

KLD, RO permeate shall be reused within premises and 113 KLD RO reject shall be treated in MEE along with concentrated stream.

- ✓ Concentrated Stream (444 KLD): 331 KLD effluent generated frm process, product washing & washing and 113 KLD RO reject shall be treated in in-house MEE. 399 KLD, MEE condensate shall be reused within premises.
- ✓ 42 KLD effluent generated from utilities shall be treated in catridge filter and reused in washing.

D-6 **Simplified water balance diagram**



D-7 Summary

Summary of water requirement	**Quantity** KLD	Remarks
Total water requirement for the project **(A)**	2140	--
Quantity to be **recycled (B)**	1159	--
Total **fresh water** requirement **(C)**	981	--
Ensure **Total water requirement = Recycled water + Fresh water i.e. A = B + C**		

<u>Streamwise clarification for Water consumption and Wastewater generation:</u>

<u>Domestic:</u>

Total water consumption: 52 KLD

Fresh water consumption: 32 KLD

Recycled water consumption: 20 KLD from STP

Effluent generation: 40 KLD (Totally recycled within premises in gardening and domestic flushing purpose. Hence, no actual generation of sewage effluent.)

<u>Gardening:</u>

Total water consumption: 120 KLD

	Fresh water consumption: 100 KLD Recycled water consumption: 20 KLD from STP **Effluent generation: NIL (Quantity of water consumption v/s. wastewater generation is reduced here because there is no effluent generation from gardening purpose.)** **Industrial:** **Manufacturing process:** **Total Fresh water consumption: 382 KLD** **Effluent generation: 221 KLD (Strong stream, Effluent is calculated as per mass balance. Quantity of water consumption v/s. wastewater generation is reduced)** **Product washing:** **Total Fresh water consumption: 387 KLD** **Effluent generation: 689 KLD (Weak stream, Effluent is calculated as per mass balance. Quantity of water consumption v/s. wastewater generation is increased, as washing effluent may contain impurities as well as excess Raw materials.)** **Machinery & Floor Washing:** **Total recycled water consumption: 79 KLD (RO Permeate, MEE condensate, Utility blowdown. Fresh water consumption is NIL)** **Effluent generation: 86 KLD (Quantity of water consumption v/s. wastewater generation is increased, as washing effluent may contain impurities of vessels, machinery and floor)** **Boiler:** Total water consumption: 288 KLD **Fresh water consumption: 60 KLD** Recycled water consumption: 228 KLD from Boiler steam condensate **Effluent generation: 19 KLD (Blowdown existing 15 KLD is sent to ETP and proposed additional 4 KLD shall be used as Machine washing purpose. There is huge quantity of recycle, hence effluent quantity is reduced.)** **Cooling Tower:** **Total Recycled water consumption: 812 KLD (RO Permeate and MEE condensate shall be recycled. Hence total Fresh water requirement for cooling tower is NIL.)** **Effluent generation: 53 KLD (Blowdown existing 15 KLD is sent to ETP and proposed additional 38 KLD shall be used as Machine washing purpose. There is huge quantity of recycle, hence effluent quantity is reduced.)** **Others (APCM):** **Total Fresh water consumption: 20 KLD** **Effluent generation: 24 KLD (As gases are scrubbed in water, quantity of effluent is increased)** **Hence, from above clarification it is said that,** **Total water requirement for the project is 2140 KLD. But majority of quantity is recycled within premises @ 1159 KLD (54% of total water requirement). So, if we consider fresh water requirement @981 KLD v/s. actual effluent generation is @1050 KLD.**

E	**AIR**
E-1	Power (Electricity) requirement : 4000 kW
E-2	**Flue gas emission details**
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Stack 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. (Existing)	**Boiler (Capacity: 6 TPH) – Existing**	**30**	**Briquettes**	1155 kg/h	PM SO_2 **NO_X**	**Bag filter + Water scrubber**
	Boiler (Capacity: 6 TPH) - New			1155 kg/h		
2. (New)	**Thermic Fluid Heater (Capacity: 6 Lakh Kcal/h)-New**	**30**	**LDO**	83.34 L/h	PM SO_2 **NO_X**	**Bag filter + Water scrubber**
3. (Existing)	**D.G. Set (Capacity: 750 KVA) (stand-by) (Existing)**	**10**	**HSD**	**150 L/h**	PM SO_2 NO_X	Adequate stack height and stack monitoring facility provided
4. (New)	**D.G. Set 2 Nos. (Capacity: 750 KVA each) standby - New**	**12**	**HSD**	**300 L/h**	PM SO_2 NO_X	Adequate stack height and stack monitoring facility shall be provided

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E-3 | Process gas

- Existing & Proposed Additional

Stack No.	Specific source of emission (Name of product & process)	Type of emission	Stack/ Vent Height (m)	Air Pollution Control Measures (APCM)
Existing as per EC1				
1.	Process vessels	SO2	30	Caustic Scrubber
2.	Process vessels	NO2	30	Caustic Scrubber
3.	Process vessels	HCl	30	Caustic Scrubber
4.	Storage tank	SO3	10	Acid Scrubber
5.	Storage tanks	NO2	10	Caustic Scrubber
6.	storage vessels	HCl	10	Caustic Scrubber
Existing as per CTO				
1.	Process Vessels Plant A	HCl SO2	30	Caustic + Water Scrubber
2.	Process Vessels Plant A	NO2	30	Caustic + Water Scrubber
3.	Storage tank	SO3	10	Acid Scrubber
4.	Storage tanks	NO2	10	Caustic Scrubber
5.	Storage vessels	HCl	10	Caustic scrubber
Proposed Additional (Applied for EC2)				
6.	Process vessels Plant B	HCl SO2	30	Caustic + Water Scrubber
7.	Process vessels Plant C	HCl	30	Caustic + Water Scrubber

		SO2		
8.	Process vessels Plant B	NOX	30	Caustic + Water Scrubber
9.	Process vessels Plant C	NOX	30	Caustic + Water Scrubber
10.	Process vessels Plant B	HBr	30	Caustic Scrubber
11.	Process vessels Plant C	HBr	30	Caustic Scrubber

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E-4 Fugitive emission details with its mitigation measures.

Sr. No.	Source	Probable Pollutant Emission	Control Measures/ APCM
1.	Pump glands and seals	Air pollutant (VOC)	All pumps handling HAP chemicals with low V.Ps are provided with mechanical seals which are presently best for preventing emissions.
2.	During reactions & Solvent recovery systems	Air pollutant (VOC)	Liquid raw materials shall be charged by pumping & closed loops. Suitable stoichiometric calculations shall be done and followed to regulate the quantity of reactants to be charged to reaction vessels in order to avoid use of excess chemicals, which in turn will minimize organic load in the effluent. All reactors shall be closed and provided with main condenser with cooling water circulation and vent condensers with chilled water circulation for maximum vapor recovery Distillation shall be carried out at atmospheric as well as vacuum conditions to obtain min. 95% recovery. Temperature and pressure conditions shall be stringently controlled as per the process requirement and optimized with low temperature and vacuum conditions wherever feasible. PLC/other latest control system for critical process operations shall be employed wherever necessary to the best possible extent with minimal manual operations.
3.	Pressure Relief Valve Emissions from pipelines	Air pollutant (VOC)	For highly pressurized lines, pressure equalization shall be followed with return lines so that the pipelines as well as connected equipment do not get pressurized unduly.
4.	Release from Sampling Lines	Air pollutant (VOC)	Shall be carried out using a closed loop sampling system.
5.	Emissions from Bulk Storage Tanks during storage, loading and unloading	Air pollutant (VOC)	PSVs, Rupture discs provided wherever applicable Tank Pressure equalization applied wherever required Closed transfer system are provided with SOPs for loading and unloading
6.	Valves, Flanges, plugs and instrument connections	Air pollutant (VOC)	Welded pipes to be used wherever feasible Suitable gasket material to be used Suitable gland packing to be used in valves Periodic inspection and maintenance of pipes and pipe fittings LDAR shall be planned and implemented for periodic inspection and maintenance of pipes and pipe fittings.
7.	Chemical vapors during filtration and drying process	Air pollutant (VOC & PM)	Covered filtration and drying process, closed movement of solid material are adopted to best possible extent, PPEs provided to workers.

8.	Drum filling machinery	Air pollutant (VOC)	Covered transfer systems are adopted, with minimum manual operations, PPEs provided to workers, areas is well-ventilated, facilitated with local exhausts and roof top ventilators
9.	Warehouse storing drums and bags	Air pollutant (VOC & PM)	Spillages shall be strictly prevented by providing drip pans, proper handling equipment, minimum manual operation, local exhausts and roof top ventilators, Spill control procedures and equipment are available.

Comments for E2, E3 & E4:

- The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Solvent management, VOC emissions etc.**
F-1	**Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.**

Product Sr. No.	Product Name	Solvent	Qty. Used MT/ MT	Recovered MT/MT	solvent Losses in air (A)	solvent Loss in (Effluent - stripped out) (B)	Distillation Residue (C)	Total Losses (A + B+ C)	% Recovery
2	2,5 Dichloro p-Phenylene diamine	Toluene	2.80	2.65	0.023	0.015	0.113	0.150	95
3	2,3-Dibromo propanyl chloride	Ethylene Dichloride (EDC)	0.33	0.31	0.002	0.002	0.012	0.017	95
4	2-Amino 4 [(2,3-Di bromo 1-oxypropyl) amine], Benzene Sulfonic Acid	Ethylene Dichloride (EDC)	0.30	0.29	0.002	0.002	0.011	0.015	95
6	3-(4-Chloro-2-Fluro-5-mercaptophenyl)-1-Methyl-6-trifluromethyl,H-pyrinidine-2-,4-dione	Ethylene Dichloride (EDC)	7.89	7.48	0.062	0.041	0.308	0.411	95
		Cyclohexane	5.24	4.96	0.042	0.028	0.208	0.277	95
		Methanol	2.44	2.32	0.012	0.024	0.085	0.122	95
		Ethyl-4-Chloro 2-Fluorophenyl	1.10	1.09	0.002	0.001	0.009	0.012	99

		Carbomate (ECFC)							
		Ethyl 3-amino-4,4,4-trifluoro-2-butenoate (EATC)	0.92	0.91	0.001	0.001	0.006	0.008	99
		n-Hexane	3.12	2.96	0.025	0.017	0.124	0.165	95
		Iso Propyl Alcohol	2.61	2.47	0.014	0.028	0.099	0.142	95
		Methylene dichloride (MDC)	14.22	13.49	0.110	0.073	0.548	0.731	95
		Acetic acid	4.11	3.90	0.021	0.041	0.144	0.206	95
7	3(2-Chloro propionyl aniline)propionic acid methyl ester	Methanol	0.67	0.64	0.003	0.007	0.023	0.034	95
		Methylene dichloride (MDC)	6.45	6.11	0.050	0.034	0.252	0.336	95
9	3,3 Di nitro di Phenyl Sulfone	Dimethylsulfoxide (DMSO)	2.10	1.99	0.012	0.023	0.081	0.115	95
		Methanol	0.30	0.29	0.002	0.003	0.011	0.015	95
10	2,2-Bis(4-hydroxy-3-nitrophenol,hexafluro) propane	Methanol	5.82	5.52	0.031	0.061	0.214	0.305	95
11	3-(2,4-Dichlorophenyl)-6-Fluroquinazoline-2,4 (1H,3H-Dione	Methanol	5.95	5.65	0.030	0.060	0.208	0.298	95
		Thionyl Chloride	0.74	0.70	0.006	0.004	0.028	0.037	95
12	2-Amino di methyl terephthalate	Ortho dichloro benzene (ODCB)	7.65	7.25	0.040	0.060	0.302	0.403	95
13	Zinc tetra isopropyl bis (dithiophosphate)	Toluene	1.23	1.21	0.004	0.002	0.018	0.024	98
14	Zink O,O-Dibutyl DiThiophosphate	Toluene	0.44	0.42	0.003	0.002	0.017	0.022	95
15	BTCA(1,2,3,4-Butanetetracarboxylic acid)	1,4 di oxane	3.00	2.84	0.024	0.016	0.120	0.160	95
16	2 anilino 6 dibutyl amino, 3 methyl fluoran	Toluene	3.82	3.62	0.030	0.020	0.149	0.199	95
		n-hexane	2.39	2.27	0.018	0.012	0.090	0.120	95
		Iso Propyl Alcohol	8.74	8.29	0.045	0.090	0.315	0.450	95
20	5 Amino 6	Toluene	7.50	7.13	0.056	0.038	0.281	0.375	95

	Methyl Benzimidazolone								
21	2,4,6-Tri[(2,4-Dihydroxy3-Methyl) Phenyl] 1,3,5- Triazine	Sulfolane	3.10	2.95	0.016	0.031	0.109	0.155	95
22	2-(4,6-Di Phenyl-1,3,5-Triazine-2-yl)-5(2-Hydroxyethoxy) Phenol	Ortho dichloro benzene (ODCB)	5.80	5.49	0.031	0.046	0.233	0.310	95
		Sulfolane	5.00	4.75	0.025	0.050	0.175	0.250	95
		Methanol	28.70	28.01	0.069	0.138	0.483	0.690	98
		Cyclohexane	5.70	5.42	0.043	0.029	0.214	0.285	95
26	Direct yellow F6GZ	Iso Propyl Alcohol	0.13	0.12	0.001	0.001	0.005	0.007	95
29	3-(Dibromo Propionyl)Amido-Benzoyl K Acid	Ethylene Dichloride (EDC)	0.17	0.16	0.001	0.001	0.006	0.009	95
30	Dipropylene glycol methyl-n-propyl ether	n-hexane	0.24	0.23	0.002	0.001	0.009	0.012	95
32	2,3 Dichloro 6-quinoaline carbonyl chloride	Thionyl Chloride	3.97	3.77	0.030	0.020	0.149	0.199	95
34	1,3,benzene diol 4 (4,6,bis 2 dimethyl phenyl) 1,3,5 triazine 2-yl	Ortho dichloro benzene (ODCB)	5.44	5.16	0.028	0.042	0.212	0.282	95
		Sulfolane	3.40	3.22	0.018	0.036	0.126	0.180	95
		Dimethyl Acetamide	4.18	3.96	0.022	0.044	0.155	0.222	95
35	2-(2-hydroxy,4-methoxy phenyl) 4,6 diphenyl 1,3,5 triazine	Dimethyl Formamide	5.56	5.27	0.029	0.058	0.202	0.288	95
39	1-(2,4-dichlorophenyl)-N-(2,4-diflurophenyl)-1,5-dihydro-N-(methylethyl)-5-oxo-4-H-1,2,4-triazole-4-carboxamide [IPFENCARBAZONE]	Tert butanol	3.92	3.72	0.020	0.039	0.137	0.196	95
		Ethylene Dichloride (EDC)	4.22	4.00	0.033	0.022	0.166	0.221	95
40	2-(4-Aminophenyl)-6-methyl-1,3-benzothiazole-7-sulfonic acid	Ethylene Dichloride (EDC)	1.78	1.69	0.013	0.009	0.067	0.089	95

	(DTPTSA)								
50	3,4 Diamino Toluene	MCB	13.93	13.23	0.070	0.104	0.522	0.696	95
54	2,3 - Di Methyl 2,3 - Diphenyl Butane (Dicumene)	Methanol	7.20	6.84	0.036	0.072	0.252	0.360	95
55	Tetra Bromo Bisphenol A (TBBA)	Ethylene Dichloride (EDC)	3.41	3.24	0.026	0.017	0.128	0.170	95
56	AP1300 (Bis(2,3 di bromo-2-methyl propyl ether))	Methanol	4.26	4.05	0.021	0.043	0.150	0.214	95
		Methylene dichloride (MDC)	1.28	1.22	0.010	0.007	0.049	0.065	95
57	AP 1800 (Bis (2,3-dibromo propyl ether))	Methanol	4.26	4.05	0.021	0.043	0.150	0.214	95
		Methylene dichloride (MDC)	1.28	1.22	0.010	0.007	0.049	0.065	95
58	Decabromo Diphenyl Ethane	Ethanol	0.13	0.12	0.001	0.001	0.005	0.007	95
59	Tolyl Triazol	Ethylene Dichloride (EDC)	15.56	14.78	0.117	0.078	0.584	0.779	95
62	Para Bromo Toluene	Ethylene Dichloride (EDC)	1.30	1.24	0.010	0.007	0.049	0.065	95
63	Ortho nitro bromo benzene (ONBB)	Toluene	3.25	3.09	0.024	0.016	0.122	0.163	95
64	IODO naphthalene (1-Iodonaphthalene)	Toluene	6.98	6.63	0.052	0.035	0.262	0.349	95
65	Bromo naphthalene (1-Bromo naphthalene)	Ethylene Dichloride (EDC)	1.70	1.62	0.013	0.009	0.064	0.086	95
69	2-Phenoxy aniline	Toluene	3.67	3.48	0.028	0.018	0.138	0.184	95
70	N-(2-hydroxy benzoyl) anthranilic acid (334)	Methanol	5.00	4.80	0.020	0.040	0.140	0.200	96
71	Oryza Sativa Bran Wax	Ethanol	30.94	29.39	0.155	0.310	1.084	1.548	95
		Ethyl Acetate	18.05	17.15	0.090	0.135	0.676	0.902	95
73	Photoinitiator 184 (Methanone cyclohexyl phenyl)	n-hexane	2.50	2.42	0.013	0.008	0.063	0.083	97
		Benzene	2.00	1.92	0.013	0.008	0.062	0.083	96
74	Photoinitiator 1173 (1-	n-hexane	1.96	1.86	0.015	0.010	0.074	0.098	95
		Benzene	1.18	1.12	0.009	0.006	0.044	0.059	95

	Propanone, 2-hydroxy-2-methyl-1-phenyl-)								
75	Photoinitiator PBP (Methanone, [1, 1'-biphenyl]-4-ylphenyl-)	n-hexane	1.06	1.02	0.006	0.004	0.028	0.037	96
		Ethylene Dichloride (EDC)	1.85	1.78	0.011	0.007	0.056	0.074	96
76	Metro Dol (2,3,3 Trimethyl 4,5 benzo -3-H Indole)	Ortho Xylene	8.21	7.90	0.031	0.047	0.233	0.310	96
		Petroleum ether	1.63	1.55	0.012	0.008	0.061	0.082	95
		Methylene dichloride (MDC)	0.18	0.17	0.001	0.001	0.007	0.009	95
		Acetone	4.26	4.09	0.017	0.034	0.119	0.170	96
78	Di hydroxyl di phenyl sulphone (DHDPS)	Ethyl Acetate	0.66	0.63	0.003	0.005	0.024	0.032	95
79	N-Hexyl Bromide	Ethylene Dichloride (EDC)	9.38	8.91	0.070	0.047	0.352	0.469	95
80	3-Mercaptopropionic acid	Ethyl Acetate	6.00	5.70	0.030	0.045	0.225	0.300	95

F-2 **VOC emission sources and its mitigation measures for achieving maximum solvent recovery and minimize VOC generation:**

Measures for achieving maximum solvent recovery and minimize VOC generation:

- Vent condensers on atmospheric solvent tanks.
- Double mechanical seals for pumps and agitators handling VOCs
- Regular internal & external VOC monitoring would be carried out.
- Breathing losses are reduced by provision of underground tanks for storage of low vapor pressure solvents.
- Solvents shall be directly pumped into day tanks from the storage tanks and shall be charged into the reactors without involving any manual handling.
- Implementation of LDAR program.
- All Unit processes, unit operations, related temperature and pressure conditions to be stringently controlled.
- Unit shall provide many provisions like pressurized seal, Teflon coated, magnetic coupling, and mechanical seals
- to avoid leakage from the coupling.
- Pipelines connected with reactors will be installed with minimum number of flanges, joints and valves.
- Solvent tank loading to be carried out using tank equalization process.

F-2	**VOC emission Sources and its Mitigation Measures.**		
Sr. No.	**Emission Source**	**Probable Pollutant Emission**	**Control measures**
1	During reactions & Solvent recovery systems	Air pollutant (VOC)	Liquid raw materials shall be charged by pumping & closed loops. Suitable stoichiometric calculations shall be done and followed to regulate the quantity of reactants to be charged to reaction vessels in order to avoid use of excess

			chemicals, which in turn will minimize organic load in the effluent. All reactors shall be closed and provided with main condenser with cooling water circulation and vent condensers with chilled water circulation for maximum vapor recovery Distillation shall be carried out at atmospheric as well as vacuum conditions to obtain min. 95% recovery. Temperature and pressure conditions shall be stringently controlled as per the process requirement and optimized with low temperature and vacuum conditions wherever feasible. PLC/other latest control system for critical process operations shall be employed wherever necessary to the best possible extent with minimal manual operations after expansion.
2	Emissions from Bulk Storage Tanks during storage, loading and unloading	Air pollutant (VOC)	PSVs, Rupture discs provided wherever applicable Tank Pressure equalization applied wherever required Closed transfer system are provided with SOPs for loading and unloading
3	Valves, Flanges, plugs and instrument connections	Air pollutant (VOC)	Welded pipes to be used wherever feasible Suitable gasket material to be used Suitable gland packing to be used in valves Periodic inspection and maintenance of pipes and pipe fittings LDAR shall be planned and implemented for periodic inspection and maintenance of pipes and pipe fittings.
4	Drum filling machinery	Air pollutant (VOC)	Covered transfer systems are adopted, with minimum manual operations, workers are provided PPEs, areas is well-ventilated, facilitated with local exhausts and roof top ventilators

F-3 LDAR proposed:

S.N.	Component	Frequency of monitoring
1.	Valves/Flanges	Quarterly (semi annual after two consecutive periods with < 2% leaks and annual after 5 periods with < 2% leaks)
2.	Pump seals, Compressor seals, Pressure relief devices, Heat exchangers	Quarterly
3.	Pressure relief devices (after venting)	Within 24 hours
4.	Process drains, components that are difficult to monitor	Annually
5.	Pumps seal with visible liquid dripping and Any component with visible leaks	Immediately
6.	Any component after repair/replacement	With five days

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.

F-4 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, Ethylene Dichloride (EDC), Toluene, n-hexane, Ethanol	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

Comments for F-1, F-2, F-3 & F-4

- 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 not 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).

G	**Hazardous waste**
G-1	**Hazardous waste management matrix**

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Sr.	Type/	Specific	Categ	Quantity (MT/Annum)	Management of HW

No.	Name of Hazardous waste	Source of generation (Name of the Activity, Product etc.)	ory and Schedule as per HW Rules	Existing as per EC1	Existing as per CTO	Discontinue	Existing after discontinuing, & reducing existing production	Applied for EC2 (Proposed Additional)	Total after Expansion	
				(1)	(2)	(3)	(4)	(5)	(4+5)	
1.	Used or Spent Oil	From Machinery	Cat.: 5.1 Sch.: I	--	--	--	--	12	12	Collection, storage & Disposal by reuse in plant & machinery as lubricant or sell to authorized refiners/ recyclers
2.	Cotton waste containing oil	From plant premises	Cat: 5.2 & Sch: I	--	--	--	--	12	12	Collection, Storage, Transportation and Disposal by sending to TSDF site
3.	Distillation Residue	During production of Sr. no. 40, 50, 55 – 59, 62 – 65, 69 – 71, 73 – 76, 78 – 80 in product list	Cat.: 20.3 Sch.: I	81.05	81.05	- 0.8	80.25	7755.75	7836	Collection, Storage, Transportation and Disposal by sending to Co-processing OR to CHWIF
4.	Process Waste Sludge	During production of Sr. no. 43, 50, 52, 60, 61, 67, 69, 71 in product list	Cat.: 26.1 Sch.: I	805.3	562.5	- 142	420.5	10403.5	10824	Collection, Storage, Transportation and Disposal by sending to land filling at TSDF
5.	Empty Barrel/ Containers / liners contaminated with hazardous chemicals/ wastes	Packing of Raw materials / Products	Cat.: 33.1 Sch.: I	38	38	-7	31	365	396	Collection, Storage, Decontamination, Transportation and Disposal by sending to authorized decontamination facility/ recycler or reuse or send back to supplier
6.	MEE Organic	MEE rejects	Cat.: 37.3	694	725	--	725	0	725	Collection, Storage, Transportation and

			Sch.: I							Disposal by sending to Co-processing OR to CHWIF
7.	Spent Carbon	During production of Sr. no. 46, 59, 66, 68 – 70, 77 in product list & Waste Water tertiary treatment	Cat.: 36.2 Sch.: I	46	46	--	46	5066	5112	Collection, Storage, Transportation & Disposal by sending for Co-processing.
8.	Hyflow	During production of Sr. no. 46 & 49 in product list	Cat.: 36.2 Sch.: I	--	--	--	--	48	48	Collection, Storage, Transportation and Disposal by sending to land filling at TSDF
9.	Chemical sludge for wastewater treatment	From ETP & MEE	Cat.: 35.3 Sch.: I	2528	2792	-638	2154	16206	18360	Collection, Storage, Transportation and Disposal by sending to land filling at TSDF
10.	Spent Solvent	From distillation step during production of Sr. no. 40,50, 54 – 59, 62 – 65, 69 – 71, 73 – 76, 78 – 80 in product list	Cat: 20.2 & Sch: I	--	--	--	--	60000	60000	Reused continuously in production through distillation columns having Primary and secondary condensers inbuilt with reactors without any storage in the premises.
11.	Sodium Bromide Solution (25-28%)	From alkali scrubber attached to reaction vessel of AP1300 (Bis (2,3-dibromo-2-methyl propyl ether)),	Cat: B10 & Sch: II	--	--	--	--	708	708	Collection, Storage, Transportation and Disposal by sending it to actual users having valid CTO under Rule 9

		AP 1800 (Bis (2,3-dibromo propyl ether))								
12.	Dil. Sulfuric acid	During production of Dicumene	Cat: B15 & Sch: II	--	--	--	--	12000	12000	Collection, Storage, Transportation and Disposal by sending it to actual users having valid CTO under Rule 9
13.	Ortho Toludine Di amine	During production of 5 Amino 6 Methyl Benzimidazolone	--	225	225	--	--	180	405	These are the co-products generated during the production of 5 Amino 6 Methyl Benzimidazolone, Dicumene & Oryza Sativa Bran Wax. Collection, storage, transportation & sell as a co-product to actual-users.
14.	Zn chloride	During production of Dicumene	--	--	--	--	--	4500	4500	
15.	Crude rice bran oil	During production of Oryza Sativa Bran Wax	--	--	--	--	--	600	600	

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Comments:

- Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.
- The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

G-2 Non- Hazardous waste management matrix

Sr. no.	Type/ Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Quantity (MT/Annum)			Management of Non Hazardous Waste
			Existing as per CTO	Applied for EC (Proposed Additional)	Total after Expansion	
1.	Ash	From Briquette combustion	--	1998	1998	Collection, Storage, Transportation, Sale to brick manufacturers or manufacturers of Cement articles or products
2.	STP sludge	From STP	--	120	120	Collection, Storage,

						Transportation & Sent for Municipal waste disposal OR used as manure.

Comments:

- 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.
- STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.

H	**SAFETY details**
H-1	**Details regarding storage of Hazardous chemicals**

d) Storage of Hazardous chemicals in Tanks

Sr. No.	Hazardous Chemical Name	Physical State	Type of storage tank	Existing		Proposed additional		Max. Storage Qty (KL)
				No.	Capacity in KL each	No.	Capacity in KL each	
Non-CCOE Flammable Tank storages								
1	Glacial. Acetic Acid (MJ-7) Fresh	Liquid	Vertical a/g Tank	1	30	--	--	30
2	Dist. Acetic acid (MJ-7)	Liquid	Vertical a/g Tank	1	25	--	--	25
3	Fresh Dimethyl formamide (DMF) (RA-98)	Liquid	Vertical a/g Tank	1	25	--	--	25
4	Dist. Dimethyl formamide (DMF) (RA-98)	Liquid	Vertical a/g Tank	1	25	--	--	25
5	DMS (RA-84)	Liquid	Vertical a/g Tank	1	25	--	--	25
6	Fresh Ethylene dichloride	Liquid	Vertical a/g Tank	1	25	--	--	25
7	Distilled Ethylene dichloride	Liquid	Vertical a/g Tank	1	25	--	--	25
8	Isopropyl Bromide (RA-160)	Liquid	Vertical a/g Tank	1	15	--	--	15
9	Acetic anhydride	Liquid	Vertical a/g Tank	--	--	1	15 KL	15
Acid-Alkali Tank storages								
1	98% Sulphuric acid storage tank (MJ-6)	Liquid	Vertical a/g Tank	1	15	--	--	15
2	Hydrochloric acid (MJ-3) commercial	Liquid	Vertical a/g Tank	1	25	--	--	25
3	Hydrochloric acid (MJ-3) AR	Liquid	Vertical a/g Tank	1	25	--	--	25
4	Caustic(MJ -12)	Liquid	Vertical a/g Tank	1	25	--	--	25
5	Chlorosulphonic aicd (GREEN FIRE - 315)	Liquid	Vertical a/g Tank	1	25	--	--	25
6	Sodium Hypochlorite (NaOCl)	Liquid	Vertical a/g Tank	1	15	--	--	15
7	Nitric Acid	Liquid	Vertical a/g Tank	1	15	--	--	15
8	Dilute Caustic	Liquid	Vertical a/g	1	20	--	--	20

			Tank					
9	Bromine	Liquid	Vertical a/g Tank	--	--	1	10 KL	10
10	Liq ammonia	Liquid	Vertical a/g Tank	--	--	1	20 KL	20
11	Oleum 23%	Liquid	Vertical a/g Tank	--	--	1	15 KL	15
12	Oleum 65%	Liquid	Vertical a/g Tank	--	--	1	15 KL	15
13	Thionyl Chloride	Liquid	Vertical a/g Tank	--	--	1	15 KL	15
CCOE approved Tank Farm Area								
1	Fresh Toluene (RA-111)	Liquid	Horizontal u/g tank-Class A	1	25	--	--	25
2	Fresh Methanol	Liquid	Horizontal u/g tank-Class A	3	25	--	--	75
3	Fresh Hexane	Liquid	Horizontal u/g tank-Class A	1	25	--	--	25
4	Fresh butanol	Liquid	Horizontal u/g tank-Class A	1	25	--	--	25
5	Distilled Toluene	Liquid	Horizontal u/g tank-Class A	1	25	--	--	25
6	Distilled Methanol	Liquid	Horizontal u/g tank-Class A	1	25	--	--	25
7	Distilled Hexane	Liquid	Horizontal u/g tank-Class A	1	25	--	--	25
8	Distilled butanol	Liquid	Horizontal u/g tank-Class A	1	25	--	--	25
9	Distilled Ethanol (MJ-19)	Liquid	Horizontal u/g tank-Class A	2	25	--	--	50
10	Fresh Ethanol	Liquid	Horizontal u/g tank-Class A	1	25	--	--	25
11	Diesel	Liquid	Horizontal u/g tank-Class B	1	15	--	--	15
12	Acetone	Liquid	Horizontal u/g tank-Class A	--	--	1	15 KL	15
13	Alpha methyl styrene	Liquid	Horizontal u/g tank-Class B	--	--	1	15 KL	15
14	Benzene	Liquid	Horizontal u/g tank-Class A	--	--	1	15 KL	15

15	LDO	Liquid	Horizontal u/g tank-Class B	--	--	2	16 KL	16

Safety Measures for PESO Underground storage tank farm:

- Underground tanks in tank farm, segregated location CCOE approved premises
- Tank farms constructed with full compliance with applicable rules and regulations
- All pumps kept outside dyke area and remote operated valve shall be provided at pump suction to isolate in case of emergency.
- Vent condensers for highly flammable material tanks
- Nitrogen pressure transfer for highly flammable materials
- Fencing and caution notes and hazard identification boards displayed
- NFPA labeling system adopted storage tanks piping.
- Flame proof area
- Only authorized person to be permitted in storage tank farm area.
- Wheel check at unloading platform Instrumentation on tanks
- All tanks provided with the high, very high, low, very low level alarm on PLC
- Earthing-bonding provided for static charge.
- Flame arrester provided on vents of atmospheric tanks
- Emergency vent, safety valves, rupture disc to safeguard system from overpressure.
- Lightning arrestors to be installed near tank farms
- Continuity jumpers will be provided to avoid static charge accumulation.
- SOP for tanker unloading

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

❖ **Liquid/Solid Raw materials in Drums & Carboys:**

Sr. No.	Hazardous Chemical Name	Physical State	Mode of Storage	Max. Quantity to be stored @ site (MT)	No. of Container at site	Size of Container (L)	Hazardous Characteristics of Chemical
1	1 bromo propane	Liquid	Drums	3	15	200	Flammable
2	1,2,3,4 tetra hydro 2,3 dioxoquinoxaline 6 carboxylic acid	Liquid	Drums	0.20	1	200	Toxic
3	1,2,4 Tri chloro Benzene	Liquid	Drums	10.00	50	200	Toxic
4	1,4 di oxane	Liquid	Drums	1	5	200	Flammable and Toxic
5	1-Naphthalenesulfonic acid (40% NSA solution)	Liquid	Drums	0.20	1	200	Toxic
6	2 mercaptoethanol	Liquid	Drums	1	5	200	Flammable and Toxic
7	2 Methyl Resorcinol	Solid	Drums	1	5	200	Toxic
8	2,4 Dichloro aniline	Liquid	Drums	1	5	200	Toxic
9	2,4 Difluro aniline	Liquid	Drums	4	20	200	Flammable and Toxic
10	2,5 Dichloroaniline	Solid	Drums	1	5	200	Toxic
11	2-Fluro Aniline	Liquid	Drums	1	5	200	Flammable and Toxic
12	Acetophenone	Liquid	Drums	8	40	200	Flammable and Toxic
13	Acrylic acid	Liquid	Drums	8	40	200	Flammable and Toxic
14	Allyl chloride	Liquid	Drums	10	50	200	Flammable and Toxic
15	Aniline	Liquid	Drums	10	50	200	Flammable

							and Toxic
16	Benzyl Chloride	Liquid	Drums	10	50	200	Flammable and Toxic
17	Beta Alanine (BA)	Liquid	Drums	0.250	10	25	Toxic
18	Calsolene Oil	Liquid	Carboys	5.00	100	50	Toxic
19	Citramide	Liquid	Drums	0.20	1	200	Toxic
20	Cumene	Liquid	Drums	5	20	250	Flammable and Toxic
21	Cyanuric Chloride	Solid	Drums	1	20	50	Toxic
22	Cyclohexane (fresh)	Liquid	Drums	0.80	4	200	Flammable
23	Cyclo hexanone	Liquid	Drums	1	20	50	Flammable and Toxic
24	Cyclohaxane carboxylic acid chloride	Liquid	Drums	2	10	200	Flammable and Toxic
25	Di methyl aceta amide	Liquid	Carboys	0.04	1	50	Flammable
26	Di methyl teraphthalate	Liquid	Drums	0.80	4	200	Toxic
27	Di propylene glycol mono methyl ether	Liquid	Drums	0.40	2	200	Flammable
28	Dibutyl formamide	Liquid	Drums	0.20	1	200	Toxic
29	Dichlone	Liquid	Drums	0.1	1	200	Toxic
30	Diethanol amine	Liquid	Drums	3	15	200	Toxic
31	Dimethyl Sulfoxide (DMSO)	Liquid	Drums	0.19	1	200	Flammable
32	Ethyl 3-amino-4,4,4-trifluorocrotonate (EATC)	Liquid	Drums	0.05	1	50	Flammable and Toxic
33	Ethyl acetate	Liquid	Drums	10	50	200	Flammable and Toxic
34	Ethyl chloroformate	Liquid	Drums	6	30	200	Flammable and Toxic
35	Ethyl N(4chloro2fluoro-phenyl)carbamate (ECFC)	Liquid	Drums	0.20	1	200	Toxic
36	Ethyl Trifluro aceto acetate	Liquid	Drums	1	5	200	Flammable
37	European acid	Liquid	Drums	0.20	1	200	Toxic
38	Formaldehyde	Liquid	Drums	2	10	200	Flammable and Toxic
39	Formamide	Liquid	Drums	0.20	1	200	Toxic
40	Formic acid	Liquid	Carboys	0.3	5	50	Flammable and Toxic
41	Gamaa picolene	Liquid	Drums	2	10	200	Flammable and Toxic
42	Gamma Butyrolactone	Liquid	Drums	1	5	200	Toxic
43	Glycerine	Liquid	Drums	9	45	200	Toxic
44	Hydrazine Hydrate	Liquid	Drums	3	15	200	Toxic
45	Hydrobromic acid	Liquid	Drums	2	10	200	Toxic
46	Hydrogen Peroxide 50%	Liquid	Drums	10	50	200	Toxic
47	Iso Propyl Alcohhol (fresh)	Liquid	Drums	3	15	200	Flammable
48	Isobutyryl chloride	Liquid	Drums	1	5	200	Flammable and Toxic
49	Mesitylene	Liquid	Drums	3	15	200	Toxic

50	Meta amino phenol	Solid	Drums	2	10	200	Toxic
51	Meta Xylene	Liquid	Carboys	0.1	2	50	Flammable and Toxic
52	Methallyl chloride	Liquid	Drums	10	50	200	Flammable and Toxic
53	Methoxy methyl di phenyl amine	Liquid	Drums	3	15	200	Toxic
54	Methyl anthranilate	Liquid	Drums	9	45	200	Toxic
55	Methylene Di chloride	Liquid	Drums	8	40	200	Flammable and Toxic
56	Mono Ethylene Glycol	Liquid	Drums	3	15	200	Flammable and Toxic
57	Mono chloro benzene (Fresh)	Liquid	Drums	7	35	200	Flammable
58	N Ethyl aniline	Liquid	Drums	7	35	200	Flammable and Toxic
59	n-butyl Bromide	Liquid	Drums	6	30	200	Flammable
60	N-Hexanol	Liquid	Drums	6	30	200	Flammable and Toxic
61	Ni+ Catalyst	Solid	Carboys	0.05	1	50	Toxic
62	O Phenylene diamine (OPDA)	Solid	Drums	10	50	200	Toxic
63	O-Anisidine	Liquid	Drums	10	50	200	Flammable and Toxic
64	Ortho dichloro benzene	Liquid	Drums	0.29	1	200	Flammable
65	Ortho Tolidine base (OT base)	Solid	Drums	0.10	2	50	Toxic
66	Ortho Xylene	Liquid	Drums	3	15	200	Flammable
67	Para amino benzaldehyde	Liquid	Drums	0.20	1	200	Toxic
68	Para chloro benzoic acid	Liquid	Drums	1	5	200	Toxic
69	Petroleum ether (Fresh)	Liquid	Carboys	1	20	50	Flammable and Toxic
70	Phenol	Liquid	Drums	9	45	200	Flammable and Toxic
71	Phenyl Hydrazine	Liquid	Drums	7	35	200	Flammable and Toxic
72	Phosphoric acid	Liquid	Drums	0.20	1	200	Toxic
73	Phosphorous Oxychloride	Liquid	Drums	10.00	50	200	Toxic
74	Phosphorous trichloride	Liquid	Drums	2	10	200	Toxic
75	Phosphorus penta sulfide	Solid	Drums	1	5	200	Toxic
76	Phthalic anhydride	Liquid	Drums	4	20	200	Toxic
77	Pyridine	Liquid	Carboys	0.08	2	50	Flammable
78	Red phosphorus	Solid	Carboys	0.500	10	50	Toxic
79	Stannous Chloride	Liquid	Carboys	0.20	4	50	Toxic
80	Sulfolane	Liquid	Drums	0.400	2	200	Toxic
81	Sulfur di chloride	Liquid	Drums	0.20	1	200	Toxic
82	Sulfuryl Chloride	Liquid	Drums	1	5	200	Toxic
83	Tetra butyl ammonium bromide (TBAB)	Liquid	Drums	8	40	200	Toxic
84	Tetra hydro phthalic	Liquid	Drums	1	5	200	Toxic

	anhydride						
85	Tri ethyl Amine (TEA)	Liquid	Drums	0.1	1	200	Flammable and Toxic
86	Triphosgene	Solid	Drums	0.5	2	200	Toxic
87	Zinc chloride	Solid	Drums	0.2	1	200	Toxic

❖ Solid Raw materials in bags

Sr. No.	Hazardous Chemical Name	Physical State	Mode of Storage	Size of Bags (kg each)	Max No. of bags at site	Max. Quantity to be stored @ site (MT)	Hazardous Characteristics of Chemical
1	3-Aminobenzoic acid (MABA)	Solid	Bags	50	100	5.0	Toxic
2	2(2,4dihydroxyphenyl)-4,6diphenyl1,3,5triazine (BR) CAS 38369-95-8	Solid	Bags	50	4	0.2	Toxic
3	2,4 Dichloro Benzoic Acid	Solid	Bags	50	50	2.5	Toxic
4	2-Chloropropionyl Chloride (CPC)	Solid	Bags	50	2	0.1	Toxic
5	4- Chloro Aminophenol	Solid	Bags	50	100	5.0	Toxic
6	4 Chloro Nitro Phenol	Solid	Bags	50	40	2.0	Toxic
7	4 Sulfo anthranilic acid	Solid	Bags	50	60	3.0	Toxic
8	6–Acetyl Ortho Amino Phenol Sulfonic Acid (CAS 40306-75-0)	Solid	Bags	50	100	5.0	Toxic
9	Activated carbon	Solid	Bags	50	200	10.0	Toxic
10	Aluminium Chloride	Solid	Bags	200	50	10.0	Toxic
11	Anthranilic acid	Solid	Bags	50	100	5.0	Toxic
12	Aplha naphthyl amine	Solid	Bags	50	100	5.0	Toxic
13	Aspirine	Solid	Bags	50	100	5.0	Toxic
14	Benzalkonium chloride	Solid	Bags	25	1	0.03	Toxic
15	Biphenyl	Solid	Bags	50	20	1.0	Toxic
16	Bisphenol A	Solid	Bags	50	200	10.0	Toxic
17	Bisphenol AF (BPAF) (Hexafluoro Bisphenol A)	Solid	Bags	25	10	0.3	Toxic
18	Caustic Flakes	Solid	Bags	50	20	1.0	Toxic
19	Caustic potash flakes	Solid	Bags	50	200	10.0	Toxic
20	Copper (I) bromide (CuBr)	Solid	Bags	50	20	1.0	Toxic
21	Copper (II) chloride (CuCl2)	Solid	Bags	50	20	1.0	Toxic
22	Copper powder	Solid	Bags	25	4	0.1	Toxic
23	Copper sulfate	Solid	Bags	50	100	5.0	Toxic
24	Diethyl sulfate	Solid	Bags	200	2	0.4	Toxic
25	Diphenyl Sulfone	Solid	Bags	50	200	10.0	Toxic
26	Ethylene Carbonate	Solid	Bags	50	6	0.3	Toxic
27	Ethylene diamine tetraacetic acid (EDTA)	Solid	Bags	50	20	1.0	Toxic
28	Ferric chloride	Solid	Bags	50	200	10.0	Toxic
29	Ferrous sulphate	Solid	Bags	50	20	1.0	Toxic

30	Hydro quinone	Solid	Bags	50	100	5.0	Toxic
31	Hyflow	Solid	Bags	50	8	0.4	Toxic
32	Iron powder	Solid	Bags	50	100	5.0	Toxic
33	Isatonic anhydride	Solid	Bags	50	100	5.0	Toxic
34	J acid (87-02-5)	Solid	Bags	50	100	5.0	Toxic
35	Lime powder	Solid	Bags	50	400	20.0	Toxic
36	Meta Nitro Para Toluidine (MNPT)	Solid	Bags	50	100	5.0	Toxic
37	Metanilic acid	Solid	Bags	50	20	1.0	Toxic
38	Naphthalene	Solid	Bags	50	40	2.0	Toxic
39	O-Amino phenol	Solid	Bags	50	100	5.0	Toxic
40	ONCB (o-Nitrochlorobenzene)	Solid	Bags	50	100	5.0	Toxic
41	O-Nitro aniline	Solid	Bags	50	100	5.0	Toxic
42	O-Nitro phenol	Solid	Bags	50	60	3.0	Toxic
43	O-Toluene diamine	Solid	Bags	50	200	10.0	Toxic
44	Para Amino Toluene (p-toluidine)	Solid	Bags	50	200	10.0	Toxic
45	Para methoxy toluene sulfonic acid	Solid	Bags	50	100	5.0	Toxic
46	Para toluene sulfonic acid	Solid	Bags	50	20	1.0	Toxic
47	Phenanthrene	Solid	Bags	50	120	6.0	Toxic
48	Potasium Carbonate	Solid	Bags	50	40	2.0	Toxic
49	p-Phenylenediamine (PPD)	Solid	Bags	50	100	5.0	Toxic
50	PTS chloride (4-Toluenesulfonyl chloride) / PTSC	Solid	Bags	50	200	10.0	Toxic
51	Resorcinol	Solid	Bags	50	10	0.5	Toxic
52	Sodium acetate anhydrous	Solid	Bags	50	50	2.5	Toxic
53	Sodium bi sulfate	Solid	Bags	50	200	10.0	Toxic
54	Sodium Bicarbonate (SBC)	Solid	Bags	50	400	20.0	Toxic
55	Sodium Bisulfite (SBS)	Solid	Bags	50	600	30.0	Toxic
56	Sodium bromide	Solid	Bags	50	100	5.0	Toxic
57	Sodium Carbonate (Na2CO3) or Soda Ash	Solid	Bags	50	400	20.0	Toxic
58	Sodium chlorite	Solid	Bags	50	10	0.5	Toxic
59	Sodium cyanate	Solid	Bags	50	10	0.5	Toxic
60	Sodium Iodide	Solid	Bags	50	100	5.0	Toxic
61	Sodium metabisulphite	Solid	Bags	50	40	2.0	Toxic
62	Sodium nitrate	Solid	Bags	50	150	7.5	Toxic
63	Sodium nitrite (NaNO2)	Solid	Bags	50	500	25.0	Toxic
64	Sodium sulfide flakes	Solid	Bags	50	4	0.2	Toxic
65	Sodium sulfite (Na2SO3)	Solid	Bags	50	20	1.0	Toxic
66	Sodium Thiosulphate	Solid	Bags	50	4	0.2	Toxic
67	Sulfamic acid	Solid	Bags	50	15	0.8	Toxic
68	Sulphur	Solid	Bags	50	100	5.0	Toxic
69	TBBA (Tetrabromobisphenol A)	Solid	Bags	50	200	10.0	Toxic
70	Thiourea	Solid	Bags	50	200	10.0	Toxic

71	Urea TG	Solid	Bags	50	400	20.0	Toxic
72	Zinc dust	Solid	Bags	50	200	10.0	Toxic

❖ **Storage of Hazardous chemicals in Glass bottle**

Sr. No.	Hazardous Chemical Name	Physical State	Size of bottle (kg each)	Max No. of bags at site	Max. Storage Quantity (MT)
1	Iodine	Liquid	6	10.00	0.06

❖ **Gas Storage**

SN	Hazardous Chemical Name	Physical State	No. of Container & size at site		Max. Quantity to be stored @ site (kg)
			Nos.	Kg (each)	
1.	Chlorine	Liquified gas under pr.	4	900 kg Tonner	3.6
2.	Ammonia	Gas	20	50 Kg	1

CHLORINE TONNER SHED

- Chlorine tonners shall be stored separately and isolated shed in compliance with requirement of Gas Cylinder Rules, 2016.
- Shed shall be fully equipped with tonner resting and movement facilities.
- Necessary license from PESO shall be obtained.
- Tonner movement shall be done using EOT crane
- Filled and Empty tonners shall be separately placed
- Chlorine shall be supplied through header and connector.
- Safety valve shall be provided on vaporizer header and outlet of safety valve connected to scrubber.
- Chlorine detectors shall be placed at tonner shed as well as in areas where chlorine is supplied through pipeline
- Chlorine tonner shed to be provided with all necessary gas containment and absorption equipment and facility to prevent and control chlorine tonner leakage scenario consisting of :
- Chlorine kit, neutralizing media, chlorine absorption hood and scrubber, kept in ready-to use condition
- Each tonner shall be examined, while receiving.
- Personnel Protective Equipment for chlorine handling are to be provided to workers & operators
- Specific training for operation of tonners and leak arrest to be provided. Only trained operators to be allowed to work for chlorine tonner shed
- Display of notice for filled and empty Tonners.
- Only trained personnel to attend leaking tonners
- Training to be given to selected workers for using the chlorine emergency kit, SCBA and scrubber hood.
- Regular training and mock drills for using FRP hood and chlorine kit and emergency action for tonner leak should be conducted
- Water shower with eye-washer shall be provided

Flammable material Tank storages

- The fittings in flammable tank area should be classified fittings.
- Fire hydrant system shall be covering tank farm from all sides.
- Suitable foam and DCP fire extinguishing system should be used for pool fire fighting. This can be semi fixed system with connections to all tanks and dykes and portable foam cans can be used.
- The fire fighting distance should be from at distance of minimum 20m from tank dyke with fire resistant clothing.
- Fireproofing requirement of structure and equipment supports needs to be analyzed and fireproofing to be provided accordingly.
- No pumps to be installed inside the dyke.
- All transfer pumps should have double mechanical seals.
- Flame arrestors, safety devices, HC detectors and alarms shall be inspected on periodic basis
- Tanks should be segregated with dyke having minimum height of 1000 mm.
- Emergency vehicle shall be able to move around tank farms
- The gas detection will provide early information of the leak and it will provide some time to take corrective action (isolation, stopping of pump etc) to avoid the incident. Consider placing HC detectors at strategic places in storage area.
- Safety shower & eye washer to be located opposite the tank farm area at a distance of more than 6 m to prevent

water ingress near acid tanks.
- Unloading shall be carried out using standard procedures
- Portable gas detectors should be used for emergency response procedures.
- The regular inspection of FW network along the storage area should be done with schedule.

Non Flammable and Toxic Tank (Acidic and Alkali Tank farm) :
- No pumps to be installed inside the dyke.
- Safety shower & eye washer to be located at opposite sides of tank farm area at a distance of more than 6 m to
- prevent water ingress near acid tanks.
- Breather val ve and emergency vent shall be provided.
- Unloading shall be carried out using standard procedures
- Tanks shall be prevented from overflow with level alarm and return line.

Cylinder and Tonner Storage Area
- Chlorine & Ammonia gas detectors should be installed in the respective storage facility. The early detection of any leak will help to prevent any potential big incident. It also gives enough time for evacuation of the people.
- Chlorine kit shall be located nearest and accessible easily and kept in ready to use condition.
- Chlorine & Ammonia gas monitors should be mounted approximately two feet from the floor for quick and accurate detection.
- If fire is present or imminent, chlorine & Ammonia containers and equipment should be moved to a safe location, if possible.
- Non-leaking containers or equipment that cannot be moved should be kept cool by the application of water.
- This should continue until well after the fire has been extinguished and the containers are cooled

Reactor area
- The mitigation controls to avoid damage due to reactor explosion are of two types, to avoid the runaway to happen and other measure to minimize the damage if any abnormality occurs.
- To avoid disturbances and abnormal scenarios, the safety systems which will detect high temperature and pressure which are provided by licensor, shall be maintained and tested with fixed maintenance schedule
- To minimize damage once runaway occurs, Safety valve on the reactor should be designed to take care abnormal reaction scenario or as per licensor's recommendation.
- The cooling water system should be provided emergency supply and auto cut in provision for standby cooling water pump should be provided.

Instrumentation & Control:
- The reactors should have level, pressure & temperature indications and alarms for level and temperature.
- Automation should be provided to the maximum extent possible to reduce manual errors.
- Indicators, alarms should be installed at plant levels and loading and unloading areas to alert workers around.
- The alarm should be provided on either temperature or pressure based on the nature of process (exothermic or high pressure reaction)
- Remote ON/OFF switches for reactor jacket and pumps should be considered

f) Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
Flammable, Toxic & Corrosive	➢CCOE approved storage tanks • Isolated storage area, Proper ventilation • Level Indicator with alarm, flange guard, spill control kit • Double Safety valve • Flame proof Electrical equipment. • Detector system • Medium Velocity Water Spray and water curtain with deluge valve as per applicability • Respiratory Protection equipment • Non-sparking tools • Dyke Wall enclosure.

	• Round the clock security person availability • DCP and Foam type Fire Extinguishers • Water/foam monitor and fire hydrant point • SS make Safety shower/Eye washer

- **Applicability of PESO:** Yes
- PESO License obtained for storage of Class A in Bulk & Class B in bulk dated 18-08-2021 valid upto 31-12-2030.

Comments:

- Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The Petroleum and Explosives Safety Organization (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.

H-2	Types of hazardous Processes involved and its safety measures:

As example given below.

Types of process	Safety measures including Automation
Amination	– Scrubber system provided to scrub the release – Chemical safety goggles, face shields, SCBA set, Aprons, rubber gloves, etc. to be provided. – PLC based automation system – proper ventilation – Circulation of cooling water in Jacket of Reactor – Provision of pressure gauge and pressure release valve which will be below than reactor hydraulic pressure. – Provision of rupture disk. – Dosing of chemicals will be controlled by flow meters and is value. – End of Toxic vapour release line will be connected with water tank.
Bromination	– Each crate shall be examined, while receiving. – Personnel Protective Equipment to be issued to workers & operatives. – Display of notice for filled and empty bottles. – Water shower with eye-washer to be provided at plant & storage area. – Store away from incompatible chemicals – Keep flammable, pyrophoric, potentially explosive and water reactive chemicals away from sources of ignition. – Keep quantities to a minimum. – Keep containers tightly closed and in a cool, dry and well-ventilated location. – Work instructions for bromine charging will be displayed in local language/Hindi – Hypo solution, lime water slurry or soda ash solutions will be available so as to pour them over a liquid bromine spill on the floor. – PLC based automation system
Chlorination	– Chlorine tonner shed – Chlorine tonners shall be stored separately and isolated area in compliance with requirement of Gas Cylinder Rules, 2016. – Shall be closed shed with chlorine kit, FRP hood with scrubber system, chlorine detectors and fully equipped with tonner resting and movement facilities. – Each tonner shall be examined, while receiving. – Personnel Protective Equipment to be issued to workers & operatives. – Displayment of notice for filled and empty tonners. – Water shower with eye-washer to be provided. – Chlorine tonner shed shall be provided with all necessary gas containment and absorption equipment and facility to prevent and control chlorine tonner leakage scenario consisting of: Chlorine kit, neutralizing media, chlorine absorption hood and

	scrubber. – Chlorine gas monitors shall be installed which should be maintained and inspected regularly for effectiveness and set alarm level. – Chlorine gas is heavier than air so gas monitors should be mounted approximately two feet from the floor for quick and accurate detection. – Training to be given to selected workers for using the chlorine emergency kit, SCBA and scrubber hood. – Regular training and mock drills for using FRP hood and chlorine kit and emergency action for tonner leak should be conducted. – PLC based automation system
Sulphonation	– Provision of Safety valve rapture disc on reactor. – Provision of auto dumping vessel. – Required PPEs like full body protection PVC apron, Handle 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 / HCl fumes. Neutralizing agent will be kept ready for tackle any emergency spillage. – 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 Thionyl chloride charging. Caution note and emergency first aid will be displayed and training is imparted 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 spilled material. Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain. – PLC based automation system

H-3	**Details of Fire Load Calculation**

Total Plot Area:	70242.11 Sq. m.
Area utilized for plant activity:	12216.72 m^2
Area utilized for Hazardous Chemicals Storage:	14789.96
Number of Floors:	G+3
Water requirement for firefighting in KLD:	~76.33
Water storage tank provided for firefighting in KLD:	900 KL dedicated u/g fire water tank is provided.
Details of Hydrant Pumps:	Main Pump Capacity : 273 m^3 Jockey Pump Capacity: 10.80 m^3/h; Diesel Pump Capacity: 273 m^3/h
Nearest Fire Station :	Fire station, GIDC, Jhagadia
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 900 KL. SEAC found it as per the requirement.

H-4	**Details of Fire NOC/Certificate:** Shall be obtained as and when required

H-5	Details of Occupational Health Centre (OHC):

-

Number of permanent Employee:	Existing: 56 nos. Proposed: 68 nos. Total: 124 nos.
Number of Contractual person/Labour:	Existing: 52 nos. Proposed: 200 nos. Total: 252 nos.
Area provided for OHC:	100 sq. m.
Number of First Aid Boxes:	5 nos.
Nearest General Hospital:	Sewa Rural, Jhagadia
Name of Antidotes to be store in plant:	Atropine sulfate, Symptomatic tx, Milk of Magnesia, Castor Oil, Soframycine, Inj Diazepam, Ethanol, Calcium gluconate, pyridoxine hydrochloride, Folic acid, Thiamine, Potassium permanganate, Ascorbic acid for eye injury; Paracetamol for Gastric damage effects, Vinegar for skin, Methylene blue for injestion, Tetanus Toxide.

-

Comments

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

H-6	Details of Emergency measures proposed and preparedness action for chemicals and fire explosion etc.

- Unit has prepared on-site emergency plan.

I	Details of Membership for Common Facility:

Sr. No.	Membership for Common Facility	Membership Certificate issuing agency Date of Issue and validity of membership
01	CETP	Membership certificate of NCT: NT/BQC/2020/June-182 Date of issue: 16th June 2020 Valid up to: --
02	TSDF site	Existing Membership: 400 MTA NOC certificate issued by: M/s. BEIL Date of issue: 17/10/2022 Valid up to: 16/04/2022 (Six months)
03	Common Hazardous Waste Incineration Facility	NOC certificate issued by: M/s. BEIL Date of issue: 17/10/2022 Valid up to: 16/04/2022 (Six months)
04	Common Spray Drying Facility	--
05	Common MEE Facility	--
06	Common Conveyance System	--
07	PESO permission	PESO License obtained for storage of Class A in Bulk

		& Class B in bulk dated 18-08-2021 valid upto 31-12-2030.
08	FIRE permission	Shall be obtained
09	Health Certificate	Shall be obtained

J Reduce / Reuse / Recycle measures adopted.

(c) Reduce

Sr. No.	Item	Quantity	% percentage
1.	Boiler steam condensate	228 KLD	79%

(d) Reuse

Sr. No.	Item	Quantity	% percentage
1.	Cooling tower and Boiler blow down – Used for washing purpose	42 KLD	53%
2.	Used or Spent oil	12 MTA	--
3.	Empty barrels/ Containers/ Liners contaminate with hazardous chemicals	396 MTA	--
4.	Spent Solvent	60000 MTA	98%

(c) Recycle

Sr. No.	Item	Quantity	% percentage
1.	RO permeate & MEE condensate	849 KLD	43%
2.	Treated water from STP shall be used for greenbelt development & maintenance	20 KLD	17%
3.	Treated water from STP shall be used for flushing.	20 KLD	38%

K EMP Details

Sr. No	Unit	Detail	Capital Cost (Rs. In Lakhs/Crores)	Total Recurring Cost per Month (Rs. In Lakhs/ Crores per Annum)
1	Wastewater	Up gradation of Effluent treatment plant, additional RO and MEE construction and erection, Effluent drainage network, drains around plants and storages, up gradation of STP, treated and recycle effluent storage and distribution arrangements, Cost of Treatment including cost of treatment chemicals, pumping costs, manpower costs, power consumption, maintenance costs, cost of disposal to JPP of NCT	350	1530
2	Air	Construction of stacks with platform and sampling arrangements, installation of APCM, local exhaust and	108	120

		ventilation systems, Power and material consumption of APCM, manpower costs, maintenance of APCM systems		
3	Hazardous Management	Construction of waste storage areas and facilities for different types of wastes in compliance with the HW rules together with necessary infrastructure and arrangements for collection and transport Expenses for Manpower, transportation, charges for disposal at common disposal facilities	20	1445
4.	Fire & Safety	Augmentation of Fire hydrant network, fire extinguishers, foam monitors, water sprinklers, detectors, alarms, emergency control equipment, PPE, process automation (PLC system), safety devices calibration and maintenance, fire hydrant system service and maintenance, safety audit, other safety studies	100	15
5	Green Belt Development	Greenbelt development including plantation, irrigation system, greenbelt maintenance on regular basis through contract agency, re-plantation, irrigation Network maintenance and expenses on fertilizers and pesticides	12	13
6.	Occupational Health	Construction of OHC & its infrastructure facilities, Ambulance, medical supplies for OHC, first aid boxes, antidotes, PPEs, Medical examination expenses, FMO charges, OHC maintenance	60	40
7.	Noise Control	Acoustic enclosures for utility housing, DG set, provision of PPEs, Noise Monitoring	25	5
9	Environment Monitoring Program	Augmentation of Inhouse environmental testing laboratory, inhouse workplace monitoring instruments, OCEMS, online detectors and monitoring systems, EMS cell activities, environmental audits, compliance audits, statutory compliances, third party monitoring expenses, service and calibration of online monitoring systems	60	20

	Total		**735**	**3188**
10	CER Activity	Rooftop Solar plants at schools and villages, installation / maintenance / repair/replacement of RO plants, greenbelt development on village periphery and school, Rainwater harvesting systems for farms and villages, Solar Electrification through Solar Street Lights on access roads to village and solar heating systems, Composting systems for domestic waste	77	

Comments:

- The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

L **Details of CER** -

PP shall carry out CER activities as below:

Year (After Commissioning of proposed expansion project)	Focus Area	Activity	Beneficiary villages	Capital Cost in Rs. Lakh
1st Year - 2024	Rural development	Pond Restoration / Rainwater harvesting / Farm pond	Randedi & Kararvel	20
2nd Year - 2025	Energy conservation	Solar Electrification through Solar Street Lights and Roof top Solar	Kondh	10
	Waste Management	Bio-composters for domestic biodegradable wastes (agriwaste, kitchen waste, etc.)	Selod	10
3rd Year - 2026	Energy conservation	Solar Electrification through Solar Street Lights and Roof top Solar	Talodara & Dadhal	15
4th Year - 2027	Rural development	Pond Restoration / Rainwater harvesting / Farm pond	Malpor	10
5th Year - 2028	Energy conservation	Solar Electrification through Solar Street Lights and Roof top Solar	Sardarpura	12
		TOTAL		**77**

14) DELIBRATION AND RECOMMENDATION:

"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:

Construction Phase

j) "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.

k) "No uncovered vehicles carrying construction material and waste shall be permitted."

l) "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."

m) Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).

n) No excavation of soil shall be carried out without adequate dust mitigation measures in place.

o) Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.

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

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

r) 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. 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.
3. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
4. 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.
5. 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.
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. Safety & Health:

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

b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.

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

d) 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.

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

f) 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.

g) 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.

h) 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.

i) 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.

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

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

l) Unit shall provide effective fire hydrants, water monitors & foam application system at solvent storage area and unit shall provide adequate safety system such as water sprinklers, water curtains, foam pouring system etc. to restrict cascade fire emergency in solvent storage area.

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

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

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.

q) Unit shall Store Bromine Bottle in cool dry separate area, out of direct sunlight.

WATER

9. Total water requirement for the project shall not exceed 2140 KLD. Unit shall reuse 1159 KLD of treated effluent within premises. Hence, fresh water requirement shall not exceed 981 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.

10. The industrial effluent generation from the project shall not exceed 1092 KLD.
11. Management of Industrial effluent shall be as under:
    - ✓ **Dilute stream (761 KLD):**
    - ➢ 719 KLD effluent generated from process, product washing and utilities shall be treated in primary, secondary & tertiary ETP. Out of 713 KLD treated effluent, 150 KLD shall be sent to M/s NCTL, Jhagadia pipeline and remaining 563 KLD shall be treated in RO. 450 KLD, RO permeate shall be reused within premises and 113 KLD RO reject shall be treated in MEE along with concentrated stream.
    - ➢ 42 KLD effluent generated from utilities shall be treated in catridge filter and reused in washing.
    - ✓ **Concentrated Stream (444 KLD):**
    - ➢ 331 KLD effluent generated frm process, product washing & washing and 113 KLD RO reject shall be treated in in-house MEE. 399 KLD, MEE condensate shall be reused within premises.
12. 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.
13. Treated waste water shall be sent to M/s NCTL, Jhagadia only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
14. Domestic wastewater generation shall not exceed 40 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 flushing and gardening & plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
15. 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.
16. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
17. Unit shall provide ETP, RO, MEE & STP with adequate capacity.
18. The unit shall provide metering facility at the inlet and outlet of ETP, RO, MEE & STP and maintain records for the same.
19. Proper logbooks of ETP, RO, MEE & STP; 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:

20. Unit shall not exceed fuel consumption for boilers and D G Sets as per the point no. E-2 as mentioned above.
21. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by

GPCB.

22. Unit shall provide adequate APCM with process gas generation sources as the point no**. E-3** as mentioned above.
23. PP shall use approved fuels only as fuel in boilers.
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 indicativeguidelines shall also be followed to reducethe fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly toreducethe fugitive emission during vehicular movement.
    - Air borne dust shall becontrolled 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. Forcontrol of fugitive emission, VOCs, following steps shall be followed :
    - ✓ Closed handling and charging system shall be provided for chemicals.
    - ✓ Reflux condenser shall be provided over Reactors / Vessels.
    - ✓ Pumps shall be provided with mechanical seals toprevent leakages.
    - ✓ 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. Regular monitoring of ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, NOx, HCl, HBr and VOCs shall be carried out in the impactzoneand 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 toexceed the prescribed limits, necessary additionalcontrol 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. F-1 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. 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.
33. STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.
34. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
35. 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

36. The PP shall develop green belt within premises (23291.67 Sq. m i.e. 33.2% of the total plot area) as per the undertaking 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:

37. The project proponent shall carry out the activities of Rs 77 Lakhs [Pond Restoration / Rainwater harvesting / Farm pond in Randedi & Kararvel village; Solar Electrification through Solar Street Lights and Roof top Solar in Kondh, Sardarpura & Malpor villages, Talodara & Dadhal villages; Bio-composters for domestic biodegradable wastes (agriwaste, kitchen waste, etc.) in Selod village] 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.
38. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Siddhi Green Excellence 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.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

39. 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.

40. 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.
41. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
42. 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.
43. 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.
44. 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.
45. 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

4.	SIA/GJ/IND3/75908/2022	**M/s. DAXESH PETROCHEM PVT. LTD.** Plot No, 39/10,GIDC Ta.- Ankleshwar, Dist.- Bharuch	EC

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

Project status: **Expansion**

1) Details of Application:

1.1. Type of application:	EC-Expansion
1.2. Proposal no.	SIA/GJ/IND3/75908/2022
1.3. Category of Project :	5 (f) – B1
1.4. Date of application : (Online accepted by SEAC)	09/09/2022
1.5. Documents Submitted by Project Proponent(PP)	EIA Report
1.6. TOR No. & Date :	File No. SIA/GJ/28102/2022, Date:-13th Feb 2022.
1.7. Technical expert / Environmental Consultant :	M/s.Jyoti Om Chemical Research Centre Pvt. Ltd.
1.8. SEAC Meeting No. and Date:	512th SEAC meeting dated: 01.11.2022

1.9. ADS vide letter dated :	---
1.10. Reply Submitted by PP dated:	---
1.11. Revised Consideration SEAC Meeting No. and Date:	---

2) This is an existing project proposed for expansion of manufacturing of synthetic organic chemicals as mentioned below:

Sr. No	Name of Product	CAS / CI No.	Quantity (MT/Month)			End use of product
			As per applied CTE	Proposed	Total	
A	**Existing Products**					
1	Distillation of Mixed/ Spent Solvent	--	2500	0	2500	Industrial Solvent
2	Solvent of Different Range	--				Industrial Solvent
3	Thinner	--				Paint Thiner
4	Redistillation	--				Industrial Solvent
5	Blending of different petroleum products	--				Inustrial And Lubricating Oil
	Total Group-A		**2500**	**0**	**2500**	--
B	**Sulphonation**					
6.	LABSA	85536-14-7	0	1500	1500	Cleaner
7.	**Total Group-B**		**0**	**1500**	**1500**	--
C	**Miscellaneous**					
8.	Sodium Methoxide- Powder & Liquid 30%	124-41-4	0	1000	1000	Pharmaceuticals Reagent & Catalyst
9.	Petroleum sulphonate Derivatives sodium, calcium, magnesium, zinc, ammonium & barium	7440-23-5, 7440-70-2, 7439-95-4 569-58-4, 7440-39-3	0	750	750	Lubrication oil raw material
10.	Sulphonic Acid and metal derivatives of toluene, Benzene, Xylene, Naphthalene, Cumin, HAB	108-88-3, 71-43-2, 95-47-6, 9991-20-3, 8014-13-9	0	1000	1000	Industial chemical and Intermediates
	Total Group-C		**0**	**2750**	**2750**	--
D	**API – 50 MT/M Either/or**					
11.	**Venlafaxine & its intermediate Either/Or**	93413-69-5	0	50 Either / OR	50 Either / OR	Anti-Depressant& Anxiety disorder
	1-(Hydroxycyclohexyl)(4-Methoxyphenyl)Acetonitrile	131801-69-9				For preparation of venlafaxine
	1-(2-Amino(4-Methoxyphenyl)Ethyl) CyclohexanolHcl	130198-05-9				For preparation of venlafaxine
	1-(2-Amino(4-Methoxyphenyl)Ethyl)	93413-77-5				For preparation of venlafaxine

	Cyclohexanol Acetate					
12.	**Amlodipine Besylate & its intermediate Either/Or**	88150-42-9				Cardiovascular drug
	Phthaloyl amlodipine	88150-62-3				For preparation of Amlodipine besylate
	Amlodipine Base	88150-42-9				For preparation of Amlodipine besylate
	Methyl 3-aminocrotonate	14205-39-1				For preparation of Amlodipine besylate
13.	**Atorvastatin & its intermediate Either/Or**	110862-48-1				Cardiovascular Disease
	(R)-4-Cyano-3-Hydroxybutyric Acid Ethyl Ester	141942-85-0				For preparation of Atorvastatin
	(4R, Cis)-1,1-Dimethylethyl-6-Cyanomethyl-2,2-Dimethyl-1,3-Dioxane-4-Acetate	125971-94-0				For preparation of Atorvastatin
	(4R-Cis)-1,1-Dimethylethyl-6-Aminoethyl-2,2Dimethyl-1,3-Dioxane-4-Acetate	125995-13-3				For preparation of Atorvastatin
	4-Fluoro-alpha-(2-methyl-1-oxopropyl)-gamma-oxo-N,beta-diphenylbenzene butane amide	125971-96-2				For preparation of Atorvastatin
14.	Citalopram hydrobromide **Either/Or**	59729-32-7				Depression, Anxiety disorder, Phobia
15.	Quetiapin Fumarate **Either/Or**	111974-72-2				Atypical anti-psychotic
16.	Escitalopram Oxalate **Either/Or**	219861-08-2				Treatment of Depression
17.	Dothiepine Hydrochloride **Either/Or**	897-15-4				Major Depressive Disorder
18.	Rosiglitazone Maleate **Either/Or**	155141-29-0				Diabetes
19.	Clomipramine Hydrochloride **Either/Or**	17321-77-6				Depression and obsessive compulsive disorder
20.	Carbamazepine **Either/Or**	298-46-4				Ant epilepsy
21.	**Metoprolol Tartrate & its intermediate Either/Or**	37350-58-6				Anti-Hypertensive
	(2-{[4-(2-methoxyethyl)phenoxy]oxirane) (Stage – A)	56718-70-8				For preparation of Metoprolol Tartrate
	(1-[4-2-methoxyethyl)phenoxy]-3-(propane-2-ylamino)propan-2ol) (Stage – B)	51384-51-1				For preparation of Metoprolol Tartrate
	(±)1-(Isopropylamino)-3-[p-(β-methoxyethyl)phenoxy]-2-	37350-58-6				For preparation of Metoprolol

	propanol (+)-**tartrate** salt,					Tartrate
22.	**Mebendazol & its intermediate Either/Or**	**31431-39-7**				For Gastrointestinal disease
	4-chloro-3-nitro Benzophenone	56107-02-9				For preparation of Mebendazole
	3,4-Diaminobenzophenone) (DABP)	39070-63-8				For preparation of Mebendazole
	Methyl 6-benzoyl-1*H*-benzimidazol-2-yl) carbamate (Crude)	31431-39-7				For preparation of Mebendazole
23.	Phenylephrine HCL **Either/Or**	61-76-7				Allergic
24.	Sucralfate USP **Either/Or**	54182-58-0				Intestinal Ulcers & Stomach ulcers
25.	Theobromine **Either/Or**	83-67-0				lung diseases
26.	**Metoprolol Succinate & its intermediate Either/Or**	98418-47-4				Antihypertensive
	(2-{[4-(2-methoxyethyl)phenoxy]oxirane) (Stage – A)	56718-70-8				For preparation of Metoprolol Succinate
	(1-[4-2-methoxyethyl)phenoxy]-3-(propane-2-ylamino)propan-2ol) (Stage – B)	51384-51-1				For preparation of Metoprolol Succinate
	1-[4-(2-methoxyethyl)phenoxy]-3-[(1-methylethyl)amino]-2-propanol succinate	98418-47-4				For preparation of Metoprolol Succinate
27.	**Fluconazole & its intermediate Either/Or**	86386-73-4				Antifungal
	2,4-Difluoro 1H,1yl,1,2,4Triazole Acetophenone	86404-63-9				For preparation of Fluconazole
	(2,4,Difluorophenyl) -1-(1H,1yl,1,2,4Trizole)-2,3Epoxy Propane methane) sulfonate	-				For preparation of Fluconazole
	2-Chloro 2,4-Difluoro Acetophenone	51336-94-8				For preparation of Fluconazole
28.	**Telmisartan & its intermediate Either/Or**	144701-48-4				Anti-Hypertensive
	4'-methylbiphenyl – 2-carbonitrile (Stage – A)	114772-53-1				For preparation of Telmisartan
	4-Bromomethyl 2-cyano biphenyl (Stage – B)	114772-54-2				For preparation of Telmisartan
	4'-[[4-methyl-6-(1-methyl-1H-benzimidazol-2-yl)-2-propyl-1H-benzimidazol- 1-yl] biphenyl-2-carbonitrile.(Stage – C)	144702-27-2				For preparation of Telmisartan
	4'-[[4-Methyl-6-(1-methyl-2-benzimidazole)-2-propyl-1-benzimidazol -1-yl] methyl] biphenyl-2-carboxylic acid.	144701-48-4				For preparation of Telmisartan

	(Stage - Final)					
29.	**Losartan Potassium & its intermediate Either/Or**	124750-99-8				Anti-Hypertensive
	4-{[2-butyl-4chloro-5-(hydroxymethyl)-1H-imidazol-1-yl]methyl}biphenyl-2-carbonitrile (Stage – A)	114772-55-3				For preparation of Losartan Potassium
	2-n-butyl-4-chloro-5hydroxymethyl-1-{[2"-(1H-tetrazole-5-yl)-biphenyl-4-yl]methyl]imidazole (Stage – B)	124751-00-4				For preparation of Losartan Potassium
	2-n-butyl-4-chloro-5hydroxymethyl-1-{[2"-(1H-tetrazole-5-yl)-biphenyl-4-yl]methyl]imidazole potassium (Stage – Final)	124750-99-8				For preparation of Losartan Potassium
30.	**Azilsartan Medoxomil & its intermediate Either/Or**	863031-21-4				Anti-Hypertensive
	Methyl 1-[(2'-cyanobiphenyl-4-yl)methyl]-2- ethoxy-1H-benzimidazole-7-carboxylate	139481-44-0				For preparation of Azilsartan Medoxomil
	1-[[2'-(2,5-Dihydro-5-oxo-1,2,4-oxadiazol-3-yl) [1,1'-biphenyl]-4-yl]methyl] -2-ethoxy-1Hbenzimidazole-7-carboxylic acid ethyl ester	1403474-70-3				For preparation of Azilsartan Medoxomil
	Methyl 2-ethoxy-1-((2'-(N-hydroxycarbamimidoyl) -[1,1'-biphenyl]-4-yl)methyl)-1H-benzo[d]imidazole-7-carboxylate	147403-65-4				For preparation of Azilsartan Medoxomil
	Methyl 2-ethoxy-1-((2`-(5-oxo-2,5-dihydro-1,2,4-oxadiazol-3-yl) biphenyl-4-yl)Methyl)-1H-benzo[d] imidazole-7-carboxylate	147403-52-9				For preparation of Azilsartan Medoxomil
31.	**Sildenafil citrate & its intermediate Either/Or**	171599-83-0				Anti -Erectile dysfunction
	1-methyl-4-nitro-3-propyl-1H-pyrazole-5- carboxamide	139756-01-7				For preparation of Sildenafil citrate
	4-amino-1-methyl-3-propyl-1H-pyrazole-5-carboxamide hydro chloride	139756-02-8				For preparation of Sildenafil citrate
	5-(2-Ethoxyphenyl)-1-methyl-3-propyl-1H-pyrazolo[4,3-d]pyrimidin-7(6H)-one	139756-21-1				For preparation of Sildenafil citrate
	Sildenafil base	139755-83-2				For preparation of Sildenafil citrate
32.	**Meloxicam & its intermediate Either/Or**	**71125-38-7**				Anti-Inflammatory

		methyl (1,1-dioxido-3-oxo-1,2-benzothiazol-2(3H)-yl)acetate and/or	6639-62-9				
		methyl 4-hydroxy-2-methyl-2H-1,2-benzothiazine-3-carboxylate 1,1-dioxide and/or	35511-15-0				For preparation of Meloxicam
		4-hydroxy-2-methyl-N-(5-methyl-1,3-thiazol-2-yl)-2H-1,2-benzothiazine-3-carboxamide 1,1-dioxide and/or	1027136-06-6; 71125-38-7				For preparation of Meloxicam
	33.	**Clopidogrel Sulphate Either/Or**	113665-84-2				Antiplatelet
	34.	**Dexlansoprazole & its intermediate Either/Or**	138530-94-6				Gastrointestinal Disease
		L(+)-Diethyl L-tartrate	87-91-2				For preparation of Dexlansoprazole
		Lansoprazole	103577-45-3				For preparation of Dexlansoprazole
	35.	**Etoricoxib & its intermediate Either/Or**	202409-33-4				Analgesic
		1-(6-Methyl-3-pyridinyl)-2-(4-methyl sulfonyl)phenyl-ethanone(Ketosulphone,	221615-75-4				For preparation of Etoricoxib
		5-chloro-6'-methyl-3-[4-(methylsulfonyl)phenyl]-2,3'-bipyridine	202409-33-4				For preparation of Etoricoxib
	36.	**Oxcarbazepine & its intermediate Either/Or**	28721-07-5				Anticonvulsant
		10-oxo-10,11-dihydro-5H-dibenzo[b,f]azepine-5-carboxamide	28721-07-5				For preparation of Oxcarbazepine
	37.	**Minoxidil & its intermediate Either/Or**	38304-91-5				Hair Growth
		2,6-Diamino 4-Chloro Pyrimidine	156-83-2				For preparation of Minoxidil
	38.	**Cilnidipine & its intermediate Either/Or**	132203-70-4				Anti-hypertensive
		Methoxyethyl 3-nitrobenzylidenacetoacetate	39562-22-6				For preparation of Cilnidipine
		3-Amino Crotonic Acid Cinnamyl Ester	103909-86-0				For preparation of Cilnidipine
	33.	**Torsemide & its intermediate Either/Or**	56211-40-6				Diuretic
		4-chloropyridine-3-sulfonyl chloride&/Or	33263-44-4				For preparation of Diuretic
		4-chloropyridine-3-sulfonamide&/Or	33263-43-3				For preparation of Diuretic
		4-[(3-methylphenyl)amino]pyridine-3-sulfonamide	72811-73-5				For preparation of Diuretic
	39.	**Luliconazole & its intermediate Either/Or**	187164-19-8				Anti-fungal
		1-(Cyanomethyl)imidazole	98873-55-3				For preparation of

						Luliconazole
	(S)-2,4-Dichloro-alpha-(chloromethyl)-benzenemethanol	126534-31-4				For preparation of Luliconazole
	(S)-2-chloro-1-(2,4-dichlorophenyl)ethyl methanesulfonate	229334-55-8				For preparation of Luliconazole
40.	**Praziquantel & its intermediate Either/Or**	55268-74-1				Anti Anthelmintics
	1,2,3,6,7,11B-HEXAHYDRO-4H-PYRAZINO(2,1-A) ISOQUINOLINE-4-ONE (Praziquantamine)	61196-37-0				For preparation of Praziquantel
41.	**Labetalol Hydrochloride & its intermediate Either/Or**	32780-64-6				
	2-hydroxy-5-[2-(4-phenylbutan-2-ylamino)acetyl] benzamide	96441-14-4				For preparation of Labetalol Hydrochloride
42.	**Febuxostat & its intermediate Either/Or**	144060-53-7				antihyperuricemic agents
	4-Hydroxythiobenzamide	25984-63-8				For preparation of Febuxostat
	Ethyl 2-(4-hydroxyphenyl)-4-methylthiazole-5-carboxylate	161797-99-5				For preparation of Febuxostat
	Ethyl 2-(3-formyl-4-hydroxyphenyl)-4-methyl-1,3-thiazole-5-carboxylate	161798-01-2				For preparation of Febuxostat
	Ethyl 2-(3-formyl-4-isobutoxyphenyl)-4-methylthiazole-5-carboxylate-methyl-1,3-thiazole-5-carboxylate	161798-03-4				For preparation of Febuxostat
	Ethyl 2-(3-cyano-4-isobutoxyphenyl)-4-methylthiazole-5-carboxylate-methyl-1,3-thiazole-5-carboxylate	160844-75-7				For preparation of Febuxostat
43.	**Levosulpiride & its intermediate Either/Or**	23672-07-3				Anti-Depressant
	(S)-2-(Aminomethyl)-1-ethylpyrrolidine	22795-99-9				For preparation of Levosulpiride
	Methyl 2-methoxy-5-sulfamoylbenzoate	33045-52-2				For preparation of Levosulpiride
44.	**Ivabradine & its intermediate Either/Or**	155974-00-8				Cardiovascular drug
	7,8-Dimethoxy-1,3,4,5-tetrahydrobenzo[d] azepin-2-one	20925-64-8				For preparation of Ivabradine
	(1S)-4,5-Dimethoxy-1-[(methylamino)methyl] benzocyclobutane hydrochloride	866783-13-3				For preparation of Ivabradine
	7,8-Dimethoxy-3-(3-	148870-57-9				For preparation of

	iodopropyl)-1,3-dihydro-2H-3-benzazepin-2-one					Ivabradine
	3-(3-chloropropyl)-1,3-dihydro-7,8-dimethoxy-2h-3-benzazepin-2-ONE	85175-59-3				For preparation of Ivabradine
45.	**Teneligliptin & its intermediate Either/Or**	760937-92-6				Anti-Diabetic
	N-acetyl-4-oxo-L-proline	76868-78-5				For preparation of Teneligliptin
	Trans-4-Hydroxy-L-proline methyl ester hydrochloride	40216-83-9				For preparation of Teneligliptin
	(2S)-4-Oxo-2-(3-thiazolidinylcarbonyl)- 1-pyrrolidinecarboxylic acid tert-butyl ester	401564-36-1				For preparation of Teneligliptin
46.	**Atenolol Either/Or**	29122-68-7				Cardiovascular Agent
47.	**Tramaol HCL Either/Or**	27203-92-5				Analgesic
48.	**Letrozole Either/Or**	112809-51-5				Antitumor
49.	**Hydroxychloroquine Sulphate & its intermediate Either/Or**	**747-36-4**				Antimalarial
	Hydroxychloroquine Base	118-42-3				
	4,7-dichloro quinolone (Stage-A)	86-98-6				For preparation of Hydroxychloroquine
	hydroxynoval diamine (Stage – B)	69559-11-1				For preparation of Hydroxychloroquine
	Ethanol, 2-[[4-[(7-chloro-4-quinolinyl)amino]pentyl]ethylamino	118-42-3				For preparation of Hydroxychloroquine
50.	**Levomilnacipran Hydrochloride & its intermediate Either/Or**	175131-60-9				Anti-Depressant
	(1S,5R)-1-phenyl-3-oxabicyclo[3.1.0]hexan-2-one [specific lactone]	96847-53-9				For preparation of Levomilnacipran Hydrochloride
	(1R,2S)-N,N-diethyl-2-(hydroxymethyl)-1-phenyl cyclopropane carboxamide	172015-99-5				For preparation of Levomilnacipran Hydrochloride
	(1R,2S)-2-((1,3-dioxoisoindolin-2-yl)methyl)-N,N-diethyl-1-phenyl cyclopropanecarboxamide	1237261-65-2				For preparation of Levomilnacipran Hydrochloride
51.	**Dorzolamide Hcl Either/Or**	130693-82-2				Glaucoma
52.	**Prasugrel Either/Or**	150322-43-3				Anti Platelet Drug
53.	**Macitentan & its intermediate Either/Or**	441798-33-0				Cardiovascular drug
	2-Amino-5-bromopyrimidine	7752-82-1				For preparation of Macitentan
	5-Bromo-2-chloropyrimidine	32779-36-5				For preparation of Macitentan
	N-Propylsulfamide	147962-41-2				For preparation of

						Macitentan
54.	**Silodosin & its intermediate Either/Or**	160970-54-7				Benign prostatic Hyperplasia
	1-[3-(Benzoyloxy)propyl]-2,3-dihydro-5-[(2R)-2-[[2-[2-(2,2,2-trifluoroethoxy)phenoxy]ethyl] amino]propyl]-1H-indole-7-carbonitrile&/Or	885340-11-4				For preparation of Silodosin
	2,3-Dihydro-1-(3-hydroxypropyl)-5-[(2R)-2-[[2-[2-(2,2,2-trifluoroethoxy)phenoxy]ethyl] amino]propyl]-1H-indole-7-carbonitrile	885340-13-6				For preparation of Silodosin
55.	**Tenofovir Disoproxil Fumarate & its intermediate Either/Or**	147127-20-6				Treatment of HIV infection
	(R)-9-[2-(Phosphonomethoxy) propyl] adenine	107021-12-5				For preparation of Tenofovir Disoproxil Fumarate
56.	**Apixaban & its intermediate Either/Or**	503612-47-3				Cardiovascular drug
	3-chloro-1-(4-nitrophenyl)-5,6-dihydropyridin-2(1H)-one	536760-29-9				For preparation of Apixaban
	Ethyl (2Z)-chloro[(4-methoxyphenyl) hydrazono]acetate	27143-07-3				For preparation of Apixaban
	5,6-Dihydro-3-(4-morpholinyl)-1-[4-(2-oxo-1-piperidinyl)phenyl]-2(1H)-pyridinone	545445-44-1				For preparation of Apixaban
	1-(4-Methoxyphenyl)-7-oxo-6-[4-(2-oxopiperidin-1-yl)phenyl]-4,5,6,7-tetrahydro-1H-pyrazolo[3,4-c]pyridine-3-carboxylic acid ethyl ester	503614-92-4				For preparation of Apixaban
57.	**Daclatasvir & its intermediate Either/Or**	1009119-64-5				Antiviral Agent
58.	**Luliconazole & its intermediate Either/Or**	187164-19-8				Anti-fungal
	1-(Cyanomethyl)imidazole	98873-55-3				For preparation of Luliconazole
	(S)-2,4-Dichloro-alpha-(chloromethyl)-benzenemethanol	126534-31-4				For preparation of Luliconazole
	(S)-2-chloro-1-(2,4-dichlorophenyl)ethyl methanesulfonate	229334-55-8				For preparation of Luliconazole
59.	**Bosentan & its intermediate Either/Or**	157212-55-0				Anti-hypertensive
	5-(2-Methoxyphenoxy)-[2,2'-bipyrimidine]-4,6(1H,5H)-	150728-12-4				For Preparation of Bosentan

	dione					
	4,6-Dichloro-5-(2-methoxyphenoxy)-2,2'-bipyrimidine	150728-13-5				For Preparation of Bosentan
	2-Amidinopyrimidine hydrochloride	138588-40-6				For Preparation of Bosentan
	Dimethyl 2-(2-methoxyphenoxy)malonate	150726-89-9				For Preparation of Bosentan
60.	**Zaltoprofen & its intermediate Either/Or**	0089482-00-8				Anti-Inflammatory
61.	**Posaconazole& its intermediate Either/Or**	171228-49-2				For Preparation of Zaltoprofen
62.	**Nebivolol Hydrochloride & its intermediate Either/Or**	118457-14-0				Cardiovascular drug
	6-Fluoro-3,4-dihydro-2H-1-benzopyran-2-carboxylic acid	129050-20-0/ 99199-60-7				For Preparation of Nebivolol Hydrochloride
	(S)- 6-Fluoro-3,4-dihydro-2H-1-benzopyran-2-carboxylic acid	129101-36-6				For Preparation of Nebivolol Hydrochloride
	(R)-6-Fluoro-3,4-dihydro-2H-1-benzopyran-2-carboxylic acid	129101-37-7				For Preparation of Nebivolol Hydrochloride
	(6-fluoro-3,4-dihydro-2H-1-benzopyran-2-yl)(piperidin-1-yl)methanone	878208-57-2				For Preparation of Nebivolol Hydrochloride
63.	**DoxycyclineEither/Or**	24390-14-5				Anti Biotic
64.	**Dapsone & its intermediate Either/Or**	80-08-0				Anti biotic
	4,4'-Dinitrodiphenyl Sulfide	1223-31-0				For Preparation of Dapsone
	4,4' Di Nitro Diphenyl Sulfone	1156-50-9				For Preparation of Dapsone
65.	**Metformin Hydrochloride Either/Or**	115—70-4				Anti Diabetic
66.	**Glipizide & its intermediate Either/Or**	29094-61-9				Anti Diabetic
	4-(2-amino ethyl)benzenesulfonamide	35303-76-5				For Preparation of Glipizide
	5-methyl pyrazine-2-carboxylic acid	5521-55-1				For Preparation of Glipizide
67.	**Sitagliptin Phosphate & its intermediate Either/Or**	654671-78-0				Anti-Diabetic
	(3R)-N-(tert-ButoxyTbonyl)-3-amino-4-(2,4,5-trifluorophenyl)butanoic acid	486460-00-8				For preparation of Sitagliptin Phosphate
	3-(trifluoromethyl)-5,6,7,8-tetrahydro-[1,2,4]triazolo[4,3-a]pyrazine	486460-21-3				For preparation of Sitagliptin Phosphate
	3-trifluoro methyl-[1,2,4]triazole[4,3-a]piperazine hydrochloride	762240-92-6				For preparation of Sitagliptin Phosphate
	1-(3-(trifluoromethyl)-5,6-dihydro-[1,2,4]triazolo[4,3-	764667-65-4				For preparation of Sitagliptin

	a]pyrazin-7(8H)-yl)-4-(2,4,5-trifluorophenyl)butane-1,3-dione /(2Z)-4-Oxo-4-[3-(trifluoromethyl)-5,6-dihydro-[1,2,4]triazolo[4,3-a]pyrazine-7(8H)-yl]-1-(2,4,5-trifluorophenyl)butan-2-one					Phosphate
	(R)-Boc-3-amino-4-(2,4,5-trifluorophenyl) butanoic acid	486460-00-8				For preparation of Sitagliptin Phosphate
68.	**Lisinopril & its intermediate Either/Or**	83915-83-7				Cardiovascular drug
	N2-(1S-Ethoxycarbonyl-3-phenylpropyl)-N6-trifluoroacetyl L-lysine	116169-90-5				For preparation of Lisinopril
	N2-1[(1S)-Ethoxycarbonyl-3-phenylpropyl]-N6-trifluoroacetyl-L-lysyl-L-proline	103300-91-9				For preparation of Lisinopril
	N-6-Trifluoroacetyl-L-lysine	10009-20-8				For preparation of Lisinopril
	N6-Trifluoroacetyl-L-lysyl-L-proline	103300-89-6				For preparation of Lisinopril
	L-Proline benzyl ester hydrochloride	60668-01-1				For preparation of Lisinopril
69.	**Levofloxacin Either/Or**					Anti-Bacterial
70.	**Itraconazole Either/Or**	84625-61-6				To treat fungal infections
71.	**Rosuvastatin Calcium & its intermediate Either/Or**	287714-41-4				Anti-hyperlipoproteinemic
	(+)-(3R, 5S)-7-[4-(4-Fluorophenyl)-6-Isopropyl-2-(N-Methyl-N-Methanesulfonylamino)Pyrimidin-5-Yl]-(3, 5)-Dihydroxy-6(E)-Heptenoate, Tert-Butyl Rosuvastatin	147098-18-8				For preparation of Rosuvastatin Calcium
	(+)-(3R,5S)-7-[4-(4-fluorophenyl)-6-isopropyl-2-(N-methyl-N-methanesulfonylamino)pyrimidin-5-yl]3,5-dihydroxy-6(E)-heptenoic acid calcium salt	147098-20-2				For preparation of Rosuvastatin Calcium
66.	**Cilostazol & its intermediate Either/Or**	73963-72-1				Antiplatelet
	3-Chloro-N-(4-methoxyphenyl)propanamide	19313-87-2				For preparation of Cilostazol
	6-Hydroxy-2(1H)-3,4-dihydroquinolinone	54197-66-9				For preparation of Cilostazol
67	Pioglitazone **Either/Or**	11529-15-4				Platelet Inhibitor
68	Benfotiamine **Either/Or**	22457-89-2				Diabetic neuropathy
69	Milnacipran **Either/Or**	101152-94-7				Serotoninnonrepinephrine

						reuptake-inhibiter
70	Ataluren **Either/Or**	775304-57-9				Duchenne Muscular Dystrophy
71	Pranlukast **Either/Or**	103177-37-3				Leukotriene Receptor-1 Antagonist
72	Laquinimod **Either/Or**	248282-07-0				Immunomodulat
73	Suvorexant **Either/Or**	1030377-33-3				Sedative/ Hypnotics
74	Celecoxib **Either/Or**	169590-42-5				Used to relieve pain
75	Tofacitinib **Either/Or**	477600-75-2				Rheumatoid Arthritis
76	Acotiamide **Either/Or**	185106-16-5				Acetylcholinesterase Inhibitor
77	Apremilast **Either/Or**	608141-41-9				Psoriatic Arthritis
78	Brexpiperazole **Either/Or**	913611-97-9				Antipsychotic
		Total Group D	**0**	**50**	**50**	
E	**API Intermediates**				**20**	
79	2 Methyl Benzimidazole)Chemox Chemopharma(**Either/Or**	615-15-6	0	20 MT/ M Either/or	20 MT/M Either/ or	Intermediates of Chlomidazole
80	1-Hydroxybenzotriazole Hydrate)HOBT) (Chemox Chemopharma(**Either/Or**	123333-53-9				Intermediates of Ramiprile
81	4 Methyl 2 Cyanobiphenyl)Chemox Chemopharma(**Either/Or**	114772-53-1.				Intermediates of Irbesartan, Losartan Valsartan, Azilsartan, Telmisartan
82	4 Nitro Orthophenylene Diamine**Either/Or**	99-56-9				Intermediates of Ilaprazole
83	4-Bromomethyl-2-Cyanobiphenyl **Either/Or**	114772-54-2.				Intermediates of Irbesartan, Losartan Valsartan, Azilsartan Telmisartan
84	5 Nitro Benzimidazole **Either/Or**	94-52-0				Intermediates of Mebendazole
85	5 Nitro Benzimidazole Nitrate**Either/Or**	27896-84-0				Intermediates of Mebendazole
86	Benzimidazole**Either/Or**	51-17-2				Intermediates of Albendazole
87	N Acetyl Hydroxy Phenyl Piperazine**Either/Or**	67914-60-7				Intermediates of Ketoconazole
88	) 2-chloro-1)2,4 dichlorophenyl(ethanone (**Either/Or**	126534-31-4				Intermediates of Sertaconazole
89	4 Methyl Aminophenol Sulfate **Either/Or**	55-55-0				Diloxanide Furoate/Phenidon

						e
90	N)]-2-'Cyano Biphenyl-4-Yl(Methyl)-[L-(Valine Methyl Ester **Either/Or**	137863-89-9				Intermediates of Valsartan
91	) 2,4-difluoro-2)-1H-1,2,4-triazole-1-yl(acetophenone (**Either/Or**	86404-63-9				Intermediates of Voriconazole
92	) 3)-carbamoylmethyl-(5-methyl hexanoic acid (**Either/Or**	181289-15-6				Intermediates of Pregabaline
93	Isoquinopline-5-sulfonyl Chloride **Either/Or**	84468-15-5				Fasudil HCL - antagonist
94	2-chloromethyl-(3,4-dimethoxy pyridine**Either/Or**	169905-10-6				Pentaprozole
95	Pyrolidine 2,5-Dione OR Succinimide **Either/Or**	123-56-8				dogrel Bisulphate - used to treat myocardial infarction
96	2,2,Dichloro-N)-4-Hydroxyphenol-(N -Methyl Acetamide **Either/Or**	579-38-4				DiloxanideF Uroate - used to treat amoeba infections
97	2))-2,3-dimethylphenyl(amino(benzoi c acid sodium salt **Either/Or**	61-68-7				Mefenamic Acid - Used to relieve mild to moderate pain, fever, and inflammation
98	Ketosulfone **Either/Or**	221615-75-4				Etoricoxib
99	Imino Chloride **Either/Or**					QuetiapineFumarate)1st Stage(
100	10-methoxyiminostilbene **Either/Or**	4698-11-7				Pharma Intermediates
101	2-{2]2]-2,6 Dichlorophenyl(Amino [Phenyl[Acetyl[Oxyacetic Acid [Either /or**Either/Or**	1216495-92-9				Pharma Intermediates
102	2-Mercapto 5-Methoxy Benzimidazole **Either/Or**	37052-78-1				Pharma Intermediates
103	3]-4-Chloro-5-)Cyclopentyloxy-(2-Fluorophenyl-[5)-Propan-2-Ylidene-(1,3-Oxazolidin-4-One) .PIK (**Either/Or**	2886-65-9				Pharma Intermediates
104	Sodium/Potassium { 2)]-2,6 Dichloro Phenyl(Amino [Phenyl} Acetate **Either/Or**	15307-77-4				Pharma Intermediates
105	2,3 Xylyl Anthranilic Acid **Either/Or**	28022-11-9				Pharma Intermediates
106	2 Chloro 5 Methyl PPD **Either/Or**	5307-03-9				Pharma Intermediates
107	5 Amino Ortho Toluedene **Either/Or**	99-55-8				Pharma Intermediates
108	4-Bromo Anisole **Either/Or**	104-92-7				Pharma Intermediates

109	3 Amino 4 Methoxy Acetanilide **Either/Or**	6375-47-9				Pharma Intermediates
110	2 Chlor 4 Fluoro 5NBC **Either/Or**	86393-34-2				Pharma Intermediates
111	3)-dimethyl amino-(1)-3-methoxyphenyl-(2-methylpropan-1-one **Either/Or**	197145-37-2				Pharma Intermediates
112	1)]-4-chlorophenyl)(phenyl(methyl[piperazine**Either/Or**	300453-56-0				Pharma Intermediates
113	1]-4)-3-chloropropoxy-(3-methoxyphenyl[ethanone**Either/Or**	58113-30-7				Intermediate of Iloperidone
114	1)-hydroxycyclohexyl)-(4 -methoxyphenyl(acetonitrile**Either/Or**	131801-69-9				Intermediate of Venlafaxine
115	4,4,4-trifluo-1)-4-methylphenyl (butane-1,3-dione **Either/Or**	720-94-5				Pharma Intermediate
116	1)-2-methoxyphenyl(piperazine hydrochloride**Either/Or**	5464-78-8				Pharma Intermediate
117	1)-4-methoxyphenyl(piperazine Hydrochloride **Either/Or**	38869-47-5				Pharma Intermediate
118	Methyl bromo)2-chlorophenyl(acetate **Either/Or**	85259-19-4				Pharma Intermediate
119	Methyl-5-bromo-2-hydroxy-3 propanoylbenzoate **Either/Or**	91099-82-0				Pharma Intermediate
120	N)-Pyrazinylcarbonyl-(L -phenylalanine **Either/Or**	114457-94-2				Intermediate of Bortezomib
121	Cyclobutane-1,1 -Dicarboxilic acid **Either/Or**	5445-51-2				Intermediate of Carboplatin
122	4-indipyrazole **Either/Or**	3469-69-0				Intermediate of Crizitonib
123	Methyl-4-methoxyacetoacetate **Either/Or**	41051-15-4				Intermediate of Doultegravir
124	2,3-Dihydro-1,4-benzodioxine-6-Carbaldehyde **Either/Or**	29668-44-8				Intermediate of Eliglustat
125	4-(2-Amino ethyl) Morpholine **Either/Or**	2038-03-1				Intermediate of Flordipine
126	N,N-Dimethyl formamide Dimethyl acetal **Either/Or**	4637-24-5				Intermediate of Imatinib

127	Lasamide **Either/Or**	2736-23-4				Phrma Intermediate
128	RS-1)-Isopropylamino-(3]-4-)2-methoxyethyl) phenoxy] methyl] propan-2- ol OR 1-(isopropylamino)-3-[4-(2-methoxyethyl) phenoxy] propan-2-ol**Either/Or**	51384-51-1 /37350-58-6				Intermediate of Metoprolol Tartrate
129	Para Nitro Benzyl Alcohol **Either/Or**	619-73-8				Antibiotic
130	Para Cyano Benzyl Bromide **Either/Or**	17201-43-3				Antibiotic
131	Ortho Cyano Benzyl Bromide **Either/Or**	22115-41-9				Antidiabetic
132	Meta Cyano Benzyl Bromide **Either/Or**	28188-41-2				Anticancer
133	2,6 Dichloro Benzyl Bromide **Either/Or**	20443-98-5				Antibiotic
134	Bromo OTBN (2-Cyano-4-Bromo Methyl Biphenyl) **Either/Or**	114772-54-2				Antibiotic
135	N-Propyl Bromide **Either/Or**	106-94-5				Antibiotic
136	Tetra Butyl Ammonium Bromide **Either/Or**	1643-19-2				Antibiotic
137	Tetra Ethyl Ammonium Bromide **Either/Or**	71-91-0				Antibiotic
138	Para Chloro Benzoic Acid **Either/Or**	74-11-3				Antibiotic
139	Para Nitro Benzoic Acid **Either/Or**	62-23-7				Antibiotic
140	Ortho Chloro Benzoic Acid **Either/Or**	118-91-2				Antibiotic
141	2,3 & 2,4 Di Chloro Benzoic Acid **Either/Or**	50-84-0				Antibiotic
142	4-hydroxy benzaldehyde **Either/Or**	123-08-0				Pharma Intermediate
143	6-Fluoro-3,4- Dihydro-2H-1Benzopyran-2-Carboxylic Acid **Either/Or**	99199-59-4				Pharma Intermediate
144	4-fluorobenzaldehyde **Either/Or**	459-57-4				Pharma Intermediate
145	1-[4-(benzyloxy)phenyl]propan-1-one**Either/Or**	4495-66-3				Pharma Intermediate
146	1-[bis(4fluorophenyl)methyl]piperazine **Either/Or**	27469-60-9				Pharma Intermediate
147	4-methylidenepiperadine	148199-82-8				Pharma

						Intermediate
		Total Group-E	**0**	**20**	**20**	
		R&D Products	**0**	**1**	**1**	
		TOTAL GROUP A+ B+C+D+E+ R&D	**2500**	**4321**	**6821**	

3) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
4) The proposal was considered in the SEAC video conference meeting dated 01.11.2022.
5) Project proponent (PP) and their Technical Expert M/s Jyoti Om Chemical Research Centre 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) 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 December-2020 to February- 2021. Ambient Air Quality monitoring was carried out PM_{10}, $PM_{2.5}$, Sox 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 "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).
8) 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.
9) There is no Earlier EC. Unit has obtained only CTE. Hence CCR of Concerned authority is not applicable. PP submitted that there is no legal court case and public complaint against unit.
10) 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.
11) Committee asked to submit the justification regading manufacturing of R & D products-1 MT/M. Later on PP submitted the following justification through email.
    - ✓ Backing of strong R & D team, the unit is intending to develop the DSIR certified R&D facility. We have knowledge around more than 55 nos of products, published a total of 14 publications, filed 1 patent, presented total 24-research papers, have been working on 1 research project also. Further, we are in the process of developing a total 12 nos. of molecules.
    - ✓ At all the level of pharma manufacturing facilities, our R&D molecules require to undergo from

validation process before subjected to plant level production. Generally, for the validation purpose of materials, pharma industry need to undertake 3 validation batches which sizes are vary from plant to plant. And based of the plant equipment size of pharma industry, demand of our R&D products per batch per customer may vary from 50 kgs to 100 kgs. To fulfill the demand of pharma manufactures, at least we need to have permission for 1 MT/Month R&D products.

- ✓ Unit will not carry out commercial production of validated R&D products without obtaining the statutory permissions. We also would like to inform you that our all R&D products are based on existing chemistry of our products. Unit will make pilot plan facility on the first floor of production building. Unit will provide scrubbers to curb the generated process gases and will maintain ZLD for generated effluent from R &D activity.
- ✓ Moreover, PP have been engaging in R & D activity since long.
- ✓ Following molecules are selected for new development. The development will be carried out for alternative route of synthesis for reducing cost and environment impact. After lab development the product will be taken to pilot scale batches and feasibility of production will be evaluated. Thereafter scalable and non-scalable parameters will be evaluated at higher scale and three consecutive validation will be carried out at higher batch size according to the production equipment and process volume. The stability study will be carried out and check product stability. **Currently, the PPs are working on following molecules.**

1. (2S)-2-[(4R)-2-oxo-4-propyltetrahydro-1H-pyrrol-1-yl] butanamide
2. (1RS,1'RS)-1,1'-[(2RS, 2'SR)-bis(6-fluoro-3,4-dihydro-2H-1 benzopyran-2-yl)]-2,2'-iminodiethanol hydrochloride
3. (2R,3R,11bR)-1,3,4,6,7,11b-hexahydro-9,10- dimethoxy-3-(2-methylpropyl)-2H-benzo[a]quinolizin-2-yl ester, 4-methylbenzenesulfonate
4. (S)-4-(4-(5-(Aminomethyl)-2-oxooxazolidin-3-yl)phenyl)morpholin-3-one hydrochloride
5. 6-Fluoro-3,4-Dihydro-2H-1-Benzopyran-2-Carboxylic acid
6. 2-Chloromethyl-4-methoxy-3,5-dimethyl pyridine hydrochloride
7. R-Dihydro-4-propyl-2-(3H)furanone
8. (S)-2-Aminobutanamide hydrochloride
9. Imino stilbene
10. Laninamivir intermediate
11. Ambroxol hydrochloride
12. Pentoprazole intermediates

12) Compliance of the ToR found satisfactory.

13) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details

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

Existing	Proposed	Total
8.60 Crores	16.52 Crores	25.12 Crores

Break-up of proposed project Cost:

Details	Existing (Rs. In Crores)	Proposed (Rs. In Crores)	Total (Rs. In Crores)
Land	3.0	0.90	3.90
Building			
Machinery	5.07	13.40	18.47
Env. & Safety	0.53	2.05	2.58
Miscellaneous	--	0.17	0.17
Total	**8.60**	**16.52**	**25.12**

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

Plot is allotted to Daxesh Petrochem Pvt. Ltd. Directors of the plot are Dinesh Chandra K Patel. Vide Letter No. GIDC/RM/ANK/TRF/FTO/JHA2/63

Plot is open and non-agriculture land allotted for the industrial purpose.

B-1 **In case of outside GIDC only -**

Siting Criteria

Sr. no.	Environmental Sensitivity	Name/Specific details	Aerial Distance in Km
1	Habitat (Residential Area)	N.A	--
2	Eco sensitive zones	N.A	--
3	Wild life sanctuaries/National Parks	N.A	--
4	Water Bodies	N.A	--
	River	N.A	--
	Natural Nallah/Drain	N.A	--
	Lake/Pond/Wetlands	N.A	--
	Water supply Tanks/Reservoirs	N.A	--
	Canal	N.A	--

		5	Protected Monuments/Heritage sites/Public Buildings etc.	N.A	--	
		6	National/State Highway OR Express way	N.A	--	
		7	Coastal Regulation Zone (CRZ) (In case of Coastal area projects)	N.A	--	
		8.	Ground water table in meter	N.A	--	
		9.	Railway Line	N.A	--	
		10.	Air Port	N.A	--	

B-2

Area adequacy

- Total plot area of the unit is 7500 Sq.mt.
- Total production capacity will be 6821 MT/Month.
- The unit will develop total 2 Nos. of manufacturing plant have total area 1014 Sq.mt. on ground floor.
- Unit has allotted total 150 Sq. mt area for Raw Material Storage (Solid + Liquid). Solvent storage tank farm area of 380.38 sq. m. and cylinder storage area of 75 sq. m.
- ETP area will be 187.80 Sq.mt.
- Utility area will be 75 Sq.mt.
- Manufacturing facility will be G+2 facility.

Area Adequacy table:

NO.	BLDG. NAME	Area Required Sq. M	Area Provided Sq. m	% OF PROVIDED TOTAL LAND
1	GREEN BELT	2475	2500.52	33.34
2	ADMIN+Q.C LAB.	100	134.57	1.79
3	O.H.C.	15	15	0.20
4	RAW MATERIAL STORAGE AREA	100	150	2.00
5	CYLINDER STORAGE AREA	50	75	1.00
6	SOLVENT STORAGE TANK FARM	300	380.38	5.07
7	HAZARDOUS CHEMICAL STORAGE AREA	80	100	1.33
8	ETP PLANT	150	187.80	2.50
9	WATER STORAGE			1.33

	& FIRE WATER & U.G. WATER TANK	100	100.00	
10	SECURITY CABIN	9	9.81	0.13
	TRANSFORMER		22.00	0.29
11	WEIGH BRIDGE	--	48.00	0.64
12	UTILITY & PANEL ROOM	50	75.00	1.0
13	THERMIC FLUID HEATER & BOILER AREA	50	75.00	1.0
14	WARE HOUSE	200	200.00	2.67
15	PLANT-2	500	650.00	8.67
16	SOLVENT DISTILLATION & SPECIALITY CHEMICAL	300	364.00	4.85
17	ROAD AREA	--	2412.92	32.17
	TOTAL		**7500.00**	**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.

B-3 **Green belt area**

	Existing (Sq. meter)	Proposed (Sq. meter)	Total (Sq. meter)
Area in Sq. meter	0.0	2500	2500
% of total area	0	33.33 (Inside Premises)	33.33 (Inside Premises)

Comments:

The condition shall be given that -

- The PP shall develop green belt (2500 Sq. m i.e. 33.33 % of the total plot area) as per the undertaking 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.

C	**Employment generation** **Existing Nos.** / **Proposed Nos.** / **Total Nos.** 10 / 20 / 30
D	**WATER**
D-1	**Source of Water Supply** Jhagadia, GIDC Water. Letter No. NAA/CO/JHG/157, dated :- 30-05-2022
	Comments: Prior permission from concerned authority shall be obtained for withdrawal of water.
D-2	**Water consumption (KLD)**

Category	**Quantity KLD**			**Remarks**
	Existing as per applied CTE	**Proposed**	**Total**	
(A) Domestic	4	1	5	Fresh
(B) Gardening	1	2	3	--
(C) Industrial				
Process	0	70	70	Fresh - 62 KLD + Recycle - 8 KLD
Washing	0	5	5	Fresh
Boiler	0	3	3	Fresh
Cooling	50	50	100	Recycle - 100 KLD
Others (Scrubber)	0	5	5	Fresh
Industrial Total	**50**	**133**	**183**	**(Fresh – 75 KLD + Recycle - 108 KLD)**
Grand Total (A+B+C)	**55**	**136**	**191**	**(Fresh – 83 KLD + Recycle - 108 KLD)**

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Comments:

- The water consumption above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.

D-3	**Waste water generation (KLD)**

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Category	**Waste water KLD**			**Remarks**
	Existing as per applied CTE	**Proposed**	**Total**	
(E) Domestic	3	2	5	Send to the ETP

(F) Industrial				
Process	0	80	80	30 KLD Send to MEE + 50 KLD Send to ETP
Washing	0	5	5	Send to the ETP
Boiler	0	1	1	Send to the ETP
Cooling	5	10	15	Send to the ETP
Others (Scrubber)	0	5	5	Send to the MEE
Total Industrial waste water	**5**	**101**	**106**	**--**
Total [A + B]	**8**	**103**	**111**	**--**

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Comments:

- The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4	Break-up of waste water disposal & facility (For Domestic)

5 KLD Domestic Waste Water will be treated in ETP.

Comments:

5 KLD Domestic Waste Water will be treated in ETP & RO .

D-5	**Break-up of waste water disposal & facility (For Industrial)**

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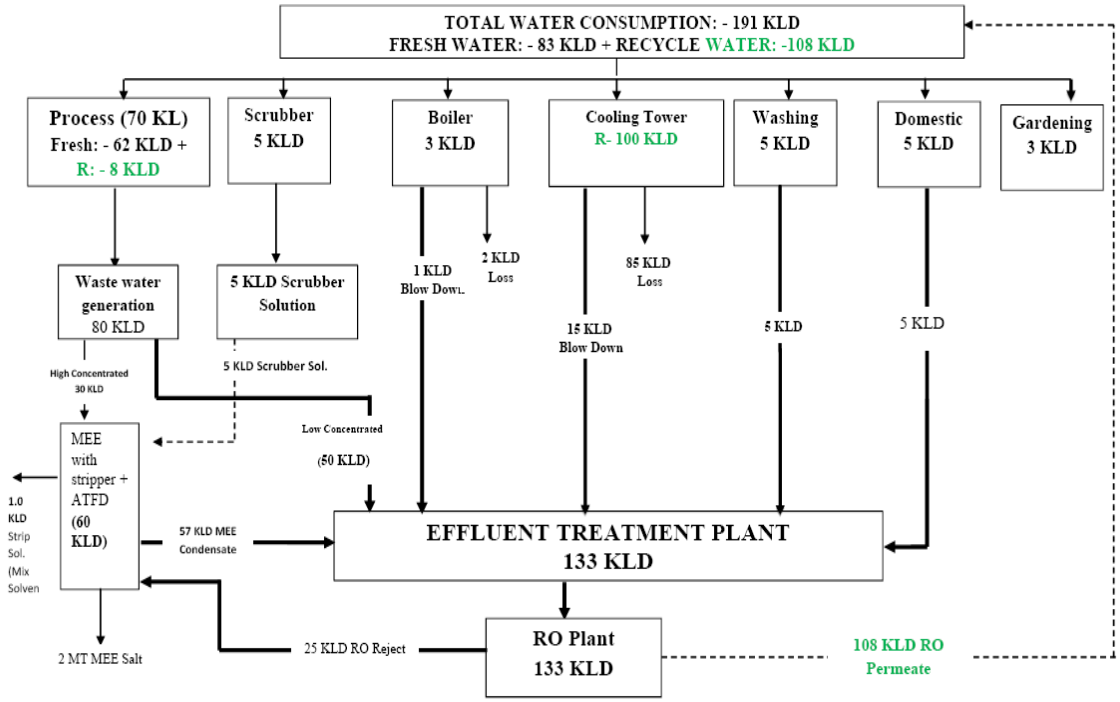
Sr. no.	**Quantity KLD**	**Facility**
1	35	Send to MEE (High Concentrated Effluent from process and Scrubber)
2	76	Send to ETP (Low concentrated effluent from process, Washing, Boiler Blow down, Cooling tower blow down & Domestic)
Total	**111**	

Comments:

- Management of Industrial effluent shall be as under:
  - ✓ Concentrated Stream (60 KLD): 35 KLD effluent generated from process & scrubber and 25 KLD, RO reject shall be treated in MEE with Stripper & ATFD. 57 KLD, MEE condensate shall be further treated in ETP along with dilute stream.
  - ✓ Dilute stream (133 KLD): 71 KLD effluent generated from process, utilities & washing, 5 KLD domestic effluent and 57 KLD, MEE condensate shall be treated in primary, secondary &

tertiary ETP followed by RO. 108 KLD, RO permeate shall be reused within premises.

D-6 Simplified water balance diagram



D-7 Summary

Summary of water requirement	**Quantity** KLD	Remarks
Total water requirement for the project **(A)**	191	--
Quantity to be **recycled (B)**	108	--
Total **fresh water** requirement **(C)**	83	--
Ensure **Total water requirement = Recycled water + Fresh water i.e. A = B + C**		

E	**AIR**
E-1	Power (Electricity) requirement : 320 KVA
E-2	**Flue gas emission details**

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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)
Existing as per Applied CTE						

1	TFH (8 Lacs Kcal/Hr.)	30	Natural Gas/ Agro waste Briquettes	2256 m3/day/ 4 MT/Day	PM SO_2 NO_X	Adequate Stack Height Either/ Or Cyclone separator + Water Scrubber
2	D.G Set 125 KVA (Stand By)	12	Diesel	16 Lit/Hr.	PM SO_2 NO_X	Acoustic Enclosure
As per proposed expansion						
3	Steam Boiler (0.95 TPH)	30	Natural Gas/ Agro waste Briquettes	1680 m3/day/ 2 MT/Day	PM SO_2 NO_X	Adequate Stack Height Either/ Or Cyclone separator + Water Scrubber

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E-3 | **Process gas**

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Sr. No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
Existing as per CTE				
There is no process gas emission				
1	Reaction Vessel- 1	HCl SO_2	18	Water Scrubber followed by Caustic Scrubber
2	Reaction Vessel- 2	Cl_2 HCl	18	2 stage Caustic Scrubber
3	Reaction Vessel- 3	Br_2 HBr	18	2 stage Caustic Scrubber
4	Reaction Vessel- 4	NH_3	18	2 stage Acid Scrubber

E-4 | **Fugitive emission details with its mitigation measures.**

Sr. No.	Source	Probable Pollutant Emission	Control Measures/ APCM
As example given below.			
1	Solvent storage tank	Air pollutant (VOC)	i) Carry out work place area monitoring t concentration level in ambient air Close handling system. ii) Provision of breather valve cum flamearr
2	Solvent recovery system	Air pollutant (VOC)	i) Solvent recovery system with steam con system. ii) Pumps & motors are Mechanical seal type.
3	Handling of raw	Air	i) Provision of exhaust ventilation

	material bags in storage area	pollutant (PM)	Provision ofPPE. 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 iv) 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 sys
6	Liquid raw material transferring to reactor	Air pollutant (VOC)	Feeding of liquid raw material will be carried o closed pipeline and mechanical seal pump.
7	Loading /unloading at storage area	Air pollutant (VOC)	Unloading through pipeline to tank in a close system.

Comments for E2, E3 & E4:

- The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Solvent management, VOC emissions etc.**
F-1	**Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.**

As example given below.

Name of Products	Qunatity 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 %
Venlafaxine	1.24	1.19	0.004	0.996	3	4	96
	1.8	1.746	0.003	0.997	2	3	97
Amlodipine Besylate	0.4	0.388	0.011	0.989	2	3	97

	0.28	0.268	0.025	0.975	3	4	96
	0.04	0.038	0.006	0.994	4	5	95
	0.2	0.192	0.015	0.985	3	4	96
Atorvastatin	0.086	0.082	0.002	0.998	3	4	96
	0.42	0.408	0.008	0.992	2	3	97
	0.01	0.01	0.045	0.955	4	5	95
	1.9	1.824	0.009	0.991	3	4	96
Citalopram hydrobromide	1.28	1.216	0.012	0.988	4	5	95
	1.95	1.872	0.006	0.994	3	4	96
	0.3	0.288	0.007	0.993	3	4	96
Quetiapin Fumarate	3.4	3.23	0.008	0.992	4	5	95
	1.666	1.616	0.012	0.988	2	3	97
Escitalopram Oxalate	1.6	1.568	0.033	0.967	1	2	98
	1.172	1.114	0.074	0.926	4	5	95
	1.04	0.988	0.005	0.995	4	5	95
	0.05	0.048	0.015	0.985	3	4	96
Dothiepine Hydrochloride	0.56	0.532	0.006	0.994	4	5	95
	0.816	0.782	0.004	0.996	3	4	96
	0.6	0.576	0.016	0.984	3	4	96
	1.334	1.294	0.006	0.994	2	3	97
	0.6	0.57	0.008	0.992	4	5	95
	1	0.96	0.003	0.997	3	4	96
	2.65	2.544	0.004	0.996	3	4	96
	1.166	1.132	0.014	0.986	2	3	97
Clomipramine Hydrochloride	2.15	2.064	0.009	0.991	3	4	96
	1.08	1.048	0.037	0.963	2	3	97
	0.936	0.89	0.016	0.984	4	5	95
Carbamazepine	0.52	0.494	0.063	0.937	4	5	95
	0.1	0.098	0.004	0.996	1	2	98
METOPROLOL SUCCINATE	0.876	0.84	0.009	0.991	3	4	96
	0.5	0.48	0.017	0.983	3	4	96
Mebendazole	1.12	1.064	0.002	0.998	4	5	95
Phenylephrine HCL	1.5	1.44	0.018	0.982	3	4	96
	1.666	1.616	0.014	0.986	2	3	97
	1.6	1.536	0.036	0.964	3	4	96
	1.376	1.32	0.008	0.992	3	4	96
SUCRALFATE USP	0.56	0.532	0.006	0.994	4	5	95
METOPROLOL SUCCINATE	0.876	0.84	0.014	0.986	3	4	96
	0.666	0.646	0.003	0.997	2	3	97

FLUCONAZOLE	0.8	0.776	0.007	0.993	2	3	97
	0.034	0.032	0.015	0.985	2	3	97
	0.02	0.02	0.009	0.991	1	2	98
	0.7	0.666	0.002	0.998	4	5	95
	0.2	0.196	0.008	0.992	1	2	98
Telmisartan	4.35	4.176	0.015	0.985	3	4	96
	5.5	5.226	0.003	0.997	4	5	95
	4	3.8	0.015	0.985	4	5	95
	7	6.72	0.019	0.981	3	4	96
Losartan Potassium	19.334	18.754	0.007	0.993	2	3	97
Azilsartan Medoxomil	2	1.92	0.016	0.984	3	4	96
	0.22	0.21	0.009	0.991	4	5	95
	1.2	1.176	0.018	0.982	1	2	98
	3.98	3.782	0.004	0.996	4	5	95
	3.3	3.168	0.031	0.969	3	4	96
	1.1	1.078	0.005	0.995	1	2	98
Sildenafil citrate	1.95	1.912	0.001	0.999	1	2	98
	0.1	0.096	0.007	0.993	4	5	95
	0.134	0.13	0.014	0.986	2	3	97
	2.16	2.052	0.006	0.994	4	5	95
Meloxicam	4	3.8	0.008	0.992	4	5	95
	1.56	1.528	0.012	0.988	1	2	98
	10.5	10.08	0.017	0.983	3	4	96
	4.44	4.352	0.005	0.995	1	2	98
Clopidogrel Sulfate	3	2.91	0.008	0.992	2	3	97
	12.4	11.78	0.017	0.983	4	5	95
	1.98	1.882	0.002	0.998	4	5	95
Dexlansoprazole	4.25	4.08	0.007	0.993	3	4	96
	15	14.7	0.001	0.999	1	2	98
	8.05	7.89	0.005	0.995	1	2	98
Etoricoxib	3.3	3.202	0.014	0.986	2	3	97
	1.49	1.43	0.019	0.981	3	4	96
	20.5	19.886	0.004	0.996	2	3	97
	5.75	5.52	0.006	0.994	3	4	96
Oxcarbazepine	6	5.7	0.008	0.992	4	5	95
	1.666	1.616	0.004	0.996	2	3	97
	4	3.8	0.018	0.982	4	5	95
Minoxidil	1.25	1.2	0.025	0.975	3	4	96
	2.076	1.992	0.004	0.996	3	4	96

	1.88	1.786	0.006	0.994	4	5	95
Cilnidipine	1.4	1.344	0.008	0.992	3	4	96
Luliconazole	0.38	0.362	0.01	0.99	4	5	95
	0.226	0.216	0.002	0.998	3	4	96
	3	2.91	0.006	0.994	2	3	97
	0.18	0.172	0.018	0.982	4	5	95
Labetalol	18.5	18.13	0.02	0.98	1	2	98
Febuxostat	8	7.68	0.004	0.996	3	4	96
Ivabradine	2.44	2.318	0.016	0.984	4	5	95
	1.866	1.81	0.014	0.986	2	3	97
Teneligliptin	6.35	6.096	0.008	0.992	3	4	96
	6.05	5.808	0.012	0.988	3	4	96
Atenolol	15	14.4	0.005	0.995	3	4	96
	10.4	9.88	0.016	0.984	4	5	95
Tramadol Hcl	3.4	3.298	0.007	0.993	2	3	97
	12.5	12	0.003	0.997	3	4	96
	8	7.6	0.02	0.98	4	5	95
Letrozole	0.4	0.384	0.004	0.996	3	4	96
	0.734	0.712	0.016	0.984	2	3	97
	1.166	1.132	0.008	0.992	2	3	97
Hydroxychloroquine	6.28	5.966	0.012	0.988	4	5	95
	5.2	5.044	0.009	0.991	2	3	97
	6.2	5.89	0.007	0.993	4	5	95
Levomilnacipran Hydrochloride	7.3	7.154	0.024	0.976	1	2	98
	0.1	0.096	0.006	0.994	4	5	95
	0.5	0.48	0.01	0.99	3	4	96
Dorzolamide Hcl	3	2.85	0.015	0.985	4	5	95
Prasugrel Hydrochloride	5	4.8	0.004	0.996	3	4	96
Silodosin	7.5	7.2	0.005	0.995	3	4	96
	0.64	0.608	0.008	0.992	4	5	95
tenofovir	0.6	0.57	0.012	0.988	4	5	95
	3.2	3.136	0.015	0.985	1	2	98
	2.2	2.134	0.003	0.997	2	3	97
	2.05	2.01	0.025	0.975	1	2	98
	1.18	1.122	0.007	0.993	4	5	95
Apixaban	0.18	0.172	0.006	0.994	4	5	95

	0.4	0.384	0.007	0.993	3	4	96
	1.5	1.47	0.009	0.991	1	2	98
Luliconazole	3.226	3.096	0.012	0.988	3	4	96
	1.72	1.634	0.015	0.985	4	5	95
	3.2	3.136	0.005	0.995	1	2	98
	0.6	0.57	0.003	0.997	4	5	95
Bosentan Monohydrate	4.2	4.032	0.002	0.998	3	4	96
	1.866	1.81	0.001	0.999	2	3	97
	5.77	5.654	0.006	0.994	1	2	98
	2.6	2.47	0.007	0.993	4	5	95
	5.2	4.94	0.002	0.998	4	5	95
	2.45	2.402	0.016	0.984	1	2	98
Nebivolol	3.866	3.75	0.02	0.98	2	3	97
	0.054	0.052	0.022	0.978	2	3	97
	0.07	0.068	0.007	0.993	3	4	96
	0.266	0.258	0.006	0.994	2	3	97
	1.534	1.488	0.001	0.999	2	3	97
	2.8	2.744	0.005	0.995	1	2	98
	1.532	1.456	0.01	0.99	4	5	95
Dapsone	0.326	0.312	0.016	0.984	3	4	96
Metformin	0.75	0.72	0.005	0.995	3	4	96
	1.2	1.14	0.004	0.996	4	5	95
Glipizide	0.012	0.012	0.008	0.992	1	2	98
	0.102	0.098	0.004	0.996	4	5	95
	0.08	0.078	0.009	0.991	2	3	97
	0.8	0.76	0.01	0.99	4	5	95
Sitagliptin Phosphate	0.48	0.456	0.012	0.988	4	5	95
	0.12	0.116	0.015	0.985	2	3	97
Lisinopril	1.276	1.224	0.019	0.981	3	4	96
	0.25	0.24	0.003	0.997	3	4	96
	0.82	0.78	0.005	0.995	4	5	95
Levofloxacin	0.4	0.38	0.001	0.999	4	5	95
Itraconazole	0.866	0.84	0.008	0.992	2	3	97
	0.286	0.274	0.006	0.994	3	4	96
	0.664	0.63	0.005	0.995	4	5	95
	0.59	0.578	0.007	0.993	1	2	98
	0.15	0.144	0.006	0.994	3	4	96
	4.75	4.56	0.006	0.994	3	4	96
Rosuvastatin Calcium	0.4	0.38	0.016	0.984	4	5	95

	0.5	0.486	0.014	0.986	2	3	97
	0.9	0.864	0.005	0.995	3	4	96
	0.32	0.304	0.015	0.985	4	5	95
	1.68	1.596	0.007	0.993	4	5	95
cipranMilna	1.5	1.44	0.01	0.99	3	4	96
	0.8	0.76	0.003	0.997	4	5	95
	4.7	4.606	0.006	0.994	1	2	98
	2.2	2.09	0.008	0.992	4	5	95
	1.866	1.81	0.004	0.996	2	3	97
Ataluren	0.14	0.136	0.009	0.991	2	3	97
	2.75	2.64	0.002	0.998	3	4	96
	1	0.96	0.005	0.995	3	4	96
	0.096	0.092	0.006	0.994	3	4	96
	1.534	1.488	0.002	0.998	2	3	97
Pranlukast	0.086	0.082	0.024	0.976	3	4	96
	0.126	0.12	0.012	0.988	3	4	96
	1.2	1.14	0.002	0.998	4	5	95
	0.092	0.088	0.006	0.994	4	5	95
	0.09	0.086	0.007	0.993	3	4	96
	3.6	3.492	0.006	0.994	2	3	97
Laquinimod	0.4	0.38	0.008	0.992	4	5	95
	0.65	0.624	0.013	0.987	3	4	96
	0.08	0.076	0.017	0.983	3	4	96
Suvorexant	0.4	0.388	0.006	0.994	2	3	97
	0.2	0.192	0.005	0.995	3	4	96
	1	0.97	0.004	0.996	2	3	97
	0.62	0.602	0.002	0.998	2	3	97
	0.02	0.02	0.0016	0.9984	1	2	98
	0.028	0.026	0.001	0.999	4	5	95
	0.334	0.324	0.003	0.997	2	3	97
	0.5	0.48	0.005	0.995	3	4	96
	0.934	0.906	0.015	0.985	2	3	97
	0.192	0.182	0.006	0.994	4	5	95
	0.846	0.812	0.004	0.996	3	4	96
Tofacitinib	7.75	7.44	0.002	0.998	3	4	96
	2.8	2.716	0.012	0.988	2	3	97
	0.8	0.776	0.035	0.965	2	3	97
	0.2	0.192	0.002	0.998	3	4	96
Acotiamide	1.25	1.2	0.001	0.999	3	4	96

	2	1.94	0.003	0.997	2	3	97
	2.5	2.4	0.004	0.996	3	4	96
	2.666	2.586	0.005	0.995	2	3	97
Aprimilast	6	5.76	0.002	0.998	3	4	96
	0.236	0.226	0.002	0.998	3	4	96
	1.534	1.488	0.003	0.997	2	3	97
	2.24	2.128	0.002	0.998	4	5	95
	1.1	1.056	0.003	0.997	3	4	96
	1.3	1.248	0.005	0.995	3	4	96
	0.06	0.058	0.006	0.994	4	5	95
	0.09	0.088	0.011	0.989	1	2	98
Brexpiperazole	0.934	0.906	0.003	0.997	2	3	97
	1.8	1.728	0.004	0.996	3	4	96
	0.3	0.286	0.008	0.992	4	5	95
	0.196	0.186	0.003	0.997	4	5	95
	0.5	0.48	0.035	0.965	3	4	96
1-Hydroxybenzotriazole Hydrate (HOBT)	0.735	0.71	0.001	0.999	2	3	97
	1.425	1.37	0.015	0.985	3	4	96
4 Methyl 2 Cyanobiphenyl	3.55	3.41	0.013	0.987	3	4	96
4 Bromomethyl 2 Cyanobiphenyl	3.665	3.555	0.014	0.986	2	3	97
N Acetyl Hydroxy Phenyl Piperazine Description	1.4	1.37	0.005	0.995	1	2	98
Luliconazole Intermediate (2-chloro-1(2,4 dichlorophenyl)ethanone)	2.125	2.04	0.007	0.993	3	4	96
N-[(2'-Cyano Biphenyl-4-Yl)Methyl]-(L)-Valine Methyl Ester	5.7	5.53	0.006	0.994	2	3	97
Voiconazole Intermediate (2,4-difluoro-2-(1H-1,2,4-triazole-1-yl)acetophenone)	4.835	4.69	0.01	0.99	2	3	97

	0.625	0.6	0.005	0.995	3	4	96
3-carbamoylmethyl)-5-methyl hexanoic acid	2.85	2.795	0.008	0.992	1	2	98
3-[4-chloro-5-(cyclopentyloxy)-2-fluorophenyl1]-5-(propan-2-ylidene)	1.7	1.65	0.003	0.997	2	3	97
2,3 XylylAnthranilic Acid	0.065	0.06	0.035	0.965	3	4	96
2 Chloro 5 Methyl PPD	0.6	0.58	0.009	0.991	2	3	97
5 Amino Ortho Toluedene	1.5	1.44	0.002	0.998	3	4	96
	1.25	1.2	0.003	0.997	3	4	96
4-Bromo Anisole	12.625	12.12	0.004	0.996	3	4	96
3 Amino4 Methoxy Acetanilide	3	2.94	0.005	0.995	1	2	98
2 chlor 4 fluoro 5NBC	1.865	1.81	0.016	0.984	2	3	97
N-(Pyrazinyl carbonyl)-L-	2.025	1.945	0.002	0.998	3	4	96
	0.375	0.37	0.008	0.992	1	2	98
	0.085	0.08	0.009	0.991	2	3	97
Cyclobutane-1,1-Dicarboxilic acid	1.835	1.78	0.004	0.996	2	3	97
	0.2	0.19	0.003	0.997	4	5	95
2,3-Dihydro-1,4-benzodioxine-6-	0.065	0.06	0.002	0.998	3	4	96
	1.765	1.69	0.005	0.995	3	4	96
N,N-Dimethyl formamide Dimethyl acetal	1.3	1.25	0.003	0.997	3	4	96
	1.9	1.845	0.006	0.994	2	3	97
Para Nitro Benzyl Alcohol	5.5	5.39	0.004	0.996	1	2	98
Para Cyano Benzyl Bromide	0.5	0.475	0.007	0.993	4	5	95
	0.335	0.325	0.008	0.992	2	3	97
Ortho Cyano Benzyl Bromide	1.5	1.455	0.015	0.985	2	3	97
	0.125	0.12	0.003	0.997	3	4	96

Meta Cyano Benzyl Bromide	0.05	0.05	0.009	0.991	4	5	95
	0.335	0.325	0.004	0.996	2	3	97
2,6 Dichloro Benzyl Bromide	0.835	0.81	0.002	0.998	2	3	97
	2	1.94	0.025	0.975	2	3	97
Bromo OTBN (2-Cyano-4-Bromo Methyl Biphenyl)	0.8	0.76	0.003	0.997	4	5	95
	0.5	0.48	0.008	0.992	3	4	96
Tetra Butyl Ammonium Bromide	0.2	0.19	0.007	0.993	4	5	95
	0.6	0.57	0.005	0.995	4	5	95

F-2	**VOC emission sources and its mitigation measures for achieving maximum solvent recovery and minimize VOC generation:**

F-2	**VOC emission Sources and its Mitigation Measures.**		
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 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	Routine & periodic inspection to check leakage. Preventive

F-3	**LDAR proposed:**

S.N.	**Component**	**Frequency of monitoring**	**Repair preventive maintenance schedule**
As example given below			
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.

F-4 | **LDAR for specific solvent :**

As example given below.

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/ Toluene / Ethanol/ Isopropanol/ Acetonitrile/Acetone /Cyclohexane/ MDC/ Hexane/ Dimethyl Sulphate/TEA/ Butanol	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	• 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	• Check Thickness of tank • Using fix pipeline for solvent transfer • Minimum use of Connectors & Joins • Provided sufficient Space (Solvent Unloading area) for Solvent

					lines		immediately repair or replace with new seal.	Tanker

Comments for F-1, F-2, F-3 & F-4

- 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 not 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).

G	**Hazardous waste**
G-1	**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**
				Existing	**Proposed**	**Total**	
1.	ETP Waste	From ETP plant	26.2	1	365	366	Collection, Storage, Transportation and disposal at TSDF site.
2.	Strip Solvent	Stripper	20.2	0	365	365	Collection, Storage & treatment in In-house solvent recovery plant.
3.	Evaporator Salt	From MEE	26.2	0	730	730	Collection, Storage, Transportation and disposal at TSDF site.
4.	Used Oil	From Lubrication	5.1	0.5	5	5.5	Collection, Storage & Reused within the premises.
5.	Discarded Drums/Empty Barrels/ Containers / Bag/Liners	From Packing Material	33.1	450	50	500	Collection, storage, transportation & disposal by selling to GPCB authorized recycler

6	Spent Caron /Hyflow/ Charcoal	From Process, ETP	28.3	2	150	152	Collection, Decontamination, Disposal by sent it to Co-Processing/Incineration
7.	Recoverable Solvent	From Process	20.2	0	12500	12500	Collection, Storage and reused within the premises after in-house distillation.
8.	Spent Solvents	Collection from other industries & manufacturing process	20.2	15000	1200	16200	Collection, Recycling, Utilization, Reception, Reuse, Recovery, storage &Transportation/treatment in own SRP plant.
9.	Distillation Residue	Production process	20.3	4500	250	4750	Collection, Decontamination, Disposal by sent it to Co-Processing/Incineration.
10.	Scrubbed Solution – Ammonium Chloride (NH4Cl)	From Scrubber	B15	0	620	620	Collection, Storage and send to the in-house MEE.
11.	Scrubbed Solution - Sodium Hypochlorite (NaClO)	From Scrubber	B15	0	365	365	Collection, Storage and send to the in-house MEE.
12.	Scrubbed Solution - Hydrochloric Acid $NaHSO_3$	From Scrubber	B15	0	400	400	Collection, Storage and send to the in-house MEE.
13.	Scrubbed Solution – Sodium Bisulfite ($NaHSO_3$)	From Scrubber	B15	0	185	185	Collection, Storage and send to the in-house MEE.
14.	RO Membrane	From RO plant	--	0	5	5	Collection, Storage, Transportation and disposal at TSDF site.
15.	Spent Sulphuric Acid	From Process	26.3	0	5250	5250	Collection, Storage and disposal by sell out to authorize vendor under Rule 9 permission.
16.	Scrubbed Solution Sodium Bromide	From Scrubber	B15	0	256	256	Collection, Storage and send to the in-house MEE.
17.	Date expired Product	From premises	28.5	0	5	5	Collection, storage, transportation, co-processing in cement

							plants /incineration in common incinerator, (if calorific value is less than 2500 kcal/kg).
18.	Off-specification Product	Production process	28.4	0	5	5	Collection, storage, transportation, co-processing in cement plants, incineration in common incinerator, (if calorific value is less than 2500 kcal/kg).

Comments:

- Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.
- The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

G-2	Non- Hazardous waste management matrix

Sr. no.	**Type/Name of Other wastes**	**Specific Source of generation (Name of the Activity, Product etc.)**	**Quantity (MT/Annum)**	**Management of Wastes**
1	Glass Waste	Glass Material	1 MT/Annum	Disposal as per MSW rules.
2	Paper Waste	Stationary	2 MT/Annum	Disposal as per MSW rules.
3	Fly Ash	Process	220 MT/Annum	Send to authorize Brick manufactures

Comments:

- 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.

H	**SAFETY details**
H-1	**Details regarding storage of Hazardous chemicals**

g) Storage of Hazardous chemicals in Tanks

As example given below.

Sr. no	**Name of Chemical**	**Capacity of Tank**	**Number of Tanks**	**Hazardous Characteristics of Chemical**
TANK FARM (NON-PESO)				
1	Hydrochloric Acid	10 KL	1	Corrosive
2	Ammonia	5 KL	1	Toxic
3	Nitric Acid 98%	10 KL	1	Corrosive

4	Sulphuric Acid	10 KL	1	Corrosive
5	Chloro Sulphonic Acid	10 KL	1	Corrosive
6	Caustic Lye	10 KL	1	Corrosive
7	Oleum	10 KL	1	Corrosive
8	Acetic Acid	10 KL	1	Corrosive
TANK FARM (PESO)				
9	Benzene	20 KL	1	Flammable
10	Acetone	20 KL	1	Flammable
11	Ethyl Acetate	5 KL	1	Flammable
12	Isopropyl Alcohol	20 KL	1	Flammable
13	Methanol	20 KL	1	Flammable and toxic
14	Methylene Dichloride	5 KL	1	Flammable
15	N-Hexane	20 KL	1	Flammable
16	Toluene	20 KL	1	Flammable

Safety Measures for PESO Underground storage tank farm:

h) 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	Bromine	Glass bottle-3 kg	5	Toxic	Liquid
2	Thionyl Chloride	Drum- 200 Lit	3	Corrosive, Toxic	Liquid
3	Acetyl Chloride	Drum-200 Lit	5	Corrosive	Liquid
4	Ammonia Solution	Drum-30 Lit	5	Toxic	Liquid
5	Dimethyl sulphate	Drum-200 Lit	4	Flammable, Toxic	Liquid
6	Ethyl Acetate	Drum 200 Lit.	10	Flammable	Liquid
7	Tetra Hydro Furan	Drum 200 Lit	10	Flammable	Liquid
8	Phosphoric Acid	Drum-100 Lit	6	Corrosive	Liquid
9	Formic Acid	Drum-20 Lit	5	Corrosive	Liquid
10	Aluminium Chloride	Bag – 25 Kg	6	Corrosive	Solid
11	Hydrogen (Cylinder)	7 m3	4	Explosive	Gas
12	Chlorine (Cylinder)	900 kg	2	Toxic	Gas
13	Carbon	Bag- 50 kg	10	Flammable	Solid
14	Sodium Chloride	Bag- 50 kg	10	Corrosive	Solid
15	Potassium carbonate	Bag- 50 kg	10	Corrosive	Solid
16	Sodium sulphate	Bag- 50 kg	5	Corrosive	Solid

17	Sodium Hydride	Bag- 50 kg	5	Flammable	Solid
18	Manganese dioxide	Bag- 50 kg	2	Irritant	Solid
19	Potassium iodide	Bag- 50 kg	2	Irritant	Solid
20	Sodium Borohydride	Bag- 50 kg	10	Combustible	Solid
21	Ammonium Chloride	Bag- 50 kg	10	Corrosive	Solid
22	Cyclohexane	Drum- 200 Lit	5	Flammable	Liquid
23	Methylamine	Drum-200 Lit	5	Flammable, Corrosive	Liquid
24	Tert butyl methyl ether	Drum-200 Lit	5	Flammable	Liquid
25	Dimethyl formamide	Drum-200 Lit	10	Flammable	Liquid
26	Dimethyl formaldehyde	Drum-200 Lit	5	Flammable	Liquid
27	Dimethyl Sulfoxide	Drum-200 Lit	10	Flammable	Liquid
28	Methyl Chloroformate	Drum-200 Lit	5	Flammable, Toxic	Liquid
29	Dimethyl Sulphide	Drum-200 Lit	5	Flammable	Liquid
30	Butanol	Drum-200 Lit	5	Flammable, Corrosive	Liquid
31	Diethyl oxalate	Drum-200 Lit	2	Irritant	Liquid
32	2-ethoxy benzoic acid	Drum-200 Lit	2	Irritant	Liquid
33	2-methoxy ethanol	Drum-200 Lit	2	Flammable	Liquid
34	Ethylene dibromide	Drum-200 Lit	2	Toxic	Liquid
35	Ammonium Hydroxide	Drum-200 Lit	5	Corrosive	Liquid
36	Carbon disulphide	Drum-200 Lit	3	Flammable	Liquid
37	Benzyl Cyanide	Drum-200 Lit	2	Toxic	Liquid
39	Sodium bicarbonate	Bag- 50 kg	2	Irritant	Solid
40	Sodium hydroxide	Bag- 50 kg	5	Corrosive	Solid
41	Calcium Acetate	Bag- 50 kg	3	Irritant	Solid
42	Medoxomil Chloride	Bag- 50 kg	3	Irritant	Solid
43	Oxalic acid	Bag- 50 kg	2	Corrosive	Solid
44	4-fluoro benzaldehyde	Bag- 50 kg	2	Irritant	Solid
45	Maleic acid	Bag- 50 kg	3	Corrosive	Solid
46	Sodium hydride	Bag- 50 kg	5	Flammable,	Solid

				Corrosive	
47	Cyano acetic acid	Bag- 50 kg	2	Corrosive	solid
48	Succinic acid	Bag- 50 kg	2	Corrosive	Solid
49	Sodium metabisulfite	Bag- 50 kg	5	Corrosive	Solid
50	Imidazole	Bag- 50 kg	2	Corrosive	Solid
51	Potassium Tert Butoxide	Bag- 50 kg	3	Flammable, Corrosive	Solid
52	1-hydroxybenzotriazole	Bag- 50 kg	2	Explosive	Solid
53	5 Nitro Benzimidazole	Bag- 50 kg	3	Irritant	Solid
54	p-nitrobenzyl acetate	Bag- 50 kg	2	Corrosive	Solid
55	Ammonia Gas	Cylinder -50 kg	2	Corrosive	Gas
56	HCL gas	Cylinder - 9 kg	3	Toxic, Corrosive	Gas

i) Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	Separate Isolated Storage Area will be constructed as per explosiv requirement and separation distance will be maintained, accordingly. • Workers and Operators handling such materials will be trained fo (fire/explosion, health, and chemical reactivity) associated with them. Lightening arrestor will be provided on the top of tallest structure. • NFPA label (hazard identification) capacity and content will be displayed barrels. • Every time it will be ensured that barrels are cleaned and no chemicals a to avoid mixing and causing explosion or any mishap • While decanting chemicals proper earthing arrangement will be ensured charge • Good housekeeping will be maintained. • Work Instructions shall be prepared and followed. • Proper ventilation will be provided in storage room. • Proper label and identification board /stickers will be provided in the stora • Area shall be marked as “Hazardous Chemical Storage”, “No Smoki Restricted”. No cell phones • MSDS of chemicals stored will be available in storage area
CORROSIVE&	Preventing or minimizing contact between corrosive substances and

CHEMICALS	membranes and eyes. • Corrosive substances should not be allowed to come in contact with materia react. • All the containers, pipes, apparatus, installations and structures us manufacture, storage, transport or use of these substances may be protected coatings, impervious to and unaffected by corrosives. • All containers or should be clearly labelled to indicate their contents and should bear the danger corrosives. • Adequate ventilation and exhaust arrangement whether general or local, 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 i follow safe practices such as (a) Prolonged washing with water (b) contaminated clothing (c) Seeking immediate medical help. • Safety showers and eye washers is provided.
TOXIC CHEMICALS	Ventilation must be sufficient to prevent accumulation of vapor pockets. All fa should be outside the storage area. • Self-breathing apparatus, gas mask and 'emergency kits' should be located a points under working condition and to be easily accessible in the event of emerg • Appropriate minimum safety distances as stipulated in the above mentioned to be maintained from buildings or group of buildings or adjacent property
REACTIVE CHEMICALS	Not applicable. There will be no any reactive chemicals

- **Applicability of PESO:** Unit will apply PESO after EC grant.

Comments:

- Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The Petroleum and Explosives Safety Organization (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.

H-2	**Types of hazardous Processes involved and its safety measures:**

As example given below.

Types of process	Safety measures including Automation
Amination	Integrated DCS (Distributed Control System) base process controls and operation of plant will be installed. • Valve, pipeline will be checked and maintain, in good condition. • Sprinkler system provision will be made in storage area. • Ammonia leakage identification will be done by HCL torch.

	• Ammonia leakage control Kit will be kept available at store. • Hazard identification, control measures in case of leakage and first Aid procedure will be prepared and displayed at handling locations. • Sprinkler point and Eyewash/ Safety shower will be provided near Ammonia header point. • 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 storage area. • Spark arrester will be installed on all vehicles inside the premises. • SBA set, Canister mask and airline mask will be provided. • Earthing& bonding will be provided
Bromination	All end nozzles in bromine charging hose will be blinded after use. • Charging of bromine will be done when reactor is in vacuum and POP coated funnel will be used during charging. • Excess bromine will be neutralize or discharged by adding Sodium Bisulfite. • Make sure the absorber unit (scrubber) is working and capable of handling vented bromine fumes. • Structure of bromine bottle area will be periodically inspected to ensure stability. • Personnel employed with bromine handling are made aware of potential hazards of bromine and of appropriate first-aid measure. • Exhaust hood connected with alkali scrubber and ventilation system will be available. Exhaust hood has been provided to maintain to concentration of bromine vapor well below PEL. • Work instructions for bromine charging will be displayed in local language/Hindi. • Safety shower and eye-wash fountains will be available nearby handling and charging facility. The location of such item will be inspected and tested at fixed interval to make sure that it is in good condition. • Hypo solution, lime water slurry or soda ash solutions will be available so as to pour them over a liquid bromine spill on the floor. The bromine and neutralizer is then washed to the sump with cold water hose.

	• Personal Hygiene – the following personal protective equipment will be used
Chlorination	Scrubber provided. Required PPEs provided to all employees. Full body protection will be provided to operator. Caution note and emergency first aid will be displayed and train for the same to all employees. Safety shower and eye wash will be provided in storage area and plant area. Dyke wall will be provided to storage area.
Hydrogenation	FLP type area will be provided. • Total enclosed process system. • Instrument & Plant Air System. • 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 and Nitrogen Cylinder bank away from the auto clave reactor • PRV station with shut off valve, safety valve provision will be made for hydrogenation reactionsafety • Before Hydrogen Gas charging in to reactor and after completion of reaction • Nitrogen flushing will be done. • Flame arrestor will be provided on vent line of reactor and it will be extended up to roof level • Open well ventilated and fragile roofs will be provided to on reactor. • Safe Catalyst charging method will be adopted. • SOP will be prepared and operators will be trained for the same. • Static earthing and electric earthing (Double) provided. • Reactor vent extended outside the process area and flame arrestor provided on venline. • Dumping vessel arrangement will be made. • Dumpers for static earthing on pipeline flanges of flammable chemical will be provided
Nitration	• Safety valve & Rupture disk shall be provided on reactors. • Flushing water (chilled water / ice quenching) to control the runaway reaction. • Provision of dumping vessel for the contents of the Nitrator. • Total close process will be adopted (from storage tank to measured vessel & thento reactor) for Nitric Acid charging

	• SOP will be displayed for safe charging of Nitric acid for nitration process • Required PPEs like full body protection PVC apron, • Hand gloves, gumboot, Respiratory mask etc. • will be provided to operator at time of nitric acid charging. • Make sure the absorber unit (two stage Alkali scrubber) will be working andcapable of handling vented NO2 fumes. • Neutralizing agent will be kept ready for tackle any emergency spillage. • Safety Shower and eye wash will be provided near process area. • Caution note and emergency first aid will be displayed and train for the same toall employees. • First Aid Boxes will be available in process area. • Prevention measures for runaway reaction of nitration reaction. • Instrumentation control • Rotameter • Level alarms • TIC of jacket as well as the reactor • Emergency control measures • Standby Pump For Cooling Water / Brine Circulation
Sulphonation	Integrated DCS (Distributed Control System) base process controls and operation of plant will be installed. • 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. • Make sure the absorber unit (two stage Alkali scrubber) is working and capable of handling vented SO2 / HCl fumes. • 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. • Total close process will be adopted for Thionyl chloride 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. • 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 spilled material. • Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.

H-3	**Details of Fire Load Calculation**

Total Plot Area:	7500 Sq. m
Area utilized for plant activity:	2477.72 Sq. m
Area utilized for Hazardous Chemicals Storage:	50 Sq. m
Number of Floors:	G+2
Water requirement for firefighting in KLD:	--
Water storage tank provided for firefighting in KLD:	200 KL
Details of Hydrant Pumps:	Trailer Pump, Jockey Pump
Nearest Fire Station :	DPMC fire station:-3 KM
Applicability of Off Site Emergency Plan:	N.A

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.

H-4	**Details of Fire NOC/Certificate:**

Unit will obtain Fire NOC after receipt of EC and before getting CTO.

H-5	**Details of Occupational Health Centre (OHC):**

-

Number of permanent Employee:	30
Number of Contractual person/Labour:	25
Area provided for OHC:	15
Number of First Aid Boxes:	10
Nearest General Hospital:	Jhagadia Primary Health Centre
Name of Antidotes to be store in plant:	---

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Comments

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

H-6	Details of Emergency measures proposed and preparedness action for chemicals and fire explosion etc.

M/s. Daxesh Petrochem Pvt. Ltd., has considered fire prevention measures at the project planning stage to avoid any outbreak of fire. But the chances of outbreak of fire cannot be totally ignored. Hence to tackle such a situation, company has planned to develop a well- resourced and adequate fire protection system/fire fighting network. The same facilities shall be updated to cover the expansion facilities also, if required.

Other details on Fire Control Plan and same shall be updated for expansion facility if required:

- Fire fighting facilities comprising has been installed as per the GFR and TAC guidelines, the same shall be updated after the expansion of new facilities, if required.
- Fire Extinguishers like ABC , CO_2 will be provided as per the GFR and TAC guidelines, at conspicuous locations.
- Other Fire fighting facilities like, fire hose boxes with hose pipe, sand buckets, fire blanket etc. shall be provided within the company at conspicuous locations.
- Working staff is given training to operate ABC and CO_2 extinguishers.
- Emergency Action Team members are working round the clock in all shifts.
- First aid is available round the clock in all shifts of all plants / sections.
- DG Set is available for power backup

Details of installed Fire Extinguishers.		
Type	**:**	**Total**
ABC- 5.0 Kg	:	25
CO2 - 5.0 Kg	:	20
SAND BUCKET	:	40
FOAM -9 Lit. 15 Nos. & 45 Lit – 10 Nos.	:	25
DCP – 5 Kg	:	20
TOTAL	**:**	**130**

I	Details of Membership for Common Facility:

Sr. No.	Membership for Common Facility	Membership Certificate issuing agency Date of Issue and validity of membership
01	CETP	--
02	TSDF site	BEIL/ANK/2022, Dated – 03/03/2022
03	Common Hazardous Waste Incineration Facility	BEIL/ANK/2022, Dated – 03/03/2022
04	Common Spray Drying Facility	--

05	Common MEE Facility	--
06	Common Conveyance System	--
07	PESO permission	--
08	FIRE permission	--
09	Health Certificate	--

J **Reduce / Reuse / Recycle measures adopted.**

(e) Reduce

Sr. No.	Item	Quantity	% percentage
--			

(f) Reuse

Sr. No.	Item	Quantity	% percentage
--			

(c) Recycle

Sr. No.	Item	Quantity	% percentage
1	RO Permeate	108 KLD	56.54

K **EMP Details**

Sr. No	Unit	Detail	Capital Cost (Rs. In Lakhs/Crores)	Total Recurring Cost per Month (Rs. In Lakhs/ Crores per Annum)
1	Wastewater	Installation of Effluent treatment plant, RO & MEE	100	900
2	Air	Cost of stack installation, Scrubber & APCM	20	6
3	Hazardous Management	Membership cost & Disposal cost to TSDF/CHWIF	20	85
4.	Fire & Safety	PPE, fire extinguishers, First Aid Kit, Smoke detector, Ventilation, Fire Hydrant System, Fire Proximity Suit, Water Sprinkler, Scrubber, DCS system and solvent recovery.	83	10
5	Green Belt Development	Plantation & Maintenance	5	1
6.	Occupational Health	First Aid Kit & Medical equipment	5	1
7.	Noise Control	Acoustic enclosure for Boiler, DG Set	1	0.2
8.	VOC Control & LDAR	Provision of Automation base system	1	0.2
9	Environment	Monitoring Equipment	1	6

	Monitoring Program (AWH)			
10	CER Activity	Unit will carried out CER Activities in limbet Village.	14	3
Total			**250**	**1012.4**

Comments:

- The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

L	**Details of CER -**

PP will be provide Solar Panel for power generation in Primary health centre in Limbet village.

14) DELIBRATION AND RECOMMENDATION:

"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:

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. 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.
3. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
4. 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.
5. 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.
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. **Safety & Health:**
   a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals.
   b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
   c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
   d) 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.
   e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
   f) 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.
   g) 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.
   h) 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.
   i) 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.

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

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

l) Unit shall provide effective fire hydrants, water monitors & foam application system at solvent storage area and unit shall provide adequate safety system such as water sprinklers, water curtains, foam pouring system etc. to restrict cascade fire emergency in solvent storage area.

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

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

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.

q) Unit shall Store Bromine Bottle in cool dry separate area, out of direct sunlight.

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

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

WATER

9. Total water requirement for the project shall not exceed 191 KLD. Unit shall reuse 108 KLD of treated effluent within premises. Hence, fresh water requirement shall not exceed 83 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
10. The industrial effluent generation from the project shall not exceed 106 KLD.
11. Management of Industrial effluent shall be as under:

✓ **Concentrated Stream (60 KLD):**

➢ 35 KLD effluent generated from process & scrubber and 25 KLD, RO reject shall be treated in MEE with Stripper & ATFD. 57 KLD, MEE condensate shall be further treated in ETP along with dilute stream.

✓ **Dilute stream (133 KLD):**

➢ 71 KLD effluent generated from process, utilities & washing, 5 KLD domestic effluent and 57 KLD, MEE condensate shall be treated in primary, secondary & tertiary ETP followed by RO. 108 KLD, RO permeate shall be reused within premises.

12. 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.
13. Complete Zero Liquid Discharge [ZLD] status shall be maintained all the time and there shall be no drainage connection from the premises.
14. Domestic wastewater generation shall not exceed 5 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 flushing and gardening & plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.

15. 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.
16. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
17. Unit shall provide ETP, RO, MEE & STP with adequate capacity.
18. The unit shall provide metering facility at the inlet and outlet of ETP, RO, MEE & STP and maintain records for the same.
19. Proper logbooks of ETP, RO, MEE & STP; 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:

20. Unit shall not exceed fuel consumption for boilers, TFH and D G Sets as per the point no. E-2 as mentioned above.
21. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
22. Unit shall provide adequate APCM with process gas generation sources as the point no**. E-3** as mentioned above.
23. PP shall use approved fuels only as fuel in boilers.
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 indicativeguidelines shall also be followed to reducethe fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly toreducethe fugitive emission during vehicular movement.
    - Air borne dust shall becontrolled 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. Forcontrol of fugitive emission, VOCs, following steps shall be followed :
    - ✓ Closed handling and charging system shall be provided for chemicals.
    - ✓ Reflux condenser shall be provided over Reactors / Vessels.
    - ✓ Pumps shall be provided with mechanical seals toprevent leakages.
    - ✓ 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. Regular monitoring of ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, NOx, HCl, Cl_2, HBr, Br_2, NH_3 and VOCs shall be carried out in the impactzoneand 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 toexceed the prescribed limits, necessary additionalcontrol 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. F-1 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. 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.
33. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
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 (2500 Sq. m i.e. 33.2% of the total plot area) as per the undertaking 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 Rs 14 Lakhs [Solar Panel for power generation in Primary health centre in Limbet village] 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. Jyoti Om Chemical Research Centre 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.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

38. 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.
39. 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.
40. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
41. 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.
42. 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.
43. 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.
44. 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/IND3/78166/2021	**M/s. Ecofine Colourchem Pvt. Ltd.** Plot No. DP-44 DP-147, Saykha Industrial Estate, GIDC Saykha, Village: Saykha, Taluka: Vagra, District: Bharuch, Gujarat – 392140	EC

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

Project status: **Expansion**

1) Details of Application:

1.1. Type of application:	EC-Expansion
1.2. Proposal no.	SIA/GJ/IND3/78166/2021
1.3. Category of Project :	5 (f) – B1
1.4. Date of application : (Online accepted by SEAC)	08.09.2022
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP-EIA Report
1.6. TOR No. & Date :	SIA/GJ/222211/2021 dated 22/11/2021
1.7. Technical expert / Environmental Consultant :	M/s. ECOgreen ENVIRO SERVICES
1.8. SEAC Meeting No. and Date:	512nd SEAC Meeting dated: 01.11.2022
1.9. ADS vide letter dated :	--
1.10. Reply Submitted by PP dated:	--
1.11. Revised Consideration SEAC Meeting No. and Date:	--

2) This is an existing project proposed for expansion of manufacturing of synthetic organic chemicals (dyes and dyes intermediates) as mentioned below:

Grp No.	Sr No.	Products	CAS no. /CI no	Qty (MT/M)			End use
				Existing	Proposed	Total	
A	**Formulation & Standardization Acrylic Dyes:- Some representative Dyes**			400	0	400	Colouring of wool and acrylic fibres
	1	Golden Yellow **And/Or**	--				
	2	Blue **And/Or**	--				
	3	Violet Red **And/Or**	--				
	4	Yellow **And/Or**	--				
	5	Orange **And/Or** and many other similar dyes	--				
B	**Formulation & Standardization Azo & Anthraquinne Disperse Dyes: Some Representative**						Colouring of Polyester fabrics / Mix fabrics
	6	Disperse Orange :1,3,25,31,44& 228 **And/Or**	11080, 11005, 61968-38-5				

	7	Disperse Yellow:1,3,7,23,27,42,54,64, 114,119 & 221 **And/O**r	11855, 26090, 26070, 61968-66-9, 57308-41-5				
	8	Disperse Red:1,5,13,17,19,50,54,73,7 4,167,202 & 343 **And/Or**	11110, 11215, 11115, 11210, 11130, 11226, 11116, 99031-78-6				
	9	Disperse Blue: 3,14,60,79,94 & 291 **And/Or**	61505, 61500,61104, 11345, 12235-96-0,56548-64-2				
	10	Disperse Violet: 26,28,33,57,63,93 &99 **And/Or**	61102, 52697-38-8				
	11	Disperse Brown:1 & 26 **And/Or** and many other similar dyes	23355-64-8				
C	**Mixture made Out of Above Products: Some Representative Dyes**						Colouring of Polyester fabrics / Mix fabrics
	12	Dispersed Green 2G **And/Or**	--				
	13	Dispersed Green 2B **And/Or**	--				
	14	Dispersed Brown 3REL **And/Or**	52623-75-3				
	15	Dispersed Brown 3BS **And/Or**	--				
	16	Dispersed Yellow 5RX **And/Or**	--				
	17	Dispersed Black RL **And/Or**	--				
	18	Dispersed Black CCR **And/Or** and many other similar dyes	--				
D	1	Solvent Blue 35	17354-14-2	0.00	50.00	50.00	Textile, Plastic and Inks
	2	Solvent Blue 104	116-75-6				
	3	Solvent Blue 122	67905-17-3				
	4	Solvent Green 03	128-80-3				
	5	Solvent Orange 60	6925-69-5				
	6	Solvent Orange 86	81-64-1				
	7	Solvent Red 52	81-39-0				
	8	Solvent Red 135	20749-68-2				
	9	Solvent Red 168	71832-19-4				
	10	Solvent Red 195	164251-88-1				

	11	Solvent Red 207	15958-68-6				
	12	Solvent Violet 13	81-48-1				
	13	Solvent Violet 14	67577-84-8				
	14	Solvent Yellow 33	8003-22-3				
	15	Solvent Yellow 157	27908-75-4				
	16	Solvent Yellow 163	13676-91-0				
	17	Solvent Black 27	12237-22-8				
	18	Solvent Orange 58	71775-93-4				
	19	Solvent Red 127	61969-48-0				
	20	Solvent Red 160	69899-68-9				
	21	Solvent Yellow 82	12227-67-7				
	22	Solvent Yellow 21	5601-29-6				
	23	Solvent Blue 98	71819-49-3				
	24	Solvent Blue 128	18038-99-8				
	25	Solvent Green 33	10671-57-8				
	26	Solvent Red 19-E	6368-72-5				
	27	Solvent Red 24	85-83-6				
	28	Solvent Yellow 107	67990-27-6				
	29	Solvent Yellow 124	34432-92-3				
	30	Pigment Blue 60	81-77-6				
E	**Acid dyes (Azo)**						Colouring of wool / Nylon / Leather
	31	Acid Yellow 11	6359-82-6	0.00	100.00	100.0	
	32	Acid Yellow 17	6359-98-4				
	33	Acid Yellow 24	10142-54-8				
	34	Acid Yellow 29	6359-91-7				
	35	Acid Yellow 42	6375-55-9				
	36	Acid Yellow 54	10127-05-6				
	37	Acid Yellow 59	5601-29-6				
	38	Acid Yellow 99	10343-58-				
	39	Acid Orange 3	6373-74-6				
	40	Acid Orange 19	3058-98-8				
	41	Acid Orange 51	8003-88-1				
	42	Acid Orange 67	12220-06-3				
	43	Acid Orange 148	83335-08-4				
	44	Acid Red 1	3734-67-6				
	45	Acid Red 37	02-07-6360				
	46	Acid Red 57	17053				
	47	Acid Red 114	23653				

	48	Acid Red 119	12220-20-1				
	49	Acid Red 138	18073				
	50	Acid Red 249	18134				
	51	Acid Blue 92	13390				
	52	Acid Blue 113	26360				
	53	Acid Black 10	--				
	54	Acid Black 210	99576-15-5				
	55	Acid Black 60	18165				
	56	Acid Violet 7	18055				
	57	Acid Violet 43	60730				
	58	Acid Violet 58	16260				
	59	Acid Violet 78	12205				
	Acid Dyes (Anthraquinones/ Condensed)						
	60	Acid Green 25	61570				
	61	Acid Green 27	61580				
	62	Acid Violet 41	62020				
	63	Acid Violet 80	25420				
	64	Acid Blue 25	62055				
	65	Acid Blue 45	63010				
	66	Acid Blue 80	61585				
F	67	Acid Blue 129	62058	0.00	50.00	50.00	
	68	Acid Violet 17	4129-84-4				
	69	Acid Blue 1	116-95-0				
	70	Acid Blue 15	5863-46-7				
	71	Acid Violet 49	1694-09-3				
	72	Acid Blue 7	3846 - 30- 4				
	73	Acid Green 9	4857-81-2				
	74	Acid Blue 9	3844-45-9				
	75	Acid Red 52	3520-42-1				
	Basic Dyes						Colouring of paper / acrylics
	76	Basic Yellow 2	41000				
	77	Basic Yellow 51	83949-75-1				
	78	Basic Yellow 28	54060-92-3				
	79	Basic Yellow 40	35869-60-4				
G	80	Basic Yellow 13	12217-50-4				
	81	Basic Yellow 29	39279-59-9	0.00	400.00	400.00	
	82	Basic Yellow 51	83949-75-1				
	83	Basic Orange 2	11270				
	84	Basic Orange 14	10127-02-3				
	85	Basic Orange 22	4657-00-5				

	86	Basic Red 1	989-38-8				
	87	Basic Red 2	477-73-6				
	88	Basic Red 9	569-61-9				
	89	Basic Red 18	25198-22-5				
	90	Basic Red 13	3648-36-0				
	91	Basic Red 46	12221-69-1				
	92	Basic Red 15	12217-49-5				
	93	Basic Blue 7	2390-60-5				
	94	Basic Blue 9	52015				
	95	Basic Blue 11	2185-86-6				
	96	Basic Blue 17	92-32-9				
	97	Basic Blue 26	53126				
	98	Basic Blue 27	--				
	99	Basic Blue 54	15000-59-6				
	100	Basic Blue 3	33203-82-6				
	101	Basic Blue 41	12270-13-2				
	102	Basic Blue 159	52435-14-0				
	103	Basic Violet 1	42535				
	104	Basic Violet 3	42555				
	105	Basic Violet 2	42520				
	106	Basic Violet 10	45170				
	107	Basic Violet 11	2390-63-8				
	108	Basic Violet 16	64346-30-1				
	109	Basic Violet 7	6441-82-3				
	110	Basic Violet 28	12221-74-8				
	111	Basic Green 1	42040				
	112	Basic Green 4	42000				
	113	Basic Green 5	224967-52-6				
	114	Basic Brown 1	10114-58-6				
	115	Basic Brown 4	8005-78-5				
H	**Disperse Dyes (Azo)**						Colouring of Polyester fabrics / Mix
	116	Disperse Yellow 3	11855				
	117	Disperse Yellow 5	12790				
	118	Disperse Yellow 7	26090				
	119	Disperse Yellow 10	12795	0.00	400.00	400.00	
	120	Disperse Yellow 23	26070				
	121	Disperse Yellow 56	54077-16-6				
	122	Disperse Yellow 103	61968-65-8				

123	Disperse Yellow 104	12270-42-7				
124	Disperse Yellow 109	484220				
125	Disperse Yellow 163	67923-43-7				
126	Disperse Yellow 229	136959-03-0				
127	Disperse Yellow 231	143067-35-0				
128	Disperse Yellow 211	86836-02-4				
129	Disperse Yellow 119	57308-41-5				
130	Disperse Yellow 114.1	61968-66-9				
131	Disperse Orange 1	11080				
132	Disperse Orange 3	11005				
133	Disperse Orange 5	11100				
134	Disperse Orange 7	11240				
135	Disperse Orange 13	26080				
136	Disperse Orange 29	26070				
137	Disperse Orange 30	11119				
138	Disperse Orange 31	61968-38-5				
139	Disperse Orange 37	11132				
140	Disperse Orange 42	12223-35-5				
141	Disperse Orange 57	12223-32-4				
142	Disperse Orange 61	12270-45-0				
143	Disperse Orange 73	40690-89-9				
144	Disperse Orange 288	96662-24-7				
145	Disperse Orange 25	31482-56-1				
146	Disperse Red 1	11110				
147	Disperse Red 5	11215				
148	Disperse Red 13	11115				
149	Disperse Red 16	11225				
150	Disperse Red 17	11210				
151	Disperse Red 19	11130				
152	Disperse Red 41	11040				
153	Disperse Red 50	11226				
154	Disperse Red 52	78564-86-0				
155	Disperse Red 72	11114				
156	Disperse Red 73	11116				
157	Disperse Red 74	61703-11-5				
158	Disperse Red 82	11140				
159	Disperse Red 114	--				
160	Disperse Red 118	11152				
161	Disperse Red 152	78564-86-0				
162	Disperse Red 153	78564-87-1				
163	Disperse Red 177	11122				

	164	Disperse Red 279	72827-94-2				
	165	Disperse Red 311	77907-28-9				
	166	Disperse Red 338	87714-25-8				
	167	Disperse Red 343	99031-78-6				
	168	Disperse Red 362	158129-94-3				
	169	Disperse Brown 1	23355-64-8				
	170	Disperse Brown 3	11190				
	171	Disperse Brown 19	71872-49-6				
	172	Disperse Violet 7	11410				
	173	Disperse Violet 24	11200				
	174	Disperse Violet 58	11340				
	175	Disperse Violet 43	12223-81-3				
	176	Disperse Violet 77	77538-14-8				
	177	Disperse Violet 93	52697-38-8				
	178	Disperse Blue 79	11345				
	179	Disperse Blue 85	11370				
	180	Disperse Blue 90	12222-88-7				
	181	Disperse Blue 94	12235-96-0				
	182	Disperse Blue 106	12223-01-7				
	183	Disperse Blue 148	11124				
	184	Disperse Blue 183	11078				
	185	Disperse Blue 281	22578-86-5				
	186	Disperse Blue 284	71872-43-0				
	187	Disperse Blue 291	56548-64-2				
	188	Disperse Blue 165	41642-51-7				
	189	Disperse Blue 366	84870-65-5				
	190	Disperse Blue 183.1	2309-94-6				
	191	Disperse Black R Conc.	--				
	192	Disperse Black EXSF	70956-30-8				
	193	Disperse Black MIX	--				
	194	Disperse Blue EXSF	118-55-8				
	Disperse Dyes (Anthraquinones /Condensed)						
	195	Disperse Yellow 1	119-15-3				
	196	Disperse Yellow 4	12770				
	197	Disperse Yellow 6	10322				
I	198	Disperse Yellow 9	10375	0.00	150.00	150.0	
	199	Disperse Yellow 14	10340				
	200	Disperse Yellow 22	23008-56-2				
	201	Disperse Yellow 33	10337				
	202	Disperse Yellow 42	10338				
	203	Disperse Yellow 54	47020				

	204	Disperse Yellow 64	47023				
	205	Disperse Yellow 82	12239-58-6				
	206	Disperse Yellow 86	10353				
	207	Disperse Yellow 90	48007				
	208	Disperse Yellow 124	61968-69-2				
	209	Disperse Yellow 184	71838-87-4				
	210	Disperse Yellow 232	10350				
	211	Disperse Orange 15	62015				
	212	Disperse Red 11	60710				
	213	Disperse Red 15	60759				
	214	Disperse Red 53	60757				
	215	Disperse Red 55	60756				
	216	Disperse Red 60	55165				
	217	Disperse Red 86	62175				
	218	Disperse Red 277	70294-19-8				
	219	Disperse Violet 1	61100				
	220	Disperse Violet8	62030				
	221	Disperse Violet 17	60712				
	222	Disperse Violet 26	62025				
	223	Disperse Violet 28	61102				
	224	Disperse Violet 31	62025				
	225	Disperse Blue 3	61505				
	226	Disperse Blue 14	61500				
	227	Disperse Blue 26	63305				
	228	Disperse Blue 60	61104				
	229	Disperse Blue 87	12222-85-4				
	230	Disperse Blue 354	104137-27-1				
J	**Reactive Dyes (Azo)**						Dye printing of cotton
	231	Reactive Yellow 42	12226-63-0				
	232	Reactive Yellow 44	12270-91-6				
	233	Reactive Yellow 81	59112-78-6				
	234	Reactive Yellow 84	61951-85-7				
	235	Reactive Yellow 135	24925				
	236	Reactive Yellow 145	93050-80-7				
	237	Reactive Orange 4	18260				
	238	Reactive Orange 13	18270	0.00	100.00	100.0	
	239	Reactive Orange 16	17757				
	240	Reactive Orange 122	12220-12-1				
	241	Reactive Red 35	12226-12-9				
	242	Reactive Red 141	61931-52-0				
	243	Reactive Red 152	71870-80-5				
	244	Reactive Red 195	93050-79-4				
	245	Reactive Red 198	18221				

	246	Reactive Blue 13	12236-84-9				
	247	Reactive Blue 20	12225-40-0				
	248	Reactive Blue 40	12225-54-6				
	249	Reactive Blue 109	61951-76-6				
	250	Reactive Blue 171	77907-32-5				
	251	Reactive Black 5	14095-24-8				
	252	Reactive Black WNN	17095-24-8				
	Reactive Dyes (Anthraquinones/ Condensed)						
K	253	Reactive Blue 4	61205	0.00	50.00	50.00	
	254	Reactive Blue 5	61210				
	255	Reactive Blue 19	61200				
	256	Reactive Blue 104	61951-74-4				
L	257	Auramine Orange	2465-27-2	0.00	50.00	50.00	
	258	Malelite Green	2437-29-8				
	259	Methyl Violet	8004-87-3				
M	**Intermediates**			0.00	800.00	800.0	Speciality chemicals
	260	N-Cyano ethyl-N-ethyl aniline	148-87-8				
	261	N-Hydroxyethyl-N-Ethyl Aniline	122-98-5				
	262	N-methyl-N-benzyl aniline	614-30-2				
	263	2-Cyano-6 Bromo PNA	827-94-1				
	264	6-Bromo 2,4 dinitroaniline	1817-73-8				
	265	2,6 dibromo P.N.A	827-94-1				
	266	2,6 dichloro P.N.A	99-30-9				
	267	2,6 Dibromo P-Toluidine	1435-53-6				
	268	N,N-Diethyl-M-Amino Acetanilide	6375-46-8				
	269	N,N-Diethyl-M-Amino Propionamide	34105-56-1				
	270	fischer's base	118-12-7				
	271	Ethanaminium, 2-[N-ethyl,N-phenyl]amino-N,N,N-trimethyl- chloride	92-98-8				
	272	6-Chloro 2,4 dinitro aniline	3531-19-9				
	273	fischer's aldehyde	84-83-3				
	274	4-diethylamino-2-hydroxybenzaldehyde (4-diethylamino-salicylicaldehyde)	17754-90-4				
	275	4-(N-methyl-n-Dihydroxy ethyl) amino benzaldehyde	487-69-4				
	276	4-(N-Methyl-N-Dichloroehtyl)Amino Benzaldehyde	1201-91-8				
	277	4-(NN Dimethyl Amino Benzaldehyde)	100-10-7				
	278	4-diethylamino-benzaldehyde	120-21-8				

	279	m-[N,N-(diethyl)amino]phenyl-β-hydropropyl ether	35293-35-7				
	280	N-methyl-N-(β-hydroethyl)aniline	93-90-3				
	281	4-[(N-methyl-N-[β-(cyano)ethyl]amino)benzaldehyde	119-97-1				
	282	4-[(N-methyl-N-[β-(chloro)ethyl]amino)benzaldehyde	119-97-1				
	283	3-amino-1,2,4-triazole	61-82-5				
	284	1 Amino Anthraquinone	82-45-1				
	285	Anthraquinone	84-65-1				
	286	1-Sulfo Anthraquinone (K-Salt)	82-49-5				
	287	Quinizirine	81-64-1				
	288	K-Acid	118-03-6				
	289	PNTOSA (4-Nitrotoluene-2-sulfonic Acid)	121-03-9				
	290	Diamino stilbene sulfuric Acid	81-11-8				
	291	DASPA	532-32-1				
	292	Amino Methox Amide	17481-27-5				
	293	Schaffers Acid	93-01-6				
	294	Bromamine Acid	116-81-4				
	295	2,3,3 Indoline	1640-39-7				
	296	1-4 Benzimidazole	84946-20-3				
	297	2-acetoAcetate Methyl Ester	105-45-3				
	298	1H-benzimidazole-2-acetic acid, methylester	49672-05-1				
	299	M Amino Acetanilide	102-28-3				
	300	M Amino Propionamide	89953				
	301	Ethyl Pyridone	28141-13-1				
	302	Butyl Pyridone	39108-47-9				
	303	Methyl Pyridone	4241-27-4				
	304	N (3, Propoxy Propyl) Pyridone	92-64-8				
N	305	NMJ Acid	22345-43-6	0	20	20	Dyes and Dyes Intermediate
	306	Sulfo J Acid	40492-14-6				
	307	Sulfotobias Acid	117-62-4				
O	**formulation**			0	350	350	Colouring of Polyester fabrics / Mix fabrics
	308	Black EXSF	20721-50-0				
	309	Black 2RC	20721-50-0				
	310	Black R Conc	1333-86-4				
	311	Navy Blue EXSF	36290-04-7				
	312	Navy Blue EMGR	118685-33-9				
P	313	Vat Dyes	379-75-1	0	50	50	
		Total		**400.00**	**2570.00**	**2970.0**	

3) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
4) The proposal was considered in the SEAC video conference meeting dated 01.11.2022.
5) Project proponent (PP) and their Technical Expert M/s Ecogreen Enviro Services 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) 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 December-2020 to February- 2021. Ambient Air Quality monitoring was carried out PM_{10}, $PM_{2.5}$, SOx, NOx, CO, VOC, HCl, HBr and NH_3 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 "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).
8) 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.
9) There is no Earlier EC. Unit has obtained only CTE, Hence CCR of Concerned authority is not applicable. PP submitted that there is no legal court case and public complaint against unit.
10) 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.
11) Compliance of the ToR found satisfactory.
12) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

<table>
<tr><th>Sr. no.</th><th>Particulars</th><th>Details</th></tr>
<tr><td>A</td><td>Total cost of Proposed Project
(Rs. in Crores):

<table>
<tr><th>Existing</th><th>Proposed</th><th>Total</th></tr>
<tr><td>36.42Crores</td><td>36.58 Crores</td><td>73 Crores</td></tr>
</table>

Break-up of proposed project Cost:</td><td></td></tr>
</table>

Details	Project Cost (Rs. In Crores)
Land	7.5
Building	
Machinery	16.00
Env. & Safety	12.24
Miscellaneous	0.84
Total	**36.58**

-

B	**Land / Plot ownership details:** Initially, The GIDC Corporation has industrial Plot no DP-44 + DP-147, area-30936.89 Sq. m. GIDC has allotted the plot to M/s. Ecofine Colourchem Pvt. Ltd. vide possession document no. GIDC/DEE (Road)/BRH/161, Dated: 14/05/2019.
B-1	**In case of outside GIDC only -**

Siting Criteria

Sr. no.	Environmental Sensitivity	Name/Specific details	Aerial Distance in Km
1	Habitat (Residential Area)	Not applicable. Unit is located in Saykha-GIDC.	Not applicable. Unit is located in Saykha-GIDC.
2	Eco sensitive zones	Not applicable. Unit is located in Saykha-GIDC.	Not applicable. Unit is located in Saykha-GIDC.
3	Wild life sanctuaries/National Parks	Not applicable. Unit is located in Saykha-GIDC.	Not applicable. Unit is located in Saykha-GIDC.
4	Water Bodies	Not applicable. Unit is located in Saykha-GIDC.	Not applicable. Unit is located in Saykha-GIDC.
	River	Not applicable. Unit is located in Saykha-GIDC.	Not applicable. Unit is located in Saykha-GIDC.
	Natural Nallah/Drain	Not applicable. Unit is located in Saykha-GIDC.	Not applicable. Unit is located in Saykha-GIDC.
	Lake/Pond/Wetlands	Not applicable. Unit is located in Saykha-	Not applicable. Unit is located in Saykha-GIDC.

			GIDC.	
		Water supply Tanks/Reservoirs	Not applicable. Unit is located in Saykha-GIDC.	Not applicable. Unit is located in Saykha-GIDC.
		Canal	Not applicable. Unit is located in Saykha-GIDC.	Not applicable. Unit is located in Saykha-GIDC.
	5	Protected Monuments/Heritage sites/Public Buildings etc.	Not applicable. Unit is located in Saykha-GIDC.	Not applicable. Unit is located in Saykha-GIDC.
	6	National/State Highway OR Express way	Not applicable. Unit is located in Saykha-GIDC.	Not applicable. Unit is located in Saykha-GIDC.
	7	Coastal Regulation Zone (CRZ) (In case of Coastal area projects)	Not applicable. Unit is located in Saykha-GIDC.	Not applicable. Unit is located in Saykha-GIDC.
	8.	Ground water table in meter	Not applicable. Unit is located in Saykha-GIDC.	Not applicable. Unit is located in Saykha-GIDC.
	9.	Railway Line	Not applicable. Unit is located in Saykha-GIDC.	Not applicable. Unit is located in Saykha-GIDC.
	10.	Air Port	Not applicable. Unit is located in Saykha-GIDC.	Not applicable. Unit is located in Saykha-GIDC.

B-2

Area adequacy

Area Adequacy table:

AREA ADEQUACY (ECOFINE) IN SQ. M.									
S. N.	**Particular**	**Qty. in MT/KL**	**Remark**	**Area required**	**Area proposed**	**GF**	**FF**	**SF**	**%**
1	Security cabin & Weighing Bridge	--	--	40	50	50	-	-	0.16

	Cabin								
2	Security cabin & Weighing Bridge Cabin	--	--	40	50	50			0.16
3	F.G	693 MT	1 week inventory	800	972	486	486	-	1.57
4	Raw Material	900 MT	1 week inventory	900	972	486	486	-	1.57
5	Tank storage (PESO)	145 KL (10 KL X 1, 20 KL X 6, 15 KL X 1)	At a time	260	420	420	-	-	1.36
6	Tank storage (Non-PESO)	200 KL (30 KL X 5 including one spare tank for oleum, 25 KL X 2)	At a time	325	570	570	-	-	1.84
7	Drum storage (Toxic)	72 KL (360 Nos.)	At a time	180	300	300	-	-	0.97
8	Drum storage (Flammable)	10 KL (50Nos.)	At a time	25	50	50	-	-	0.16
9	Ammonia Gas Storage Area	1.2 M3 (60 kg X 20 Nos)	Gas Cylinder	20	50	50	-	-	0.16
10	Tonner storage (Chlorine gas)	4.5 M3 (0.9 X 5 Nos)	Chlorine Tonner	25	100	100	-	-	0.32
11	Ethylene Oxide	1 MT (47 Lit x 22 Nos)	Cylinder	22	50	50			0.16
12	Haz. waste storage area	800 MT	90 days inventory	450	500	500	-	-	1.62

	13	ETP	ETP (Primary), ETP (Primary + Secondary + Tertiary), MEE-1, MEE-2, RO, CETP Membership		750	800	800	-	-	2.59
	14	Plant building-1 (Dyes & Specialit y Chemic als)	100 MT	MT/day	1000	2160	720	720	720	2.33
	15	Plant building-2 (Dye Interme diates)			1000	2160	720	720	720	2.33
	16	Boiler Area	4 TPH (2 Nos.)	--	250	500	500	-	-	1.62
	17	Spray Dryer, Tray Dryer & HAG Area	Hot Air Generator 1 lac kcal/Hr each-6 Nos. & 2 lac kcal/Hr each -2 Nos., Spray Dryer-1000 Lit/hr each 4 Nos., Tray Dryer 400 Trays each 4 Nos.	--	750	2106	702	702	702	2.27
	18	Coal & Fly Ash Storage Area	300 MT Coal & 20 MT Fly Ash	1 week inventory	300	675	675	-	-	2.18
	19	Blendin g & Packing Area (Formul ation unit)	--	--	500	810	270	270	270	0.87

20	Utilities and Other	--	--	100	400	400			1.29
21	Admin + Lab	--	--	300	800	400	400		1.29
22	Road and Open Area	--	--	12392.89	12392.89	12392.89	-	-	40.0
23	OHC	OHC require area 16 sq. m.		16	16	35	-	-	0.11
24	Green Belt @ 33 %	33% of total Plot area 30936.9 sq. m.		10209.17	10210	10210	-	-	33.0
Total				**30655.1**	**37113.9**	**30936.89**	**3784**	**2412**	**100**

Hence, Area proposed is adequate as per area adequacy.

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.

B-3 **Green belt area**

	Existing	Proposed (Sq. meter)	Total (Sq. meter)
Area in Sq. meter	--	10210	10210
% of total area	--	33%	33%

Comments:

The condition shall be given that -

- The PP shall develop green belt (10210 Sq. m i.e. 33 % of the total plot area) as per the undertaking 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.

C **Employment generation**

	Existing	Proposed	Total	
	00	100	100	

-

D	**WATER**
D-1	**Source of Water Supply** ➢ GIDC Water supply Saykha GIDC water supply
	Comments: ➢ Prior permission from concerned authority shall be obtained for withdrawal of water.
D-2	**Water consumption (KLD)**

-

Category	Existing KLD	Proposed KLD	Total after Expansion KLD	Remarks
(D) Domestic	5	10	15	--
(E) Gardening	5	15	20	Treated water from STP (10.5 KLD) will be reused in Gardening
(F) Industrial				
Process	3	366.91	369.91	Worst case products: Grp D: Solvent Red 160. Grp E: Acid dyes (Azo) Grp F: Acid Dyes((Anthraquinones/Condensed), Grp G: Basic Dyes, Grp H: Disperse Dyes (Azo), Grp I: Disperse Dyes (Anthraquinones / Condensed), Grp J: Reactive Dyes (Azo), Grp K: Reactive Dyes (Anthraquinones/ Condensed), Grp: Malelite Green, Grp:M: Schaffers Acid, Grp N-Sulfo J Acid Condensate from MEE-2, MEE-1 and
Washing	4	16	20	

					RO Permeate (total 171.53 KLD) will be reused in Process and Washing.
	Boiler	0	192	192	Boiler Condensate (159 KLD) will be recycled in Boiler
	Cooling	2	50	52	Condensate from MEE-2, MEE-1 and RO Permeate (total 52 KLD) will be reused in Washing.
	Others	1	0.61	1.61	--
	Industrial Total	**10.0**	**625.52**	**635.52**	
	Grand Total (A+B+C)	**20.0**	**650.52**	**670.52**	

-

Comments:

- The water consumption above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.

D-3 **Waste water generation (KLD)**

-

Category	Existing KLD	Proposed KLD	Total after Expansion KLD	Remarks
(G) Domestic	3.5	7	10.5	Will be treated in STP & will be reused in Gardening
(H) Industrial				
Process	0	397.07	397.07	**Existing ZLD products. Worst case proposed products:** Grp D: Solvent Red 195, Grp E: Acid dyes (Azo) Grp F: Acid Dyes((Anthraquinones/ Condensed), Grp H: Disperse Dyes (Azo), Grp I: Disperse Dyes (Anthraquinones / Condensed), Grp J: Reactive Dyes (Azo), Grp k: Reactive Dyes

					(Anthraquinones/ Condensed), Grp: Malelite Green, Grp:M: 2,3,3 Indoline. Grp N-Sulfo J Acid High COD stream (11.51 KLD) will be treated in Primary ETP-2+MEE-2 and Low COD stream (385.56 KLD) will be treated in ETP-1+RO and RO reject will be treated in MEE-1. MEE condensate and RO permeate will be reused for industrial purpose within premises.
	Washing	4	16	20	will be treated in ETP-1+RO and RO reject will be treated in MEE-1. MEE condensate and RO permeate will be reused for industrial purpose within premises.
	Boiler	0	3.3	3.3	
	Cooling	0.2	4	4.2	
	Others	1.0	0.61	1.61	
	Total Industrial waste water	**5.20**	**420.98**	**426.18**	
	Grand Total (A+B)	**8.70**	**427.98**	**436.68**	

Note - We would like to inform you that Existing unit product is Non-EC i.e. Formulation & Standardization etc. hence, no generation of wastewater from existing products.

Comments:

- The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4	Break-up of waste water disposal & facility (For Domestic)

10.5 KLD Domestic Waste Water will be treated in STP & treated wastewater will be reused in gardening purpose within premises.

Comments:

- Domestic wastewater generation shall not exceed 10.5 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.

D-5	**Break-up of waste water disposal & facility (For Industrial)**

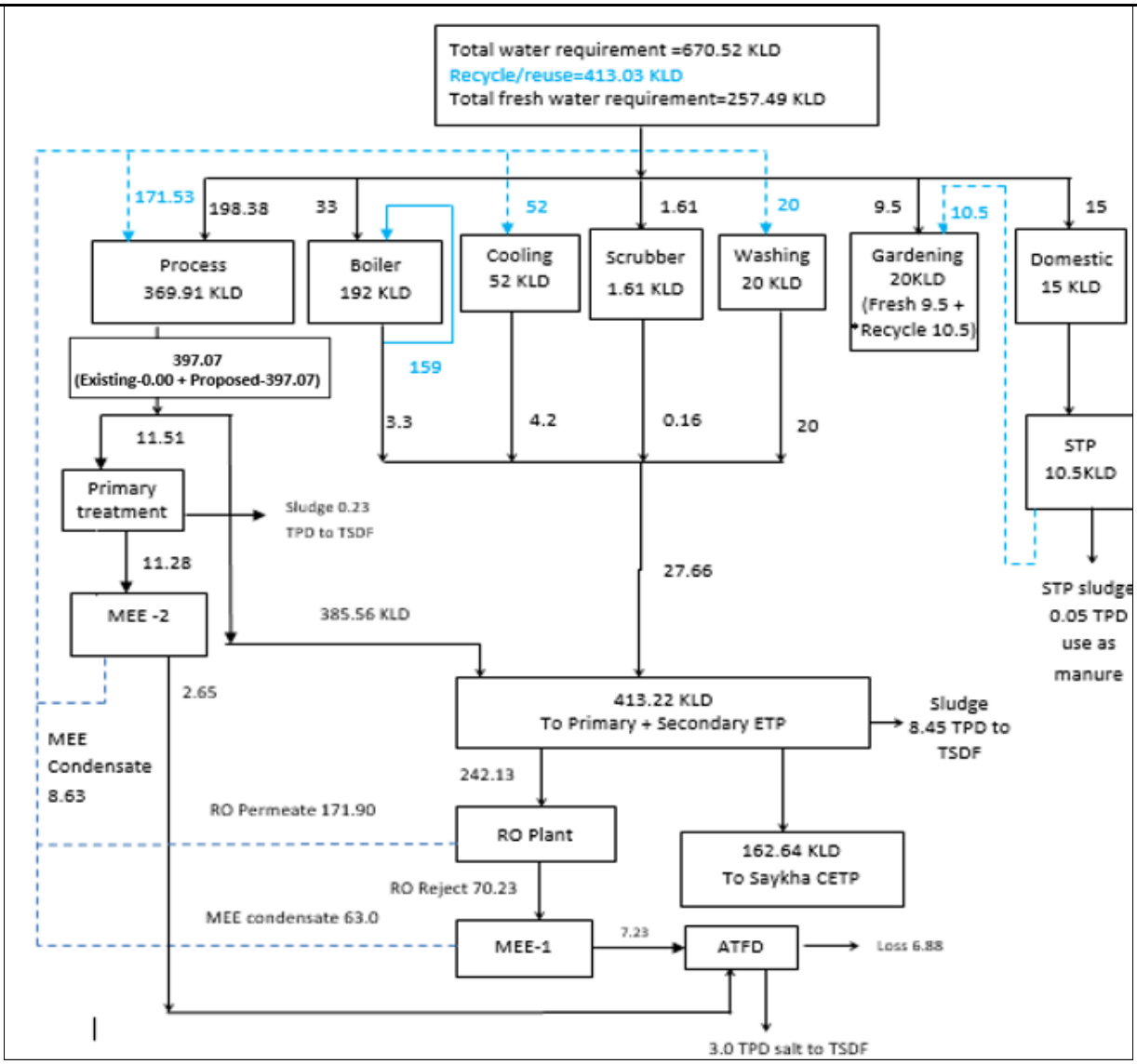
-

Sr. no.	Quantity KLD	Facility
1	413.22	Primary + Secondary ETP-1, Approx. 40 % treated wastewater will be sent to CETP Saykha & remaining 60 % treated wastewater will be sent to in-house RO. RO reject shall be sent to MEE-1. RO permeate and MEE-1 condensate will be reused within premises.
2	11.51	Primary ETP-2 + MEE-2 + MEE-2 condensate will be reused within premises.
3	1.45	Scrubbing solution will be reused OR sent to end users under Rule-9.
Total	**426.18**	

Comments:

1. Management of Industrial effluent shall be as under:
   - ✓ Concentrated Stream (11.51 KLD): 11.51 KLD effluent generated from process shall be treated in primary ETP followed by MEE-2 & ATFD. 8.63 KLD, MEE-2 condensate shall be resued within premises.
   - ✓ Dilute stream (414.67 KLD): 413.22 KLD effluent generated from process, utilities, scrubber and washing shall be treated in primary & secondary ETP. Out of 404.77 KLD treated effluent, 162.64 KLD shall be sent to CETP-Saykha and remaining 242.13 KLD shall be treated in RO.
   - ✓ 171.90 KLD, RO permeate shall be reused within premises and 70.23 KLD, RO reject shall be treated in MEE-1 & ATFD. 63 KLD, MEE-1 condensate shall be reused within premises.
   - ✓ 1.45 KLD effluent generated from scrubber shall be reused within premises or sold to authorized actual users having Rule-9 permission.

D-6	**Simplified water balance diagram**



Reuse – 63.0 KLD Condensate from MEE-1+ 171.90 KLD from RO + 8.63 KLD Condensate from MEE-2+ 10.5 KLD from of STP treated Water= 254.03 KLD
Recycle in Boiler – 159.0 KLD
Total Reuse / Recycle – 413.03 KLD
% Reuse / Recycle – 61.59 %

Note - We would like to inform you that Existing unit product is Non-EC i.e. Formulation, Blending, Repacking etc. hence, no generation of wastewater from existing products.

D-7 Summary

Summary of water requirement	**Quantity** KLD	Remarks
Total water requirement for the project **(A)**	670.52	--
Quantity to be **recycled (B)**	413.03	Treated Domestic waste water from STP will be reused in Gardening.

				Boiler Condensate will be recycled in Boiler. Condensate from MEE-2, MEE-1 and RO Permeate will be reused in Process, Cooling and Washing.
		Total **fresh water** requirement **(C)**	257.49	GIDC water Supply.
		Ensure **Total water requirement = Recycled water + Fresh water i.e. A = B + C**		

E	**AIR**
E-1	Power (Electricity) requirement :3000 KVA
E-2	**Flue gas emission details**

- **Existing**

Sr. no.	**Source of emission With Capacity**	**Stack Height (meter)**	**Type of Fuel**	**Quantity of Fuel MT/ Day**	**Type of emissions i.e. Air Pollutants**	**Air Pollution Control Measures (APCM)**
1	Hot Air generator-Nos. 6 (Cap of each is 1 lac Kcal/hr)	20	Bio-Coal/ Diesel	35 MT/Month Or 49500 Lit/Month	PM SO2 NOx	Dust Collector + Water Scrubber
2	D.G. Set (400 KWH) Stand by)	11	Diesel	500 Lit/Month		--

- **Total Proposed**

Sr. no.	**Source of emission With Capacity**	**Stack Height (meter)**	**Type of Fuel**	**Quantity of Fuel MT/ Day**	**Type of emissions i.e. Air Pollutants**	**Air Pollution Control Measures (APCM)**
1	Hot Air generator-Nos. 6 (Cap of each is 1 lac Kcal/hr) **(Existing)**	30	Bio-Coal/ Diesel	1.17 MT/Day Or 1650 Lit/Day	PM SO2 NOx	Multi Cyclone Separator, Bag filter & Alkali Scrubber
2	D.G. Set (400 KVA) Stand by **(Existing)**	11	Diesel	100 Lit/Hr		Adequate Stack Height and acoustic enclosure

	3	Boiler (4TPH) (2 Nos.) **(Proposed)**	30	Natural Gas OR Bio Coal OR Coal	12288 SCM/Day OR 36.4 MT/Day OR 25.0 MT/Day		Multi Cyclone Separator, Bag filter &Alkali Scrubber	
	4	Hot air generator- Nos. 2 (Cap of each is 2 lac kcal/hr.) **(Proposed)**	30	Natural Gas OR Bio Coal OR Coal	1041 SCM/DayOR 3.0 MT/Day OR 2.2 MT/Day		Multi Cyclone Separator, Bag filter & Alkali Scrubber	
	5	D.G Set (400 KVA) **(Proposed)**	11	Diesel	100.0 Lit/hr.		Adequate stack height and acoustic enclosure	

E-3 **Process gas**

- 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	Spray Dryer-4 Nos. (Cap: 1000 Lit/hr each)	Particulate Matter	11	Scrubber& Dust Collector
2	Tray Dryer Total no.4 each capacity 400 Trays		11	Scrubber& Dust Collector

- Total Proposed

Sr No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
1	Spray Dryer-4 Nos. (Cap: 1000 Lit/hr each) **(Existing)**	Particulate Matter	18.0	Scrubber & Dust Collector
2	Tray Dryer Total no.4 each capacity 400 Trays **(Existing)**		18.0	Scrubber & Dust Collector
3	Reaction Vessel (2-Cyano-6 Bromo PNA) **(Proposed)**	HBr	18.0	Two Stage Alkali Scrubber
4	Reaction Vessel (Auramine Orange, 1 Amino Anthraquinone)	NH3	18.0	Two Stage Water Scrubber

	(Proposed)			
5	Reaction Vessel (6-Bromo 2,4 dinitroaniline) **(Proposed)**	HCl	18.0	Two Stage Alkali Scrubber
6	Reaction Vessel (Quinizirine) **(Proposed)**	SO2	18.0	Two Stage Alkali Scrubber
7	Reaction vessel (Amino Methox Amide) **(Proposed)**	Nox	18.0	Two Stage Alkali Scrubber

E-4 **Fugitive emission details with its mitigation measures.**

Sr. No.	Source	Probable Pollutant Emission	Control Measures/ APCM	
1	Solvent 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	Solvent recovery system	Air pollutant (VOC)	iii) Solvent recovery system with steam condensation system. iv) Pumps & motors are Mechanical seal type.	
3	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.	
4	Flange joints of pipeline, pump & motors	Air pollutant (VOC)	v) Routine &periodic inspection to check leakage. vi) Preventive maintenance, Follow SOP for maintenance. vii) Pumps & motors will be mechanical seal type. viii) 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	Air pollutant	Feeding of liquid raw material will be carried out by closed pipeline and	

	reactor	(VOC)	mechanical seal pump.	
7	Loading /unloading at storage area	Air pollutant (VOC)	Unloading through pipeline to tank in a close system.	

Comments for E2, E3 & E4:

- The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Solvent management, VOC emissions etc.**
F-1	**Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.**

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	Solvent Blue 35	Methanol (Employed)	1.455	1.425	0.0029	0.0146	0.0126	0.03	98
		n-Butyl amine	0.513	0.497	0.0010	0.0051	0.0099	0.016	97
2	Solvent Blue 104	ODCB (Employed)	0.789	0.750	0.0019	0.0079	0.0292	0.04	95
		Methanol (Employed)	1.579	1.551	0.0039	0.0158	0.0083	0.03	98
3	Solvent Blue 122	Iso propyl alcohol	1.961	1.882	0.0048	0.0196	0.0546	0.08	96
4	Solvent Green 03	Butanol (Employed)	2.474	2.351	0.0060	0.0247	0.0923	0.12	95
5	Solvent Orange 60	O-Xylene (Employed)	2.667	2.539	0.0065	0.0267	0.0948	0.13	95
		Methanol (Employed)	5.297	5.191	0.0131	0.0530	0.0399	0.11	98
6	Solvent Orange 86	O-Xylene	2.714	2.581	0.0066	0.0271	0.0993	0.13	95
		Methanol	0.714	0.700	0.0018	0.0071	0.0051	0.01	98
7	Solvent Red 52	O-Xylene	2.234	2.122	0.0054	0.0223	0.0842	0.11	95

		Methanol	5.447	5.338	0.0135	0.0545	0.0411	0.11	98
8	Solvent Red 135	O-Xylene	2.080	1.976	0.0050	0.0208	0.0782	0.10	95
		Methanol	0.480	0.470	0.0012	0.0048	0.0040	0.01	98
9	Solvent Red 168	O-Xylene	0.857	0.814	0.0021	0.0086	0.0323	0.04	95
		Methanol	3.810	3.733	0.0094	0.0381	0.0295	0.08	98
10	Solvent Red 195	Methanol	0.420	0.411	0.0010	0.0042	0.0038	0.01	98
11	Solvent Red 207	O-xylene	0.977	0.928	0.0024	0.0098	0.0369	0.05	95
		Methanol	5.093	4.991	0.0126	0.0509	0.0385	0.10	98
12	Solvent Violet 13	Butanol	3.158	3.000	0.0077	0.0316	0.1188	0.16	95
13	Solvent Violet 14	ODCB	0.839	0.797	0.0020	0.0084	0.0316	0.04	95
		Methanol	2.581	2.529	0.0064	0.0258	0.0198	0.05	98
14	Solvent Yellow 33	ODCB	0.889	0.844	0.0022	0.0089	0.0340	0.05	95
		Methanol	2.222	2.178	0.0055	0.0222	0.0163	0.04	98
15	Solvent Yellow 157	O-Xyelene	2.473	2.349	0.0060	0.0247	0.0933	0.12	95
		Methanol	1.818	1.782	0.0045	0.0182	0.0133	0.04	98
16	Solvent Yellow 163	n-Butanol	2.946	2.805	0.0072	0.0295	0.1044	0.14	95
		O-Xylene	1.786	1.702	0.0043	0.0179	0.0618	0.08	95
23	Solvent Blue 98	Methanol	0.417	0.408	0.0010	0.0042	0.0038	0.01	98
		O-Xylene	0.563	0.535	0.0014	0.0056	0.0210	0.03	95
24	Solvent Blue 128	Butanol	2.353	2.235	0.0057	0.0235	0.0888	0.12	95
25	Solvent Green 33	O-Xylene	0.388	0.368	0.0009	0.0039	0.0152	0.02	95
27	Solvent Red 24	O-Xylene	0.600	0.570	0.0015	0.0060	0.0225	0.03	95
28	Solvent Yellow 107	O-Xylene	0.319	0.303	0.0008	0.0032	0.0120	0.02	95
30	Pigment Blue 60	Nitrobenzene	0.300	0.286	0.0007	0.0030	0.0103	0.01	95
G	Acid Dyes (Anthraquinones/Condensed)	Solvent	2.500	2.375	0.0061	0.0250	0.0939	0.13	95
I	Disperse Dyes	Solvent	2.00	1.900	0.0049	0.0200	0.0751	0.10	95

	(Anthraquinones / Condensed)		0						
262	fischer's base	Toluene	1.633	1.554	0.0040	0.0163	0.0587	0.08	95
265	fischer's aldehyde	Toluene	1.333	1.268	0.0032	0.0133	0.0484	0.06	95
277	Anthraquinone	Benzene	1.370	1.310	0.0033	0.0137	0.0430	0.06	96
286	Bromamine Acid	Nitro Benzene	3.360	3.202	0.0082	0.0336	0.1162	0.16	95

F-2 **VOC emission sources and its mitigation measures for achieving maximum solvent recovery and minimize VOC generation:**

F-2	**VOC emission Sources and its Mitigation Measures.**		
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 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	Routine & periodic inspection to check leakage. Preventive

F-3 **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.

F-4 | **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	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	•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	•Check Thickness of tank •Using fix pipeline for solvent transfer •Minimum use of Connectors & Joins •Provided sufficient Space (Solvent Unloading area) for

					ended lines		transfer and immediately repair or replace with new seal.	Solvent Tanker

Comments for F-1, F-2, F-3 & F-4

- 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 not 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).

G **Hazardous waste**

G-1 **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
				Existing	Proposed	Total	
1	ETP Sludge	ETP	35.3/SCH-1	0	3170	3170	Collection, Storage, Transportation, Disposal at TSDF through GPS mounted vehicles.
2.	MEE Salt	MEE	35.3/SCH-1	0	1095	1095	
3.	Process waste	3-amino-1,2,4-triazole, Reactive Dyes (Azo)	26.1/SCH-1	0	984	984	
4.	Used Oil	Machinery	5.1/SCH-1	3.6 KL	2.4 KL	6.0 KL	Collection, Storage and reused as lubricants within premises OR Transportation and disposal by selling to registered recyclers through GPS mounted vehicles.

5.	Discarded containers Bags/Liners	Raw material storage	33.1/SCH-1	240000 Nos.	6000 Nos.	246000 Nos.	Collection, Storage, Transportation, return to Supplier/Reuse or send to registered recyclers through GPS mounted vehicles.
6.	Spent sulfuric Acid (20-25%)	Mfg. Process (PNTOSA, Reactive Dyes (Azo))	26.3/SCH-1	0	5952	5952	Collection, Storage, Transportation, and reuse in premises or selling to registered recyclers (under rule no 9) through GPS mounted vehicles.
7	Spent Solvent	Mfg.Process (Bromamine Acid, Disperse Red 11 Acid Dyes (A.Q./Condensed), Solvent Orange 60, Disperse dyes (A.Q./Condensed),	26.4/SCH-1	0	35378	35378	Collection, Storage, Handling recovered & recycled by Solvent Distillation Plant within premises OR will be sent to end users Rule-9 through GPS mounted vehicles.
8	Distillation Residue	Acid Dyes (A.Q./Condensed), Disperse dyes (A.Q./Condensed), Bromamine Acid Solvent Orange 60	20.3/SCH-I	0	1003	1003	Collection, Storage, Transportation & send to pre/co-processing units (cement industries) OR disposal at nearest CHWIF site through GPS mounted vehicles.
9	Scrubbing Solution (30-35% NaBr)	From Scrubber	26.1/SCH-1	0	205	205	Collection, Storage, Transportation Sell to End Users having permission under Rule-9 through GPS mounted vehicles.
10	Scrubbing Solution (20-22% Liq. Ammonia)	From Scrubber	26.1/SCH-1	0	275	275	Collection, Storage, Transportation, and reuse in premises or selling to registered recyclers (under rule no 9) through GPS mounted vehicles.
11	Scrubbing Solution (20-25% Na2SO3)	From Scrubber	26.1/SCH-1	0	51	51	Collection, Storage, Transportation Sell to End Users having permission under Rule-9 through GPS mounted vehicles.

12	Scrubbing Solution (20-22% NaCl)	From Scrubber	26.1/SCH-1	0	56	56	Collection, Storage, Transportation & send to ETP and then to CETP.
13	Scrubbing Solution (20-22% NaNO2)	From Scrubber	26.1/SCH-1	0	4.3	4.3	Collection, Storage, Transportation send to ETP and then to CETP.
14	Spent Aluminum Hydroxide	Anthraquinone	28.1/SCH-I	0	480	480	Collection, Storage, Transportation, and reuse in premises or selling to registered recyclers (under rule no 9) through GPS mounted vehicles.
15	Spent catalyst	1-4 Benzimidazole	26.5/SCH-I	0	96	96	Collection, Storage, Transportation & send to pre/co-processing units (cement industries) OR disposal at nearest CHWIF site through GPS mounted vehicles.
16	Hyflow + Spent Carbon	Sulfo J Acid	28.3/SCH-I	0	1.20	1.20	
17	Contaminated Cotton Rags or Other Cleaning Materials	33.2/ SCH-1	Process & Maintenance	0	0.5	0.5	Collection, Storage, Transportation & send at nearest CHWIF site, Through GPS mounted Vehicles.

Comments:

- Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.
- The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

G-2	Non- Hazardous waste management matrix

1. Fly Ash generation will be **800** MTPA
2. STP sludge generation will be **19** MTPA

Comments:

- 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.
- STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.

H	SAFETY details
H-1	Details regarding storage of Hazardous chemicals

j) 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	Sulphuric Acid	30 KL	1	Toxic
2	Hydrochloric Acid	30 KL	2	Toxic
3	Oleum 23%	30 KL	2 (1 Spare tank)	Toxic
4	Caustic Lye	25 KL	2	Toxic
TANK FARM (PESO)				
5	Acetic acid	15 KL	1	Flammable & Toxic
6	Methanol	10 KL	1	Flammable & Toxic
7	Toluene	20 KL	2	Flammable & Toxic
8	Benzene	20 KL	2	Flammable & Toxic
9	DMF	20 KL	2	Flammable & Toxic

Safety Measures for PESO Underground storage tank farm:

- The underground vessels shall be placed within concrete or brick masonry pit with a gap of 1.0 meter between the walls of the pit and the vessel as well as in between the vessels.
- The underground vessels shall be installed on a firm foundation and firmly secured to the foundation so as to prevent movement of floatation.
- Class A Petroleum products will be received through road tanker and stored in u/g storage tank as per PESO Rule.
- Tank farm will be constructed as per explosive department requirement and separation distance will be maintained.
- The underground vessels covered by earth (Mound) shall be a designed to withstand external pressure due to load of the earth cover.
    - Provided with external anti-corrosive coating or cathodic protection to prevent corrosion;
    - Covered by earth, sand or any other non-corrosive material free from abrasive particles likely to damage the anti-corrosive coating of the vessel-the thickness of the covering material above the top surface of the vessel shall not be less than 0.5 meter.
    - Having the discharge level of the safety relief valves at least 2 meters above the top surface of the vessel, but in any case, not less than 3 meters from the ground level;
    - Fitted with the necessary piping's, fittings, valves and other mounting on top of vessel in such a manner that they can be operated and maintained without disturbing the earth cover. In case of above ground vessel with earth cover (mound), liquid outlet pipe at the bottom may be allowed provided the control valve and emergency valve of this line is just outside the earth cover for the purpose of operation and maintenance from outside.
- Static earthing provision will be made for road tanker as well as storage tank.
- Flame arrestor with breather valve will be provided on vent line.
- Road tanker unloading procedure will be prepared and implemented.
- Fire load calculation will be done and as per fire load hydrant system will be provided as per NFPA std. and fire extinguishers will be provided as per fire load calculation.
- Spark arrestor will be provided to all vehicles in side premises

- Lightening arrestor will be provided on the top.
- Flame proof type equipment and lighting will be provided.
- Trained and experience operator will be employed for tank farm area.
- NFPA label (hazard identification) capacity and content will be displayed on tanks
- Solvents will be transferred by pump only in plant area and day tank will be provided. Overflow line will be return to the storage tank or Pump On-Off switch will be provided near day tank in plant. Jumpers will be provided on solvent handling pipe line flanges & Flexible SS hose will be used for road tanker unloading purpose and other temp. connection.

PESO Area Storage & Handling Safety: (UNLOADING)

- ✓ Ensure that the transfer of petroleum takes place only through electrically continuous sound hose having oil tight couplings at both ends.
- ✓ Couplings of the hose at the discharge ends of the tank trucks as well as at the fill pipe end of the underground tank shall not be leaky.
- ✓ Unloading operations should not commence without ensuring earthing of the tanker body to a proper earthing point. For this purpose, a proper earthing point shall be provided near filling points.
- ✓ Before commencing unloading operations tanker should be parked in the retail outlet in such a manner that it can be taken out of the retail outlet immediately in case of emergency.
- ✓ Dip pipe of the underground tank shall not be kept open during unloading operations.
- ✓ The dealer, supervisors and pump attendants shall be trained in all aspects of safety in RO including the provisions of Petroleum Rules, 2002 in Chapter IV on Electric Installation, Rules 117 to 119,122,125 and conditions 6 to 12, 15,16,18 to 21of licence Form XIV for the RO's under the said Rules.
- ✓ Before starting to unload of petroleum, it must be ensured that at least a safe distance of 3 M is kept clear of any kind of movement of other vehicles that come for fuelling and that there is no source of any spark in the area. In case of retail outlets that are in congested areas operations of fuelling automobiles in the retail outlet may be discontinued.
- ✓ Do not use plastic hose pipes for unloading purposes.
- ✓ Do not use hose pipe fitted with metallic pipe (bent pipe) at the discharge end.
- ✓ Do not use Hose pipes not conforming to OISD 135.
- ✓ Proper tightening of hose connections using screwed/cam lock couplings.
- ✓ Make sure that there shall be no collection of leaked petroleum through hose pipe connection at tanker discharge faucet end in the plastic bucket kept on the ground below.
- ✓ Provision of electrical earthing / bonding by means of flexible cable between tanker chassis and earth boss/fill pipe.
- ✓ Proper training to the retail outlet staff regarding hazards associated with the petroleum road tanker decantation operation in the retail outlets.

Safety Measures for Acid / Alkali Storage tank area:

- Storage tank will be stored away from the process plant.
- Tanker unloading procedure will be prepared and implemented.
- Caution note and emergency handling procedure will be displayed at unloading area and trained all operators.
- NFPA label will be provided.
- Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory mask etc. will be provided to operator.
- Neutralizing agent will be kept ready for tackle any emergency spillage.
- Safety shower, eye wash with quenching unit will be provided in acid storage area.
- Material will be handled in close condition in pipeline.
- Dyke wall will be provided to all storage tanks, collection pit with valve provision.

- Double drain valve will provide.
- Level gauge will be provided on all storage tanks.
- Safety permit for loading unloading of hazardous material will be prepared and implemented. TREM CARD will be provided to all transporters and will be trained for transportation Emergency of Hazardous chemicals.
- Fire hydrant system with jockey pump as per TAC norms will be installed.

k) 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/ Box of Glass Bottle	Hazardous Characteristics of Chemical
1	Butanol	200 Liter	25	Flammable & Toxic
2	O-xylene		25	Flammable & Toxic
3	Nitric Acid		15	Toxic
4	Hydrogen Peroxide		15	Toxic
5	Butyl Amine		50	Flammable & Toxic
6	Aniline		85	Flammable & Toxic
7	Formic acid		80	Flammable & Toxic
8	Benzyl chloride		50	Flammable & Toxic
9	Nitrobenzene		25	Flammable & Toxic
10	Acetic Anhydride		20	Toxic & Flammable
11	Phosphorus oxychloride		20	Toxic
12	Ammonia Gas	60 kg	20 Cylinders	Toxic
13	Chlorine Gas	900 kg	5 Cylinders	Toxic
14	Ethylene Oxide	47 Lit	22 Cylinders	Flammable & Toxic
15	Bromine	3 Lit	(3 Lit x 12 = 1 Box)100 Box	Toxic, Corrosive, Oxidizer

l) Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures

FLAMMABLE & EXPLOSIVE	✓ 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

- **Applicability of PESO:** Yes. Unit will obtain PESO License for storage of chemicals.

Comments:

- Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The Petroleum and Explosives Safety Organization (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.

H-2	**Types of hazardous Processes involved and its safety measures:**

Type of Process	Safety measures including Automation
Nitration (Through Nitric Acid)	✓ SOP will be displayed for safe charging of Nitric acid for nitration process ✓ Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory mask etc. will be provided ✓ to operator at time of nitric acid charging. ✓ Make sure the absorber unit (two stage Alkali scrubber) will be working and capable of handling vented NO2 fumes. ✓ Neutralizing agent will be kept ready for tackle any emergency spillage. ✓ Safety Shower and eye wash will be provided near process area. ✓ Total close process will be adopted (from storage area to measured vessel & then to reactor) for Nitric Acid 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. ✓ Prevention measures for runaway reaction of nitration reaction. • Instrumentation control through PLC Based SCADA • Rotameter • PLC Based SCADA Automatic • Level alarms • TIC of jacket as well as the reactor • Emergency control measures: • Flushing water (chilled water / ice quenching) to control the runaway reaction. Provision of Drainage of the contents of the nitrator underneath reactor; the contents will be neutralized (by Alkali) in catch point. It will be sent to CF (Co-Processing/CHWIF/TSDF).

Sulphonation **(Through Oleum)**	✓ **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.
Bromination **(Through bromine)**	✓ All end nozzles in bromine charging hose will be blinded after use. ✓ Charging of bromine will be done when reactor is in vacuum and POP coated funnel will be used during charging. ✓ Excess bromine will be neutralize or discharged by adding Sodium Bisulfite. ✓ Make sure the absorber unit (scrubber) is working and capable of handling vented bromine fumes. ✓ Structure of bromine bottle area will be periodically inspected to ensure

	stability. ✓ Personnel employed with bromine handling are made aware of potential hazards of bromine and of appropriate first-aid measure. ✓ Exhaust hood connected with alkali scrubber and ventilation system will be available. Exhaust hood has been provided to maintain to concentration of bromine vapor well below PEL. ✓ Work instructions for bromine charging will be displayed in local language/Hindi. ✓ Safety shower and eye-wash fountains will be available nearby handling and charging facility. The location of such item will be inspected and tested at fixed interval to make sure that it is in good condition. ✓ Hypo solution, lime water slurry or soda ash solutions will be available so as to pour them over a liquid bromine spill on the floor. The bromine and neutralizer is then washed to the sump with cold water hose. ✓ Personal Hygiene – the following personal protective equipment will be used. ✓ Chemical safety goggles, face shields, SCBA sets, Aprons, rubber gloves, etc. Only trained employees handled bromine charging. Training will be given to employees for bromine handling and charging
Chlorination (Through Chlorine gas)	✓ 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.
Amination (Through Ammonia gas)	✓ **Integrated PLC (Programmable Logic Controller) base process controls and operation of plant will be installed.** ✓ Valve, pipeline will be checked and maintain, in good condition. ✓ **Sprinkler system provision will be made in storage area.**

	✓ Ammonia leakage identification will be done by HCL torch. ✓ Ammonia leakage control Kit will be kept available at store. ✓ Hazard identification, control measures in case of leakage and first Aid procedure will be prepared and displayed at handling locations. ✓ **Sprinkler point and Eyewash/ Safety shower will be provided near Ammonia header point.** ✓ **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 storage area. ✓ Spark arrester will be installed on all vehicles inside the premises. ✓ SBA set, Canister mask and airline mask will be provided. ✓ Earthing & bonding will be provided.

H-3 | Details of Fire Load Calculation

Total Plot Area:	30936.89 sq. m.
Area utilized for plant activity:	1710 Sq. m. (G+2)
Area utilized for Hazardous Chemicals Storage:	1540 sq.m
Number of Floors:	G+2
Water requirement for firefighting in KLD:	159.01 m3
Water storage tank provided for firefighting in KLD:	400.0 m3
Details of Hydrant Pumps:	Fire water Pump will be available. We will have 01 No's of electrical fire water Pump located at pump house having capacity 4550.0 litres/min and 01 No's of Diesel pump having capacity 4550.0 litres/min. Apart from this we have 01 Nos Jockey Pumps of capacity 1080.0 litres/min which maintains the Fire water Header Pressure at 8.0 kg/cm^2.
Nearest Fire Station :	NEAREST FIRE STATION @ 26.97 km Around 30-35 mins Travel Time

	(Muler Fire station)
Applicability of Off Site Emergency Plan:	Yes

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 KL. SEAC found it as per the requirement.

H-4	**Details of Fire NOC/Certificate:**

Unit will obtain Fire NOC after receipt of EC and before getting CTO.

H-5	**Details of Occupational Health Centre (OHC):**

-

Number of permanent Employee:	75
Number of Contractual person/Labour:	55
Area provided for OHC:	35 sq. m.
Number of First Aid Boxes:	25
Nearest General Hospital:	Samuhik Arogya Kendra, Vagra
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

-

Comments

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

H-6	**Details of Emergency measures proposed and preparedness action for chemicals and fire explosion etc.**

- Onsite Emergency plan is prepared & incorporated in EIA report which will be followed during emergency for chemicals and fire explosion etc..

I	**Details of Membership for Common Facility:**

Sr. No.	**Membership for Common Facility**	**Membership Certificate issuing agency Date of Issue and validity of membership**
01	CETP	CETP of Saykha GIDC, Letter no.: GIDC/BRH/DEE/DRG/802, Dated: 28.12.2021
02	TSDF site	BEIL INFRASTRUCTURE LIMITED, Ankleshwar, Letter no.: BEIL/ANK/2021, Dated: 02.11.2021

03	Common Hazardous Waste Incineration Facility	BEIL INFRASTRUCTURE LIMITED, Ankleshwar, Letter no.: BEIL/ANK/2021, Dated: 02.11.2021
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 PESO License for storage of chemicals.
08	FIRE permission	Unit will obtain Fire NOC after receipt of EC and before getting CTO.
09	Health Certificate	Will be obtained.

J **Reduce / Reuse / Recycle measures adopted.**

(g) Reduce

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

(h) Reuse

Sr. No.	Item	Quantity	% percentage
1	STP treated water will be reused for gardening purpose within premises.	10.5	1.56 % of total water requirement
2	Condensate from MEE-2, MEE-1 and RO Permeate will be reused in Process, Cooling and Washing.	243.53	36.32 % of total water requirement

(c) Recycle

Sr. No.	Item	Quantity	% percentage
1	Boiler condensate recovery will be recycled in Boiler itself.	159	23.71% of total water requirement

K **EMP Details**

Sr. No	Unit	Detail	Capital Cost (Rs. In Crore)	Total Recurring Cost per Annum (Rs. In Crore)
1	Wastewater	ETP (Primary), ETP (Primary + Secondary + Tertiary), MEE-1, MEE-2,	9.25	6.0

		RO, CETP Membership		
2	Air	Stacks for Boiler & D. G. Sets, Vents for (Process), Scrubbers, MCS, Dust Collectors, Bag Filters	0.77	0.15
3	Hazardous Management	Membership Charges Disposal & Transportation Charges	0.01	0.70
4	Fire & Safety	Fire Hydrant & Fire Safety, PPES & Proximity Suit: 4 Nos., PLC (SCADA base) & Flame proof electrical fitting, Fire Extinguishers & Foam Type Trolley	2.0	0.30
5	Green Belt Development	2040 nos. trees	0.11	0.035
6	Occupational Health	OHC, OHS Training, Medical Check-up & Mis.	0.05	0.03
7	Noise Control	Acoustic enclosure & Silencer & Vibration pads & Noise PPEs	0.03	0.015
8	VOC Control & LDAR	Cost of Fugitive dust control like Closed handling system, Road sweeping machine etc. considered. Primary & Secondary Condenser, Double seal Mechanical Pump, Hood with blower with Carbon Column	0.10	0.035
9	Environment Monitoring Program	AWH Monitoring (Internal + External Lab)	0.03	0.015
10	CER Funds	1% of Total Project Cost (Roof Top Solar System @– Kothiya Village: 111 KW)	0.73	0.03
Total			**13.08**	**7.31**

Comments:

- The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

L	**Details of CER** -

PP shall carry out CER activities as below:

- ✓ Type of Project: Brownfield
- ✓ Installation of total 111.0 KW Roof Top Solar System (1.0 KW / household) for 111.0 household (100% household) @ 60,000 Rs. Per 1.0 Kw – **Kothiya Village**

13) DELIBRATION AND RECOMMENDATION:

"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:

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. 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.
3. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
4. 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.

5. 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.
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. **Safety & Health:**
   a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals.
   b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
   c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
   d) 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.
   e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
   f) 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.
   g) 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.
   h) 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.
   i) 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.
   j) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
   k) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
   l) Unit shall provide effective fire hydrants, water monitors & foam application system at solvent storage area and unit shall provide adequate safety system such as water sprinklers, water curtains, foam pouring system etc. to restrict cascade fire emergency in solvent storage area.
   m) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.
   n) Unit shall provide water sprinkler to the ammonia storage cylinder.
   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.
   q) Unit shall Store Bromine Bottle in cool dry separate area, out of direct sunlight.
   r) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress

system for nitration vessel safety.

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

WATER

9. Total water requirement for the project shall not exceed 670.52 KLD. Unit shall reuse 413.03 KLD of treated effluent within premises. Hence, fresh water requirement shall not exceed 257.49 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
10. The industrial effluent generation from the project shall not exceed 426.16 KLD.
11. Management of Industrial effluent shall be as under:

✓ **Concentrated Stream (11.51 KLD):**

- 11.51 KLD effluent generated from process shall be treated in primary ETP followed by MEE-2 & ATFD. 8.63 KLD, MEE-2 condensate shall be resued within premises.

✓ **Dilute stream (414.67 KLD):**

- 413.22 KLD effluent generated from process, utilities, scrubber and washing shall be treated in primary & secondary ETP. Out of 404.77 KLD treated effluent, 162.64 KLD shall be sent to CETP-Saykha and remaining 242.13 KLD shall be treated in RO.
- 171.90 KLD, RO permeate shall be reused within premises and 70.23 KLD, RO reject shall be treated in MEE-1 & ATFD. 63 KLD, MEE-1 condensate shall be reused within premises.
- 1.45 KLD effluent generated from scrubber shall be reused within premises or sold to authorized actual users having Rule-9 permission.

12. Treated waste water shall be sent to CETP-Saykha only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
13. 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.
14. Domestic wastewater generation shall not exceed 10.5 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 & plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
15. 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.
16. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
17. Unit shall provide ETP, RO, MEE & STP with adequate capacity.
18. The unit shall provide metering facility at the inlet and outlet of ETP, RO, MEE & STP and maintain records for the same.

19. Proper logbooks of ETP, RO, MEE & STP; 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:

20. Unit shall not exceed fuel consumption for boilers, HAGs and D G Sets as per the point no. E-2 as mentioned above.
21. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
22. Unit shall provide adequate APCM with process gas generation sources as the point no**. E-3** as mentioned above.
23. PP shall use approved fuels only as fuel in boilers.
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 indicativeguidelines shall also be followed to reducethe fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly toreducethe fugitive emission during vehicular movement.
    - Air borne dust shall becontrolled 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. Forcontrol of fugitive emission, VOCs, following steps shall be followed :
    - ✓ Closed handling and charging system shall be provided for chemicals.
    - ✓ Reflux condenser shall be provided over Reactors / Vessels.
    - ✓ Pumps shall be provided with mechanical seals toprevent leakages.
    - ✓ 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. Regular monitoring of ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, NOx, HCl, HBr, NH_3 and VOCs shall be carried out in the impactzoneand 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 toexceed the prescribed limits, necessary additionalcontrol 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. F-1 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. 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.
33. STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.
34. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
35. 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

36. The PP shall develop green belt within premises (10210 Sq. m i.e. 33% of the total plot area) as per the undertaking 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:

37. The project proponent shall carry out the activities of Rs 73 Lakhs [Installation of total 111.0 KW Roof Top Solar System (1.0 KW / household) for 111.0 household (100% household) @ 60,000 Rs. Per 1.0 Kw – **Kothiya Village**] 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.

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 Services 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.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

39. 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.
40. 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.
41. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
42. 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.
43. 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.
44. 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.
45. 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/IND3/80077/2022	**M/s. Meghmani Finechem Limited** Plot No. D2/CH-27, GIDC Dahej-2, Tal: Vagra, Dist: Bharuch, Gujarat- 392130	EC

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

Project status: **New**

1) Details of Application:

1.1. Type of application:	EC-New
1.2. Proposal no.	SIA/GJ/IND3/80077/2022
1.3. Category of Project :	5 (f) – B1
1.4. Date of application : (Online accepted by	16th July 2022

SEAC)	
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. & Date :	File No. SIA/GJ/69304/2022 dtd: 17/04/2022
1.7. Technical expert / Environmental Consultant :	M/s. Excel Enviro Tech
1.8. SEAC Meeting No. and Date:	512th SEAC-2 meeting dated 1 Nov 2022
1.9. ADS vide letter dated :	--
1.10. Reply Submitted by PP dated:	--
1.11. Revised Consideration SEAC Meeting No. and Date:	-

2) This is a new project proposed for manufacturing of synthetic organic chemicals as mentioned below:

Sr. No	Name of the Products	CAS / CI no.	Quantity (MT/Month)	End-use of products
FLUORINATION/Chlorination				
1	Benzotrifluoride – BTF	98-08-8		
2	Para chlorobenzotrifluoride PCBTF	98-56-6		
3	2,4-dichlorobenzotrifluoride	320-60-5		
4	2,6-dichlorobenzotrifluoride	104359-35-5		
5	Pentafluoro benzoic acid	602-94-8		
6	Tetra fluoro benzyl alcohol	53072-18-7		
7	4-(Heptafluoroisopropyl)-2-methyl aniline	238098-26-5		
8	2,4 6 Tri Fluoro Benzonitrile	96606-37-0		
9	4 Fluoro Phenol	371-41-5		
10	2 Fluoro Phenol	367-12-4		
11	2 chloro 4-fluoro- benzophenon	1806-23-1		
12	4,4,-difluorobenzophenon	345-92-6		
13	4 fluorobenzophenone	345-83-5		Speciality Chemicals
14	1,3-Difluoro Benzenes	372-18-9	2000	
15	4-Fluoroaniline	371-40-4		
16	2-fluoroaniline	348-54-9		
17	2,4-difluoroaniline	367-25-9		
18	Hydrofluoroolefine (HFO -1234 ze)	754-12-1		
19	Tri FluoroMethoxy Benzene	407-14-7		
20	Bis (TrifluoroMethoxy benzene)	--		
21	KF (Potassium Fluoride)	7789-23-3		
22	34DCBTF (3,4-dichlorobenzotrifluoride)	328-84-7		
23	1,3 Hexafluoro meta Xylene	402-31-3		
24	2,6-Difluorobenzyl alcohol	19064-18-7		
25	3-Amino -4-Chloro BenzoTrifluoride	98-16-8		
26	4-Chloro Benzotrifluoride	98-15-7		
27	3-Chloro-4-Fluoro Benzotrifluoride	78068-85-6		

28	3 Bromo-4 fluoroBenzotrifluoride	68322-84-9		
29	3- TrifluoromethylAcetophenone (TFMAP)	349-76-8		
30	3-Hydroxy Benzotrifluoride	454-81-9		
31	3-trifluoromethyl Phenyl acetonitrile	2338-76-3		
32	2,4-Dichloro 3,5 dinitrobenzotrifluoride	29091-09-6		
33	2-Trifluoromethyl Benzamide	360-64-5		
34	4 Fluoro Nitro benzenes	350-46-9		
35	2 Fluoro Nitro benzenes	1493-27-2		
36	2-4 Difluoro Nitro benzene	446-35-3		
37	2-fluoro 4 chloro Nitro benzene	700-37-8		
38	3-4 Difluoro Nitro Benzene	369-34-6		
39	2-Chloro-6-Fluoro Benzaldehyde	387-45-1		
40	3-Chloro-4-Fluoro Benzaldehyde	34328-61-5		
41	2,4-difluorobenzaldehyde	1550-35-2		
42	2-Fluoro Benzaldehyde	446-52-6		
43	4-Fluoro Benzaldehyde	459-57-4		
44	4-Fluoro Benzyl Chloride	352-11-4		
45	3-Fluoro Benzoyl Chloride	1711-07-5		
46	4-Fluoro Benzoyl Chloride	403-43-0		
47	2-Fluoro Benzoic Acid	445-29-4		
48	4-Fluoro Benzoic Acid	456-22-4		
49	4-Fluoro Benzal Chloride	403-43-0		
50	2,3,4,5-Tetrafluoro Benzoyl Chloride	94695-48-4		
51	2,3,4,5-Tetrafluoro Benzoic Acid	1201-31-6		
MPP1 - Nitration/Reduction/oxidation/hydrolysis/methylation				
52	3- Amino Benzotrifluoride	98-16-8		
53	3,5-dinitro-4-chlorobenzotrifluoride (DNPCBTF)	393-75-9		
54	2,4-dichloro-3 5 dinitroBTF (DCDNBTF)	29091-09-6		
55	2 fluoro-4 chloro aniline	57946-56-2		
56	4 Chloro-2 aminon phenol	95-85-2		
57	4 Amino Phenol	123-30-8		
58	2- Amino Phenol	95-55-6		
59	2,3 dichloro benzoic acid	50-45-3		
60	3-nitro 4-chloro benzoic acid	96-99-1		
61	3-nitro benzoic acid	121-92-6		
62	2,4- dichloro-5 sulfomoyl benzoic acid	2736-23-4		
63	N-acetyl glycine	543-24-8		
64	3,4-dichlorobenzene carboxylic acid	51-44-5		
65	Para amino benzoic acid	150-13-0	2900	
66	Para amino benzamide	2835-68-9		
67	4-chloro, 3-sulfomoul Benzoic acid	1205-30-7		
68	2 CHLORO 4 NITRO BENZOIC ACID	99-60-5		
69	3 METHYL 4 NITRO BENZOIC ACID	3113-71-1		
70	3 METHYL 2 NITRO BENZOIC ACID	5437-38-7		
71	4 NITRO BENZYL CYANIDE	555-21-5		
72	5 NITRO ISOPTHALIC ACID	618-88-2		
73	5 Nitro Isophthalic Acid Dimethyl Ester	13290-96-5		
74	2 CHLORO 5 NITRO BENZOIC ACID	2516-96-3		
75	3 AMINO 4 CHLORO BENZOIC ACID	2840-28-0		
76	3 AMINO BENZOIC ACID	99-05-8		
77	3,5 DIAMINO BENZOIC ACID	535-87-5		
78	4 NITRO BENZAMIDE	2835-68-9		

79	3 NITRO BENZAMIDE	645-09-0		
80	4 CHLORO 3 NITRO BENZAMIDE	41614-16-8		
81	3 AMINO 4 CHLORO BENZAMIDE	19694-10-1		
82	2 AMINO 3,5 DINITRO BENZOIC ACID	609-97-2		
83	2 AMINO 4 CHLORO BENZOIC ACID	89-77-0		
84	5 AMINO ISOPTHALIC ACID	99-31-0		
85	4 AMINO 3 METHYL BENZOIC ACID	2486-70-6		
86	4 AMINO 3 METHYL BENZOIC ACID METHYL ESTER	18595-14-7		
87	4 BUTYRYLAMINO 3 METHYL BENZOICACID METHYL ESTER	301533-59-5		
88	2 HYDROXY 5 NITRO BENZOIC ACID(5 NITRO SALICYLIC ACID)	96-97-9		
89	2 HYDROXY BENZOIC ACID	69-72-7		
90	3 HYDROXY BENZOIC ACID	99-06-9		
91	4 HYDROXY BENZOIC ACID	99-96-7		
92	2 METHOXY BENZOIC ACID	579-75-9		
93	3 METHOXY BENZOIC ACID	586-38-9		
94	4 METHOXY BENZOIC ACID	100-09-4		
95	3,5 DINITRO BENZOIC ACID	99-34-3		
96	2 HYDRAZINO BENZOIC ACID HYDROCHLORIDE	52356-01-1		
97	3 HYDRAZINO BENZOIC ACID HYDROCHLORIDE	38235-71-1		
98	4 HYDRAZINO BENZOIC ACID HYDROCHLORIDE	24589-77-3		
99	TRANS-4-(AMINO METHYL) CYCLOHEXANE-1-CARBOXYLIC ACID	167690-53-1		
100	4 BUTYRYLAMINO 3 METHYL 5 AMINO BENZOIC ACID METHYL ESTER	--		
101	META PHENOXY BENZYL ALCOHOL	13826-35-2		
102	ORTHO TOLUIDINE	95-53-4		
103	META TOLUIDINE	108-44-1		
104	PARA TOLUIDINE	106-49-0		
105	PARA CHLORO BENZOIC ACID	74-11-3		
106	ORTHO CHLORO BENZOIC ACID	118-91-2		
107	META CHLORO BENZOIC ACID	535-80-8		
108	PARA NITRO BENZOIC ACID	62-23-7		
109	META NITRO BENZOIC ACID	121-92-6		
110	2,3 DI CHLORO BENZOIC ACID	50-45-3		
111	2,4 DI CHLORO BENZOIC ACID	50-84-0		
112	ORTHO TOLUIC ACID	118-90-1		
113	META TOLUIC ACID	99-04-7		
114	PARA TOLUIC ACID	99-94-5		
115	3 CHLORO PEROXY BENZOIC ACID	937-14-4		
116	4 BUTYRYLAMINO 3 METHYL 5 NITROBENZOIC ACID METHYL ESTER	152628-01-8		
MPP2 -Cyanation/Nitrile products/ diazotization/ Bromination				
117	orthochloro benzyl cyanide	2856-63-5	1800	
118	Para chloro benzyl cyanide	140-53-4		
119	2,4-dichloro benzyl cyanide	6306-60-1		
120	Para phenylene diacetonoitrile	622-75-3		
121	meta phenylene diacetonoitrile	626-22-2		

122	P chloro benzonitrile	623-03-0		
123	O chloro benzonitrile	873-32-5		
124	2,4 dichloro benzonitrile	6574-98-7		
125	2,6-dichloro benzonitrile	1194-65-6		
126	DL-2-CHLORO PHENYL GLYCINE	6212-33-5		
127	3-Cyanobenzoic acid	1877-72-1		
128	3-Cyanobenzoic acid methyl ester	13531-48-1		
129	Potassium Iodide	7681-11-0		
130	D(-)P-HYDROXYPHENYL GLYCINE METHYLESTER (A)	57591-61-4		
131	2,4-Dichloro Phenyl Acetic acid	19719-28-9		
132	2-Chloro 4-Fluoro Toluenes	452-73-3		
133	2-Chloro 6-Fluoro Toluenes	443-83-4		
134	6-Fluoro-2-Methyl Indole (6-FMI)	40311-13-5		
135	3-Fluoro benzo trifluoride	401-80-9		
136	Fluoro benzene	462-06-6		
137	1,2-difluoro benzene	367-11-3		
138	1,4-difluoro benzene	540-36-3		
139	Fluoro toluenes	352-32-9 95-52-3 352-70-5		
140	1-Bromo-4-Fluoro Benzene	460-00-4		
141	2-Bromo-4-Fluoro Aniline	1003-98-1		
142	Sodium Bromide	7647-15-6		
143	4-Bromo-2-Fluoro Aniline	367-24-8		
144	3-Bromo Benzo trifluoride	401-78-5		
145	3,4,5-Tri Fluoro Bromo Benzene (TFBB)	138526-69-9		
146	2-Bromo-4-Fluoro Acetanilide (BFAA)	1009-22-9		
147	Bis (trifluoro methyl) Bromo Benzene	328-70-1		
148	4-bromo-methyl -2-Cyanobiphenyl (OTBN)	114772 - 54 - 2		
MPP 3 - Organic Advance Intermediates				
149	Trifluoro acetic acid	76-05-1		
150	Trifluoro acetic anhydride	407-25-0		
151	Methyl chloro difluoro Acetate	1514-87-0		
152	Chloro difluoro Acetic acid	76-04-0		
153	Chlorodifluoroacetic anhydride	2834-23-3		
154	Ethyl trifluoroacetate	383-63-1		
155	Ethyl trifluoroacetoacetate	372-31-6		
156	Tetrafluorobenzyl Alcohol	4084-38-2		
157	Ethyldifluoroacetate	454-31-9		
158	Amino crotonate	14205-39-1		
159	Chlorotrichloro Methyl -Cyclopentene	72685-38-2	5400	
160	2-methyl-4-（1,1,1,2,3,3,3-heptafluoro-2-propyl) aniline	238098-26-5		
161	Fluoromethyl ester	572880-17-2		
162	2, 6 Diphenylphenol	29353-68-2		
163	Calcium Fluoride	778-75-5		
164	Tetrafluoropropene -1234yf	754-12-1		
165	Isobutyl Acetophenone	38861-78-8		
166	2-Bromo-5-fluorobenzotrifluoride	40161-55-5		
167	2,2-Difluoroethylamine	430-67-1		
168	2,3-Dichloro-5-trifluoromethyl-pyridine	69045-84-7		

169	N[1-{6-Chloro-3-pyridinyl)methyl)-2(1H)-pyridinylidene]-2,2,2,trifluoroacetamide	1689566-03-7		
170	(N-(4-fluorophenyl)-2-hydroxy-N-isopropylacetamide	54041-17-7		
171	1,1,2,2-Tetrafluoroethyl Methyl Ether	425-88-7		
172	Hexafluoropropylene	116-15-4		
173	Ethyl Difluoroacetoacetate	352-24-9		
174	Difluoromethanesulphonyl chloride	1512-30-7		
175	Triflic Acid	1493-13-6		
176	Trifluoromethanesulfonic Anhydride	358-23-6		
177	Trimethylsilyltrifluoromethanesulfonate	27607-77-8		
178	2,6-Dichloro-4-(trifluoromethyl) aniline	24279-39-8		
179	Trifluoromethylbenzamide	360-64-5		
180	Trifluoroacetyl chloride	354-32-5		
181	SulphurTetrafluoride	7783-60-0		
182	2- Trifluoromethylbenzoylchloride	312-94-7		
183	TrifluoroMethyl-2-EthoxyVinyl Ketone	--		
184	2-(2-Methoxyethoxymethyl)-6-trifluoromethyl-nicotinic acid ethyl ester	380355-55-5		
185	Mefenamic Acid	61-68-7		
186	Penta Fluro Phenol	771-61-9		
187	Mono methyl hydrazine	60-34-4		
188	Tri Fluoro acetone	421-50-1		
189	Methyl tri fluoro acetate	431-47-0		
190	Chlorodifluoroacetic Anhydride	2834-23-3		
191	Bromopentafluorobenzene	344-04-7		
192	4-Chlorobenzotrifluoride	98-56-6		
193	6-Fluoro 2-methyl 1H- indole	40311-13-5		
194	5-Bromo-2-2-difluoro-1-3-benzodioxole	33070-32-5		
195	Difluorobenzodioxole Carboxylic acid methyl ester	773873-95-3		
196	Hydrogen Bromide	10035-10-6		
197	2-Fluoro-5-nitrobenzoic acid	7304-32-7		
198	5-Chloro-3-(difluoromethyl)-1-methyl-1H-pyrazole- 4-carboxaldehyde	660845-30-7		
199	3-Difluoromethyl-5-fluoro-1-methyl-1H-pyrazole-4-carboxaldehyde	1255947-44-4		
200	2,5-Dichloro-4-(1,1,2,3,3,3-hexafluoropropoxy) benzenamine	103015-84-5		
201	2,4,5-Trifluorophenyl acetic acid	209995-38-0		
202	2,4-Dichloro-3,5-dinitrobenzotrifluoride	29091-09-6		
203	3-phenoxy benzaldehyde	39515-51-0		
204	3-phenoxy toluene	3586-14-9		
205	Methyl-2- Fluoroacrylate	2343-89-7		
206	Lithium tetrakis (pentafluorophenyl) borate	371162-53-7		
207	2-fluoro-5-bromobenzonitrile	179897-89-3		
208	Succinimide	123-56-8		
209	Orthomethyl benzyl chloride	552-45-4		
210	Ortho Methyl Benzyl Cyanide	22364-68-7		
211	2,5-Dimethylphenylacetic acid	13612-34-5		
212	2,5 Di Methyl Phenyl Acetyl Chloride	55312-97-5		
213	2,4,6 trichloroaniline	634-93-5		
214	2- cumaranone (70% acetic anhydride Soln)	553-86-6		

215	5-Bromo-2-2-difluoro-1-3-benzodioxole	33070-32-5		
216	2-2-difluoro-1-3-benzodioxole	1583-59-1		
217	1-cs-acetyl(1,4,5-oxadiazepam-4-yl)-ethanoneOR 4,5-diacetyl-[1 ,4,5]-oxadiazepine	83598-13-4		
218	2-Chloro-4-(4 chlorophenoxy)-acetophenone	119851-28-4		
219	Benzaldehyde-o-Sulfonic acid	1008-72-6		
220	OTBN (Ortho tolylbenzonitrile)	114772 - 54 - 2		
221	2-Chloro-4-fluoro-5-(2,6-dioxo-4-trifluoromethylpyrimidin-1-yl) benzoic Acid	120890-57-5		
222	8-Chloro-6-(trifluoromethyl) imidazo [1,2-a]pyridine-2- carboxylic acid (QEK-31)	353258-35-2		
223	2,4,6 trifluoro benzyl amine	214759-21-4		
224	1-Bromo-3-chloropropane	109-70-6		
225	1-Bromo-3-chloro-2-methylpropane	6974-77-2		
226	1-Bromo-3,4-dichlorobenzene	18282-59-2		
227	2-Bromopropionic acid	598-72-1		
228	MESELAMINE	89-57-6		
229	LAMOTRIGINE	84057-84-1		
230	MEBENDAZOLE	31431-39-7		
231	4 CHLORO 3 NITRO BENZOPHENONE	56107-02-9		
232	4 AMINO 3 NITRO BENZOPHENONE	31431-19-3		
233	3,4 DIAMINO BENZOPHENONE	39070-63-8		
234	LASAMIDE	2736-23-4		
235	FUROSEMIDE	54-31-9		
Inorganic Compounds*				
236	Aluminium Hydroxide	21645-51-2	6800	Inorganic Compounds
237	Ammonium Bisulphate	7803-63-6		
238	Potassium Chloride	7447-40-7		
239	Zinc Chloride	7646-85-7		
240	Zinc Fluoride	7783-49-5		
241	**Captive Co-gen Plant**	--	4.5 MW	
Total			18900 MT/Month + 4.5 MW	

3) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
4) The proposal was considered in the SEAC video conference meeting dated 01.11.2022.
5) Project proponent (PP) and their Technical Expert M/s Excel Enviro Tech 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) 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 PM_{10}, $PM_{2.5}$, SOx 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).

8) 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.
9) 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.
10) Compliance of the ToR found satisfactory.
11) PP presented salient features of the project including Water, Air and Hazardous waste management are submitted.
12) **After deliberation, SEAC unanimously decided to consider the proposal in one of the upcoming meeting of SEAC after satisfactory submission of the following details:**
    1. Revised flue gas matrix by removing lignite as fuel in boiler.
    2. Floor-wise Fire Plan mentioning sprinklers system in utility/ boiler area, tank farm area, etc.
    3. Details of storage of hazardous chemicals in drums, barrels, carboys, etc.(other than tanks) mentioning characteristics of each chemical along with its safety measures.
    4. Provisional membership of TSDF for disposal of hazardous waste mentioning capacities i.e total capacity, booked capacity, allotted capacity ans spare capacity.

7.	SIA/GJ/IND3/77464/2021	**M/s. Troikaa Pharmachem Private Limited** Plot No: D-3/24/6/1, Dahej-III, GIDC Estate, Ta: Vagra, Dist: Bharuch, Gujarat-392130	EC

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

Project status: **New**

1) Details of Application:

1.1. Type of application:	EC-New
1.2. Proposal no.	SIA/GJ/IND3/77464/2021
1.3. Category of Project :	5 (f) – B1
1.4. Date of application : (Online accepted by SEAC)	28-08-2022
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. & Date :	File No. SIA/GJ/99806/2022 date: 02/06/2022

1.7. Technical expert / Environmental Consultant :	M/s. Excel Enviro Tech
1.8. SEAC Meeting No. and Date:	512th SEAC meeting dated 1 Nov 2022
1.9. ADS vide letter dated :	--
1.10. Reply Submitted by PP dated:	--
1.11. Revised Consideration SEAC Meeting No. and Date:	-

2) This is a new project proposed for manufacturing of synthetic organic chemicals as mentioned below:

Sr. No.	Name of the Product	CAS No./CI No.	Quantity (MT/Month)	End use of the product
1	Mephentermine Sulphate	1212-72-2	1.0	Cardiac Stimulant
2	Glycofurol	31692-85-0	33.0	Excipient
3	Sevoflurane	28523-86-6	18.0	Anaesthetic
4	Propofol	2078-54-8	5.0	Anaesthetic
5	Pralidoxime chloride	51-15-0	1.0	To treat pesticide poisoning
Total			**58.0**	

3) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
4) The proposal was considered in the SEAC video conference meeting dated 01.11.2022.
5) Project proponent (PP) and their Technical Expert M/s Excel Enviro Tech 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) 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 PM_{10}, $PM_{2.5}$, SOx 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).
8) 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.

9) 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.

10) Committee asked to submit the following details. Later on PP submitted the said details through email.
   - ✓ Quantity of fuel consumption of natural gas.
   - ✓ Details of carbon sequestration for carbon footprint.

11) Compliance of the ToR and reply submitted by PP found satisfactory.

12) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details
A	Total **cost of Proposed** Project (Rs. in Crores):	

Total Project Cost
80 Crores

Break-up of proposed project Cost:

Details	Project Cost (Rs. In Crores)
Land	4.32
Building	18.0
Machinery	48.82
Env. & Safety	8.86
Miscellaneous	--
Total	**80**

-

B	**Land / Plot ownership details:** (Linking between Land ownership and PP is required.) GIDC Lease Transfer Letter is available. Letter no. GIDC/RM/ANK/TRF/FTO/DAH6/26 Dated: 28/12/2021
B-1	**In case of outside GIDC only –Not Applicable as unit is located within GIDC**

Siting Criteria

Sr. no.	Environmental Sensitivity	Name/Specific details	Aerial Distance in Km
1	Habitat (Residential Area)		
2	Eco sensitive zones		
3	Wild life sanctuaries/National Parks		
4	Water Bodies		

			River		
			Natural Nallah/Drain		
			Lake/Pond/Wetlands		
			Water supply Tanks/Reservoirs		
			Canal		
		5	Protected Monuments/Heritage sites/Public Buildings etc.		
		6	National/State Highway OR Express way		
		7	Coastal Regulation Zone (CRZ) (In case of Coastal area projects)		
		8.	Ground water table in meter		
		9.	Railway Line		
		10.	Air Port		

B-2

Area adequacy

Total Plot area
18043.96 Sq. m.

Area Adequacy table:

Sr. No.	Particulars	Area (sq. m.)	Percentage (%)
1	Admin Block + Canteen	470.82	3%
2	OHC	28.2	0.16%
3	Production Block	3028.82	17%
4	Warehouse	658.23	4%
5	Solid Waste/Hazardous Storage	1765.51	10%
6	Utility Area (Boiler D.G. Set etc.)	941.45	5%
7	ETP area	172.6	1%
8	Security Cabin 1 & 2	161.2	1%
9	Road area	4733.52	26%
10	Green belt area	6083.62	34%
	Total Plot area	**18043.96**	**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.

B-3 **Green belt area**

	Total(Sq. meter)
Area in Sq. meter	6083.62
% of total area	33.72 %

Comments:

The condition shall be given that -

- The PP shall develop green belt (6083.62 Sq. m i.e. 33.72 % of the total plot area) as per the undertaking 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.

C **Employment generation**

Total
125

-

D **WATER**

D-1 **Source of Water Supply**

GIDC Dahej-III

Comments:

Prior permission from concerned authority shall be obtained for withdrawal of water.

D-2 **Water consumption (KLD)**

Category	Quantity KLD
(G) Domestic	6.0
(H) Gardening	23.5 (19 F + 4.5 R)
(I) Industrial	
Process	53.0
Washing	8.0
Boiler	30 (12 F + 18 R)
Cooling	6.0 (1 F + 5 R)
Others (Scrubber)	1.0
Industrial Total	**98**
Grand Total (A+B+C)	**127.5**

Comments:

- The water consumption above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.

D-3 **Waste water generation (KLD)**

Category	Waste water KLD
(I) Domestic	4.5
(J) Industrial	
Process	68.0

Washing	8.0
Boiler	3.0
Cooling	1.0
Others (Scrubber)	1.0
Total Industrial waste water	**81**
Total [A + B]	**85.5**

Comments:

- The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

D-4	Break-up of waste water disposal & facility (For Domestic)

4.5 KLD Domestic Waste Water will be treated in STP & treated wastewater will be reused in gardening purpose within premises.

Comments:

- Domestic wastewater generation shall not exceed 4.5 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.
- Unit shall provide STP with adequate capacity.

D-5	**Break-up of waste water disposal & facility (For Industrial)**

-

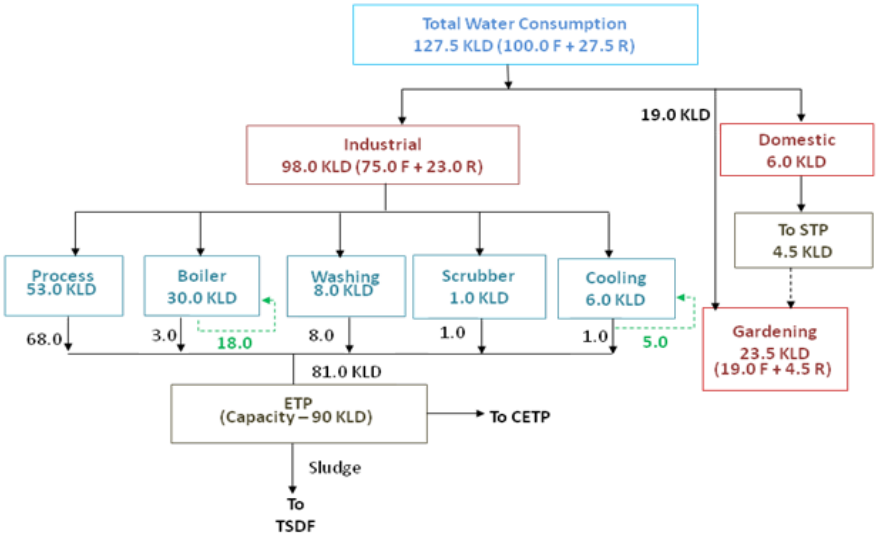
Sr. no.	**Quantity KLD**	**Facility**
1.	81	The total wastewater generation from process will be **81 KL/day** including washing, Boiler, scrubber & cooling. W/W from Boiling & Cooling will be treated in ETP For further treatment, it will be sent to Common Effluent Treatment Plant (CETP).
Total	81	--

ETP Capacity: 90 KLD

Comments:

1. Management of Industrial effluent shall be as under:
   - 81 KLD total industrial effluent shall be treated in primary ETP and sent to CETP-Dahej for further treatment and disposal.

D-6	**Simplified water balance diagram**



Worst case scenario:

Sr. No.	Product Name	Quantity (MT/Month)	Batch Size (kg)	Water Consumption (KL/Month)	Water Consumption (KLD)	Wastewater Generation (KL/Month)	Wastewater Generation (KLD)
1	Mephentermine Sulphate	1	1000	71	3	85.0	3
2	Glycofurol	33	1000	151	6	100.85	4
3	Sevoflurane	18	1000	591	23	905.15	35
4	Propofol	5	1000	515	20	632	24
5	Pralidoxime chloride	1	1000	48	2	50	2
	Total				**53**		**68**

D-7

Summary of water requirement	**Quantity** KLD	Remarks
Total water requirement for the project **(A)**	127.5	---
Quantity to be **Recycled (B)**	27.5	---
Fresh water(C)	100.00	---
Ensure **Total water requirement = Recycled water + Fresh water i.e. A = B + C**		

Summary

E	**AIR**
E-1	Power (Electricity) requirement : 500 KVA
E-2	**Flue gas emission details**

Sr. no.	Source of emission with Capacity	Stack Height (m)	Type of Fuel	Quantity of Fuel	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
1	Boiler-1 (5 TPH)	30	Briquette/ Natural Gas	12.5 TPD/ 365 SCM/hr	PM SO_2 NO_x	Cyclone Separator and Bag Filter followed by Scrubber
2	Boiler-2 (5 TPH)	30	Briquette/ Natural Gas	12.5 TPD/ 365 SCM/hr		Cyclone Separator and Bag Filter followed by Scrubber
3	DG Set-Stand by (2250 kVA) x 2 Nos.	30	Diesel	200 Lit/hr		Adequate Stack Height

*Note: APCM will be install only when Briquette will be used

E-3 **Process gas**

Sr. no.	Specific Source of emission (Name of the Product & Process)	Type of emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
1	Reaction Vessel	HCl, HF	18	Alkali Scrubber and Water Scrubber

E-4 **Fugitive emission details with its mitigation measures.**

Sr. No.	Source	Probable Pollutant Emission	Control Measures/ APCM
1	Solvent storage tank	Air pollutant (VOC)	v) The acids shall be taken from storage ta reactor through closed pipeline. Storage tanks s vented through trap receiver and condenser opera chilled water.
2	Solvent recovry system	Air pollutant (VOC)	Preventive maintenance of flange connectior glands of pumps
3	Handling of raw material bags in storage area	Air pollutant (PM)	The acids shall be taken from storage tanks to rea through closed pipeline. Storage tanks shall be ve through trap receiver and condenser operated on water.
4	Flange joints of pipeline, pump & motors	Air pollutant (VOC)	▪ General control measures like routine & inspection to identify leakage, preventive maint and operational maintenance, provision of leak de and repair system (LDAR). ▪ Preventive maintenance of flange connectio and glands of pumps.
5	Solid raw material transferring to reactor	Air pollutant (PM)	▪ Management to ensure proper handling spillages during transfer, charging operatio provision of a Dust Collection System for collectio air borne material wherever applicable. ▪ Relux condenser to be provided over the re
6	Liquid raw material transferring to reactor	Air pollutant (VOC)	▪ Relux condenser to be provided over the re
7	Loading /unloading at storage area	Air pollutant(VOC)	▪ Fugitive emissions in the work zone environ product raw material storage area shall be monitor regularly

Comments for E2, E3 & E4:

- The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.
- The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	Solvent management, VOC emissions etc.
F-1	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.

Sr. No.	Product Name	Solvent Input	Input Qty. (MT/Month)	Solvent Recovered (MT/Month)	% Solvent Recovered	Solvent Loss (MT/Month)	% Solvent Loss
1	**Mephentermine Sulphate**	Toluene	17.92	16.67	93.0	1.3	7.0
		Acetone	8.90	8.01	90.0	0.9	10.0
2	**Glycofurol**	Acetone	9.90	9.24	93.3	0.7	6.7
3	**Sevoflurane**	Polyethylene glycol	102.60	97.38	94.9	5.2	5.1
4	**Propofol**	Isopropyl alcohol	6.31	5.67	89.9	0.6	10.1
		Dichloromethane	4.05	3.66	90.2	0.4	9.8
		Toluene	28.50	25.70	90.2	2.8	9.8
5	**Pralidoxime chloride**	Acetone	3.85	3.47	90.0	0.4	10.0
		Isopropyl alcohol	6.00	5.40	90.0	0.6	10.0

F-2 **VOC emission sources and its mitigation measures for achieving maximum solvent recovery and minimize VOC generation:**

F-2	VOC emission Sources and its Mitigation Measures.		
Sr. No.	**Emission Source**	**Probable Pollutant Emission**	**Control measures**
1	Storage and usage of raw materials.	VOC (Air Pollutant)	1. VOC analyzers will be provided to detect any solvent leakages during storage and handling. 2. Regular maintenance of valves, pumps, flanges, joints and other equipment will be done to prevent leakages and thus minimizing the fugitive emissions of VOCs. 3. Entire process will be carried out in the closed reactors with proper maintenance of pressure and temperature. 4. Ensure minimum number of flanges, joints and valves in pipelines. 5. Preventive maintenance of roofs and seals for tanks 6. Monitoring and preventive maintenance of valves, flanges, joints, etc. 7. VOC detectors will be installed to detect any solvent leakages during storage and handling.
2	Flange joints of pipeline, pump & motors	VOC	

F-3 **LDAR proposed:**

Sr.	Source	Frequency of monitoring	Repair preventive maintenance

No.			schedule
1	Pumps	Occur at seal	Leak from pumps can also be reduced by using dual seals with or without barrier fluid.
2	Valves	Occur at stem or glad area of valve caused by failure of valve packing	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	Caused from gasket failure, torque bolts on flange	
4	Sampling Connection	Occur at outlet of sampling valve	
5	Compressor	Occur from seal	
6	Pressure Relief Device	Occur if valve is not sealed, operating too close to set point, seal is damaged, leaks from rupture disks can occur around the disk gasket if not installed properly	
7	Open Ended Lines	Occur at point of the line open to atmosphere and controlled by using caps, plug, flanges, Occur due to incorrect implantation of block and bleed procedure	

The Following methodology to be adopted during LDAR study:

- To prevent losses of these solvents in atmosphere, following infrastructure shall be used in addition to LDAR program.
- Leak free pumps for transfer of solvents.
- MSW Gaskets in solvent pipelines to prevent leakage from flanges.
- Minimum number of flanges, joints and valves in pipelines.
- To eliminate chances of leakages from glands of pumps, mechanical seal will be provided at all solvent pumps.
- All the rotating equipments like pumps will be installed with Mechanical Seals to arrest to arrest any sort of emissions.
- Condenser and scrubber through hoods and ducts by induced draft, and control by scrubber / dust collector to be ensured.
- In case the small spillage or leakage observed, first pour the china clay (vermiculate) on material and collect the contaminated china clay (vermiculate) and send to ETP.
- If the spillage is of flammable liquid, switch off all the power supply in the area to prevent Electric spark.
- Flanges will be sealed so less loss will be there.

Monitoring of Solvent Losses

- 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.

Preventive Maintenance Leakages

In order to prevent leakage from Pump, seals Valves etc. preventive maintenance shall be carried out periodically as per plan. Regular maintenance of valves, pumps. Flanges, joints and other equipment will be done to prevent leakages and thus minimizing the fugitive emission of VOC's.

Immediate Repair of devices in case of Leakages

- A regular preventive schedule will be in place or rectify all gaskets and joints to ensure no fugitive emissions shall take place.
- Plant shall also have competent contractor team to handle leaked and can repair the same immediately

Standby equipments like pumps, valves etc shall be kept basis the critically and usage Plant shall also have access equipments like Boom lift to handle leakages at height immediately.

F-4 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	Acetone	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 open ended lines · Leak from tank · Leak from Connectors	• 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	Benzaldehyde	Drum						
3	Cyclohexane	Drum						
4	Dichloromethane	Drum						
5	Ethylene glycol	Drum						
6	Ethylene oxide (Oxyethane)	Cylinder						
7	Polyethylene glycol (PEG-400)	Drum						
8	Tetrahydrofurfuryl alcohol (THFA)	Drum						
9	Toluene	Drum						

Comments for F-1, F-2, F-3 & F-4

- 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 not 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).

G Hazardous waste

G-1 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	35.3	30.0	Collection, storage, transport (Through GPS mounted vehicle) and Disposal to authorized TSDF.
2	Used Oil	Utility/DG Set	5.1	0.15	Collection, Storage, Transportation; reuse as lubricant or by selling to

					Authorized refiners.
3	Discarded Containers/ Bags/Liners	Raw Material Handling	33.1	3000 Nos./Year	Collection, Storage, Transportation; Decontamination and Reuse or Sale to Authorized Vendor.
4	Spent Solvent	Production	28.6	2058.48	Collection, Storage, Transportation, Reuse & Disposal by selling to having Rule-9 permission
5	Distillation Residue	Mfg. Process	20.3	128.63	Collection, Storage, Transportation & send to pre/co processing unit OR send to CHWIF.
6	Spent Carbon	Mfg. Process	28.3	1.08	
7	Hyflo Super Cell	Mfg. Process	28.3	1.20	
8	Off Specification Product	Mfg. Process (Batch Failure)	28.4	5.0	
9	Date Expiry Products	--	28.5	5.0	

Comments:

- Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.
- The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

G-2	Non- Hazardous waste management matrix

3. Fly Ash generation will be 1.39 MTPA
4. STP sludge generation will be 8.1 MTPA

Comments:

- 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.
- STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.

H	**SAFETY details**
H-1	**Details regarding storage of Hazardous chemicals**

m) 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/PESO)				
Not Applicable, none of Hazardous Chemical will be store in Tank				

Safety Measures for PESO Underground storage tank farm:

Not Any tank are Underground

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

Sr. No.	Raw Material	Max. Storage in Lit.	MOC / Storage	Size of Packing in kg or Lit.	No. of Bags/Barrels/Drums /Tank
1	1,1- Dimethyl benzyl carbinol (DMBC)	80.0	HDPE	200 L	1
2	1,1,1,3,3,3-Hexafluoro-2-propanol (HFIP)	1700.0	HDPE	200 L	9
3	1,3,5-Trioxane	300.0	Drum	200 Kg	2
4	40 % Sodium Hydroxide	80.0	Drum	200 kg	1
5	4-Hydroxy Benzoic Acid (HBA)	500.0	Drum	200 kg	3
6	Acetone	2300.0	Drum	200 L	11
7	Acetonitrile	55.0	Drum	160 L	1
8	Activated Carbon	9.0	Drum	50 kg	1
9	Aluminium chloride (anhydrous)	1350.0	Drum	200 kg	7
10	Benzaldehyde	110.0	Drum	200 L	1
11	Cyclohexane	189.0	Drum	200 L	1
12	Dichloromethane	405.0	Drum	200 L	2
13	Dimethyl sulphate	1230.0	Drum	200 L	6
14	Ethylene glycol	570.0	Drum	200 L	3
15	Ethylene oxide (Oxyethane)	11750.0	Cylinder	30 kg	392
16	Glacial Acetic Acid	40.0	Drum	50 L	1
17	Hydrochloric acid (7 % - 32%)	4000	Drum	200 L	20
18	Hydroxyl Ammonium Sulphate	350.0	Drum	200 kg	2
19	Hyflo super cell	10.0	Bag	25 kg	1
20	Isopropyl alcohol	820.0	Drum	200 L	4
21	N,N-Diisopropyl ethyl amine [DIPEA]	800.0	Drum	200 L	4
22	Polyethylene glycol (PEG-400)	10260.0	Drum	200 L	51
23	Potassium Hydroxide	300.0	Drum	200 kg	2
24	Pyridine-2-aldehyde	110.0	Drum	200 kg	1
25	Sodium Acetate	105.0	Drum	200 kg	1

26	Sodium Carbonate	150.0	Drum	200 kg	1
27	Sodium Hydroxide	215.0	Solid	50Kg	4
28	Spray dried Potassium Fluoride	3350.0	Drum	200 kg	17
29	Sulphuric Acid	505.0	Drum	200 kg	3
30	Tetrahydrofurfuryl alcohol (THFA)	2045.0	Drum	200 kg	10
31	Toluene	4640.0	Drum	200 kg	23

o) Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE **CORROSIVE&C HEMICALS** **TOXIC CHEMICALS** **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 ➢ Use Non Sparking Tools And Equipment, ➢ Precaution Measure Against Static Discharge ➢ Explosion Proof Electrical Lighting Eye Washer And Safety Shower Should Be Provided.

➢ **Applicability of PESO:** PESO will be obtained after getting EC.

Comments:

➢ Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The Petroleum and Explosives Safety Organization (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.

H-2	Types of hazardous Processes involved and its safety measures: Not Applicable

As example given below.

Types of process	Safety measures including Automation
Amination	**Not Applicable**
Bromination	
Chlorination	
Hydrogenation	
Nitration	
Sulphonation	

H-3	Details of Fire Load Calculation

Total Plot Area:	18043.96 sq. m
Area utilized for plant activity:	7226.83 sq. m

Area utilized for Hazardous Chemicals Storage:	600.0 sq.m
Number of Floors:	GF
Water requirement for firefighting in KLD:	100
Water storage tank provided for firefighting in KL	120
Details of Hydrant Pumps:	10 HP jockey pump, 60 HP Main Pump
Nearest Fire Station :	SEZ Fire Station
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 120 KL. SEAC found it as per the requirement.

H-4 Details of Fire NOC/Certificate:

- Fire NOC will be obtained.

H-5 Details of Occupational Health Centre (OHC):

Number of permanent Employee:	65
Number of Contractual person/Labour:	30
Area provided for OHC:	18 m2
Number of First Aid Boxes:	7
Nearest General Hospital:	Amex Medical Center Rahiyad
Name of Antidotes to be store in plant:	fomepizole, Sodium bicarbonate

Comments:

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

H-6 Details of Emergency measures proposed and preparedness action for chemicals and fire explosion etc.

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. Therefore it is essential to have a laid down procedure to meet emergency systematically.
- In any industry, emergency can arise at any moment and this depends on the type of:
- Raw Materials
- Machines
- Nearby Industries
- Location of the Industry etc.

PROCEDURE ON NOTICING AN EMERGENCY

- ❑ If anybody notices any situation, which may lead to a disaster, should be immediately inform the Shift In-charge / site controller / Incident Controller / Fire & Safety Supervisor / Security.
- ❑ Take charge of the situation as Incident Controller.
- ❑ Rush to the site of emergency to get the correct picture and then to Emergency Control Center for speedy control over the situation by making an arrangement for raising the alarm.
- ❑ On arrival of Team members, he shall assign duties as required and activate the On-Site Emergency Plan.
- ❑ Ensure safety of the plant and the personnel in the plant. He will make an assessment of the emergency and decide on external assistance.
- ❑ Communicate and Coordinate among the Incidents Controller/ Site Controller/ Factory manager/ fire safety supervisor etc. and will be the final authority on all matters related with management of

emergency such as:

- ❑ Fire fighting.
- ❑ Welfare and rescue operations.
- ❑ Arrange for Civil/Mechanical/Electrical work during emergency.
- ❑ Transport

Logistic facility /Tel Nos.	Destination	Distance Km.
Nearest Hospital	Amex Medical Center Rahiyad	2.89 km
Fire Brigade (101)	SEZ fire station	7.68 Km
Nearest Police Station (100)	Dahej Police Station	10.0 Km

I **Details of Membership for Common Facility:**

Sr. No.	Membership for Common Facility	Membership Certificate issuing agency Date of Issue and validity of membership
01	CETP	Unit has obtained Provisional membership certificate, No. GIDC/BRH/DEE/DRG/215 dated on 25-05-2022
02	TSDF site	Will be obtained
03	Common Hazardous Waste Incineration Facility	Unit has obtained Provisional membership certificate, No. BEIL/ANK/2022 dated on 22-06-2022
04	Common Spray Drying Facility	--
05	Common MEE Facility	--
06	Common Conveyance System	--
07	PESO permission	Will be obtained
08	FIRE permission	Will be obtained
09	Health Certificate	Will be obtained

J **Reduce / Reuse / Recycle measures adopted.**

(i) Reduce

Sr. No.	Item	Quantity	% percentage
1	Recycle Water	27.5 KLD	21.57 % of total water requirement.

(j) Reuse

Sr. No.	Item	Quantity	% percentage
1	Reuse Water	27.5 KLD	21.57 % of water will be reuse

(c) Recycle

Sr. No.	Item	Quantity	% percentage
1	Recycle water within plant	27.5 KLD	21.57 % of water will be reuse for cooling tower, boiler and gardening

K **EMP Details**

Sr. No	Unit	Detail	Capital Cost (Rs. In Lakhs)	Total Recurring Cost per Month

				(Rs. In Lakhs/ Annum)
1	Wastewater	Effluent Treatment Plant & Sewage Treatment System (ETP, RO, includes power, manpower, chemical cost etc.),	340	30
2	Air	Air Pollution Control Equipments Maintenance (Power, cleaning, maintenance etc.)	209	8
3	Hazardous waste Management	Hazardous Waste Storage Facility, Collection, Transportation & Disposal	40	20
4.	Fire & Safety	Sprinklers, Fire Extinguishers, Hydrant System & Safety Equipment	200	12
5	Green Belt Development	Green Belt development Within premises	6	2
6.	Occupational Health	OHC & Health check-up of workers	18	18
7.	Noise Control	Enclosures, vibration control pads etc.	10	5
8.	VOC Control & LDAR	PLC based interlocks for Hydrogenation & Nitration reaction systems, System Automation	120	90
9	Environment Monitoring Program	Tie up with NABL accreditation laboratory for regulatory monitoring, etc	5	6
10	CER Activity	As per list	160	5
Total			1108	196

Comments:

- The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and corporate social responsibility was deliberated and found satisfactory.

Details of CER -

PP shall carry out CER activities as below:

Sr. No.	Name of the Village along with work Done	Budget (in Crores)
1	Installation of solar panelled street lights in Jolva village	0.2
2	Tree plantation and provision of tree guard at nearby villages -Dahej, Kadodara, Jolva (500/- per tree including plantation and tree guard)	0.2
3	Cleaning and deepening of Lake in Rahiyad village (Lake size approx. 25,000 sq. m)	1.2
	Total Budget	**1.6**

14) DELIBRATION AND RECOMMENDATION:

"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:

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:

2. 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].**
3. 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.
4. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
5. 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.

6. 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.
7. 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.
8. All measures shall be taken to avoid soil and ground water contamination within premises.
9. **Safety & Health:**
   a) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
   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 fire hydrants, water monitors & foam application system at solvent storage area and unit shall provide adequate safety system such as water sprinklers, water curtains, foam pouring system etc. to restrict cascade fire emergency in solvent storage area.
   l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

WATER

10. Total water requirement for the project shall not exceed 127.5 KLD. Unit shall reuse 27.5 KLD of treated effluent within premises. Hence, fresh water requirement shall not exceed 100 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
11. The industrial effluent generation from the project shall not exceed 81 KLD.
12. Management of Industrial effluent shall be as under:
    - 81 KLD total industrial effluent shall be treated in primary ETP and sent to CETP-Dahej for further

treatment and disposal.

13. Treated waste water shall be sent to CETP-Dahej only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
14. Domestic wastewater generation shall not exceed 4.5 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 & plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
15. 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.
16. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
17. Unit shall provide ETP & STP with adequate capacity.
18. The unit shall provide metering facility at the inlet and outlet of ETP & STP and maintain records for the same.
19. Proper logbooks of ETP & STP; 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:

20. Unit shall not exceed fuel consumption for boilers and D G Sets as per the point no. E-2 as mentioned above.
21. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
22. Unit shall provide adequate APCM with process gas generation sources as the point no**. E-3** as mentioned above.
23. PP shall use approved fuels only as fuel in boilers.
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 indicativeguidelines shall also be followed to reducethe fugitive emission.
    - Internal roads shall be either concreted or asphalted or paved properly toreducethe fugitive emission during vehicular movement.
    - Air borne dust shall becontrolled 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. Forcontrol of fugitive emission, VOCs, following steps shall be followed :
    - ✓ Closed handling and charging system shall be provided for chemicals.

- ✓ Reflux condenser shall be provided over Reactors / Vessels.
- ✓ Pumps shall be provided with mechanical seals toprevent leakages.
- ✓ 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. Regular monitoring of ground level concentration of PM_{10}, $PM_{2.5}$, SO_2, NOx, HCl, HF and VOCs shall be carried out in the impactzoneand 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 toexceed the prescribed limits, necessary additionalcontrol 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. F-1 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. 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.
33. STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.
34. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
35. 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

36. The PP shall develop green belt within premises (6083.62 Sq. m i.e. 33.72% of the total plot area) as per the undertaking 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:

37. The project proponent shall carry out the activities of Rs 1.6 Crores [Installation of solar panelled street lights in Jolva village; Tree plantation and provision of tree guard at nearby villages -Dahej, Kadodara, Jolva and Cleaning and deepening of Lake in Rahiyad village] 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.
38. 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.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

39. 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.
40. 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.
41. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
42. 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.
43. 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.
44. 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.

45. 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

The meeting ended with a vote of thanks to the chair.

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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, Secretary, SEAC	

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Chairman
SEAC,Gujarat