Minutes of the 339th meeting of the State Level Expert Appraisal Committee held on 07th January 2022 through Video Conference (VC) on National Informatics Centre (NIC).

In the wake of recent crisis of COVID-19, lockdown situation, 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 07/01/2022 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.	Dr. M. N. Patel, Member, SEAC
4.	Shri D. C. Chaudhari, Member, SEAC
5.	Shri J. K. Vyas, Member, SEAC
6.	Shri Anand Zinzala, Member, SEAC
7.	Shri B.M. Tailor, Member, SEAC
8.	Shri A. V. Shah, 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/IND2/20617/2017	**M/s. Avani Dye Chem Industries** Plot No. C-1/57, Phase II, GIDC Vatva, Dist. Ahmedabad	Appraisal

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

Project status: **Expansion**

- Project proponent (PP) submitted online applications vide no- SIA/GJ/IND2/20617/2017 on dated 17.11.2021 for obtaining Environmental Clearance (EC).
- The SEAC had recommended TOR to SEIAA and SEIAA issued TOR to PP vide their letter dated 28.02.2018.

- Project proponent has submitted EIA Report prepared by M/s: Bhagwati Enviro Care Pvt. Ltd based on the TOR issued by SEIAA.
- This is an existing unit and now proposes for expansion in manufacturing of synthetic organic chemical plant as tabulated below:

Sr. no.	Name of the Products	CAS / Sl no.	Quantity MT/Month			End-use of the products *
			Existing	Proposed	Total	
1	Reactive Turquoise Blue G (Blue 21)	12236-86-1	5	145	150	In Cloth Dyeing & Printing
2	Reactive Turquoise Blue H5G (Blue 25)	12236-87-2				
3	Reactive Turquoise Blue PGR (Blue 72)	61968-93-2				
4	Reactive Turquoise Blue H2GP (Blue 77)	61968-95-4				
	Total		5	145	150	

 # Brief Note of Product Profile:

1. **No of Manufacturing Plants: 1 no.s**
2. **Brief Note regarding number of Products to be manufactured considering plant capacity: At a time unit will manufacturing 2 products.**

- The project falls under Category B of project activity 5(f) as per the schedule of EIA Notification 2006.
- The presentation was considered in the video conference meeting dated 07.01.2022.
- PP submitted salient feature of project and details of Water, air and Hazardous waste are as under,

Sr. no.	Particulars	Details
A-1	Total **cost of Proposed** Project (Rs. in Crores):	

Existing	Proposed	Total
4.82 Crores	0.3 Crores	5.12 Crores

Break-up of proposed project Cost:

Details	**Existing (Rs. In Crores)**	**Proposed (Rs. In Crores)**	**Total (Rs. In Crores)**
Land	2.73	--	2.73
Building	0.58	--	0.58
Machinery	1.08	0.2	1.28

		Others	0.42	0.1	0.52	
A-2	**Details of Environmental Management Plan (EMP)**				As below:	

Sr. No	**Unit**	**Detail**	**Capital Cost (Rs. In Crores)**	**Operating Cost (Rs. In Crores)**	**Maintenance Cost (Rs. In Crores)**	**Total Recurring Cost (Rs. In Crores)**
1	Waste Water	ETP, Spray drying Cost	0.01	0.02	0.015	0.035
2	Air	Monitoring of Air Environment	0.0	0.007	0.003	0.01
3	Hazardous Management	Transportation cost	0.0	0.006	0.004	0.01
4	Fire & Safety	Fire Hydrant System, Fire Extinguishers & PPE	0.012	0.007	0.003	0.01
5	AWH Monitoring	Env monitoring	0.01	0.012	0.0	0.012
6.	Green Belt Development	Health checkup of workers & employee	0.006	0.006	0.004	0.01
7.	Occupational Health	Health checkup of workers & employee	0.01	0.005	0.003	0.008
8	CER Activity	Social activity will do I near village	0.0	0.003	0.0	0.003
Total			**0.048**	**0.066**	**0.032**	**0.098**

Summary

Cost of Project in Crores per Annum:	5.12
EMP Capital Cost in Crores per Annum and Percentage:	0.048 Crores (16%)
EMP Recurring Cost in Crores per Annum and Percentage:	0.098 Crores (32.6%)

Comments:

1. 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.

A-3 **Details of CER as per OM dated 01/05/2018(In case of project falls under CPA/SPA,** CER fund allocation to be at least 1.5 times the slabs given in the OM dated 01.05.2018 for SPA and 2 times for CPA in case of Environmental Clearance as per the mechanism published vide MoEF&CC's OM vide 31.10.2019.)

% as per the OM	Rs. in Crores
1	0.003

In case of more than % as per the OM, mention the same.

No

Brief note on proposed activities for CER:

Priority Sector	Cost Estimate for doing following activity (in Lacs)
# Education	0.3

B **Land / Plot ownership details:**

Private Land

B-1 **Plot area**

Existing	Proposed	Total
1400 Sq. m.	0.0 Sq. m.	1400 Sq. m.

B-2 Brief note on **Area adequacy** in line to proposed project activities:

Sr. No.	Particulars	LAND AREA (Sq. m.)	% of Land Break up
1	Plant facilities	400	28.6
2	Storage Area (Raw materials, Finished goods, tank farm Area)	Raw material Storage: 52 Finish goods Storage: 77.0 HCL Storage:4.0 (TOTAL:133)	9.5
3	Administrative, other buildings, Security Cabin, Firewater Tank	Office building: 45 security cabin: 9 Water tank: 8.0 (TOTAL:62)	4.4
4	Utilities	100	7.1
5	Laboratory	0.00	0.0
6	ETP area	120	8.6
7	HZW storage area	20	1.4
8	Roads Parking	20	1.4
9	Green Belt space	280	20.0

10	Open Area	265	19.0
	Total	**1400**	**100**

- Hence, adequate area is available for proposed new Facility.

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	00	280	280
% of total area	00	20	20

In case of GREEN-BELT partly outside premises, give complete details like exact location (Lat-Long), Agreement/MoU with specific area etc.

We will develop 182 Sq. m. (13% of total plot area) green belt area in GIDC area & near villages.

Comments:

The condition shall be given that -

The PP shall develop green belt (280 sq. Meter within premises and 182 Sq. m outside premises sin GIDC area 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
15	7	22

In case of Indirect employment, Give details.

D	**WATER**
D-1	**Source of Water Supply** (GIDC, Bore well, Surface water, Tanker supply etc...) GIDC Water Supply
	Status of permission from the concern authority. ➢ Prior permission from concerned authority shall be obtained for withdrawal of water.
D-2	**Water consumption (KLD)**

Category	**Existing** KLD	**Proposed (Additional)** KLD	**Total after Expansion** KLD	Remarks
(A) Domestic	0.6	0.9	1.5	
(B) Gardening	0.0	1.0	1.0	
(C) Industrial				
Process & Scrubber	5.01	9.0	14.01	
Washing	0.8	3.75	4.55	
Boiler	0.01	0.5	0.51	
Cooling	0.5	0.5	1.0	
Others	0.0	0.0	0.0	
Industrial Total	6.32	13.75	20.07	
Grand Total (A+B+C)	6.92	16.65	22.57	

Sr. No.	Product	Batch Size Kg	Production (MT/ Month)	Water Consumption KL/batch	Water Consumption KL/day
1	Reactive Turquoise Blue H5G (Blue 25)	1000	150	2.0	10
2	Reactive Turquoise Blue G (Blue 21)	1600	150	1.6	5.0
3	Reactive Turquoise Blue PGR (Blue 72)	1620	150	1.62	5.0
4	Reactive Turquoise Blue H2GP (Blue 77)	1615	150	1.62	5.0

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Summary of water requirement	**Existing** KLD	**Proposed (Additional)** KLD	**Total after Expansion** KLD	Remarks
Total water requirement for the project **(A)**	6.92	16.65	22.57	
Quantity to be **recycled (B)**	0.0	1.3	1.3	
Total **fresh water** requirement **(C)**	6.92	15.35	22.27	

Ensure **Total water requirement = Fresh water + Recycled water**
i.e. A = B + C
22.57 = 1.3 + 22.27

Reuse/Recycle details (KLD) with feasibility.

[Source of reuse & application area]

➢

Comments:

1. 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 (Additional)** KLD	**Total after Expansion** KLD	Remarks
(A) Domestic	0.5	0.8	1.3	
(B) Industrial				
Process & Scrubber	5.0	18.4	23.4	
Washing	0.8	3.75	4.55	
Boiler	0.0	0.05	0.05	
Cooling	0.05	0.05	0.1	
Others	0.0	0.0	0.0	
Total Industrial waste water	5.85	22.25	28.1	

Brief Note on worst case scenario for waste water generation(Qualitative and Quantitative):

Sr. No.	Product	Batch Size Kg	Production (MT/ Month)	Effluent Generation KL/Batch	Effluent Generation KL/day
1	Reactive Turquoise Blue H5G (Blue 25)	1000	150	1.01	5.05
2	Reactive Turquoise Blue G (Blue 21)	1600	150	0.0	0.0
3	Reactive Turquoise Blue PGR (Blue 72)	1620	150	0.0	0.0
4	Reactive Turquoise Blue H2GP (Blue 77)	1615	150	0.0	0.0

Brief justification in case of no process effluent generation or no industrial effluent

generation or no high concentration effluent generation from proposed project (Whichever is applicable).

Comments:

1. 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)

Existing and Proposed

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

Comments:

1. Domestic wastewater generation shall not exceed 1.3 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.
2. Unit shall provide STP with adequate capacity.

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Clearly mention about final disposal

Low Concentrated treated effluent – CETP Vatva & High Concentrated treated effluent – Common spray drying facility, GESCSL Vatva & Spent Acid – Novel Spent Acid management

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

Industrial:	Industrial wastewater generate will be 28.1 KLD. Process waste water generation will be 6 Kl/d and Spent acid generation will be17.4 Kl/d so total process effluent generation will be 23.4 Kl/d. Low Concentrated Process effluent 1.1 Kl/D treated in our ETP after send to CETP, Vatva and High concentrated process effluent 4.9 Kl/d will be send to Spray Dryer, GESCL-Vatva. Spent Acid generation will be 17.4 KLPD. Spent acid will be sent to Novel Spent Acid Management Ltd or sell to authorized industries. Industrial waste water 5.8 Kl/day after treatment in our ETP send to CETP, Vatva.

Comments:

1. The industrial effluent generation from the project shall not exceed 28.10 KLD after expansion.
2. 4.9 KLD, High concentrated Industrial effluent shall be treated in ETP-1 and then treated effluent shall be sent to Common spray dryer of GESCL through GPS fitted tanker for evaporation.

3. 17.40 KLD spent acid generated from manufacturing process shall be sent to M/s. Novel spent acid management for further treatment and disposal , through GPS fitted tanker.
4. 5.80 KLD, Low concentrated Industrial effluent shall be treated in ETP-2 and then treated effluent shall be sent to CETP of GESCL for further treatment.
5. Treated waste water shall be discharged into CETP and common spray dryer of GSECL, Vatva only after complying with the inlet norms prescribed by GPCB to ensure no adverse impact on Human Health and Environment.

1. Unit shall provide STP and ETP with adequate capacity.
2. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

E	**AIR**
E-1	**Brief Note on fuel based Heat energy requirement and worst case scenario thereof:**

We will use natural gas as a fuel.

E-2 **Flue gas emission details**

No. of Boilers/TFH/Furnaces/DG sets etc. with capacities viz. TPH, Kcal/hr, MT/hr, KVA etc.

(In case of Project located within CPA/SPA , APCM shall be in line to the mechanism published in the MOEFCC's OM vide dated 31.10.2019)

Existing & 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	Baby Boiler – 600 kg/hr	11	Natural gas	400 SCM/Day	SPM SO_2 NO_X	--
2	Baby Boiler – 400 kg/hr	11	Natural gas			--
	Hot Air generator (Attached to Spray Dryer)	20	Natural gas	400 SCM/Day	SPM SO_2 NO_X	--

E-3 **Process gas** i.e. Type of pollutant gases (SO_2, HCl, NH_3, Cl_2, NO_x etc.)

Existing & Proposed

Sr. no.	Specific Source of emission (Name of the Product & Process)	Type of emissions i.e. Air Pollutants (SO2, HCl, Cl etc.)	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)

1	Reaction vessel	SO_2 HCl	15	Water Scrubber Followed By Alkali Scrubber
2	Spray Dryer	PM	20	Cyclone Separator + Water Scrubber + 2nd Stage water Scrubber + Dipping Tank + Enclosure Room

Note:

- **Details of gaseous raw materials used in proposed project**

  No
- **Estimation of process gas emission (Product wise and Total)**

  No Process Gas Emission
- **Requirement of the scrubbing media (KL per Day) considering solubility (Product wise and Total)**

  Not Applicable
- **Yearly generation of all bleed liquors (MT/KL per Annum) as mentioned above and its sound management in HW matrix.**

  Not Applicable

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

Measures taken for fugitive emission control:

- Proper storage of raw materials, products and fuels.
- Ensuring closed feeding and sampling.
- Establishing SOPs for start-up, shut down and maintenance operational procedures.
- Regular work place monitoring and ambient air quality monitoring as per post project monitoring plan.
- Pneumatically transfer of raw material in reactor.
- PPE will be provided to the workers working in process area.
- Greenbelt will be developed around the plant to arrest the fugitive emission.
- Paved road will make to reduce the fugitive emission. Water sprinkler will be provided to reduce the fugitive emission.

Comments for E2, E3 & E4:

1. 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.
2. 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, HAG, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Hazardous waste** (As per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016. Note:

	➢ **Disposal to scrap vendors/vendors/traders is not allowed**
F-1	**Hazardous waste management matrix**

Existing & Proposed

Sr. no	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules.	Quantity (MT/Month)			Management of HW
				Existing	Proposed	Total	
1	ETP	ETP Unit	35.3	3.5 MT	30 MT	33.5 MT	Collection, Storage, Transportation & Disposed to Safe TSDF Site
2	Used Oil	Lubrication of plant Machineries	5.1	10 lit	40 lit	50 lit	Collection, Storage, Transportation & Disposed by selling to registered reuse/recyclers
3	Discarded Containers & Bags	From Raw Material/ Production Section	33.3	91 Nos.	1904 Nos.	1995 Nos.	Collection, Storage, Transportation & Disposed by selling to registered recycler
4	Spent Acid	Manufacturing Process	26.3	2.5 KL	435 KL	437.5 KL	Collection, Storage, Transportation & Disposed By selling To Registered Recycler or send to NOVEL (Spent Acid
5	HCl	Manufacturing Process	Sch-II	0.0	37 KL	37 KL	Collection, Storage, Transportation & Disposed By selling To Registered Recycler.
6	Process Waste ($NaHSo_3$)	Manufacturing Process	26.1	0.0	18 KL/M	18 KL/M	Collection, Storage, Transportation & Disposed By selling To Registered Recycler.

Comments:

1. 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.

F-2	Membership details of **TSDF, CHWIF** etc. **(For HW management)**	
Details of Membership letter no. & Date with spare capacity of the Common Facility. ➢ Unit is already member of TSDF site Eco Care Infrastructure Pvt. Ltd.		
F-3	Details of Non-Hazardous waste & its disposal **(MSW and others)**	Not Applicable

Sr. no.	**Type/Name of Other wastes**	**Specific Source of generation** (Name of the Activity, Product etc.)	**Quantity (MT/Annum)**			**Management of Wastes**
			Existing	Proposed	Total	
1	---	---	----	---	---	---

G	**Solvent management**, VOC emissions etc.
G-1	Brief Note on types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.
➢ There will be no use of any type of solvent in existing as well as proposed manufacturing process & other ancillary operation hence not applicable	
G-2	**Brief Note on LDAR proposed:**
➢ Not Applicable	
G-3	**VOC emission** sources and its mitigation measures
➢ There will be no use of any type of solvent in existing as well as proposed manufacturing process & other ancillary operation.	
H	**SAFETY details**
H-1	**Details regarding storage of Hazardous chemicals** **(For tank storages only including spent acid and spent solvent tanks)**

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Sr.no	**Name of Chemical**	**Capacity of Tank**	**Number of Tanks**	**Hazardous Characteristics of Chemical**
1	HCl	2	1	Corrosive

2	Chloro Sulphonic Acid	20	3	Corrosive Poison Inhalation Hazard
3	Phosphorus Tri Chloride	4	2	Corrosive Poison Inhalation Hazard

Brief note on storage of Hazardous chemicals in Tanks

- Dyke will be provided to storage tank to collect leakage/spillage
- Provision of Static Earthing
- Fire Extinguisher/Fire Hydrant System
- Lighting /Proper Illumination
- Lightening arrestor
- Trained and experience operators
- NFPA label capacity and content should display on storage tank

Brief note on storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

- Drums will be stored at designated location or secured in a safety storage cabinet.
- Proper ventilation will be provided in Godown.
- Proper label and identification board /stickers will be provided in the storage area.
- Drum handling trolley / stackers/fork lift will be used for drum handling.
- Separate dispensing room with local exhaust and static earthing provision will be made.
- Materials will be transferred by pumping through pipeline or by vacuum, from drums.
- Drums for flammable liquids will have proper closures that can withstand the expected handling conditions without leaking.
- FLP type light fittings will be provided.

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
Corrosive	- Store corrosives in suitable labeled containers away from incompatible materials, in a cool, dry area. - Store corrosives in areas which are Well ventilated, Supplied with adequate firefighting equipment, Supplied with suitable spill clean-up equipment and materials. - Store containers at a convenient height for handling, below eye level if possible. - Avoid rapid temperature changes in corrosive liquid storage areas. If a tightly-sealed corrosive liquid container is cooled suddenly, a partial

	vacuum could form inside it. In extreme cases, the container might collapse and leak. - Inspect storage areas regularly for any deficiencies, including corrosion damage, leaking containers, or poor housekeeping.

- **Applicability of PESO :**
  Due to the less storage quantity PESO is not applicable for existing as well as proposed manufacturing activity.
- **Applicability of PESO:** No. Due to the less storage quantity PESO will not applicable.

Comments:

1. 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:** **(Hydrogenation process, Nitration process, Chlorination process, Exothermic Reaction etc.)**

- **-** There will be no hazardous waste process in existing as well as proposed manufacturing activity.

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

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Total Plot Area:	1400 Sq. M
Area utilized for plant activity:	900 Sq. M
Area utilized for Hazardous Chemicals Storage:	350 Sq. M
Number of Floors:	G
Water requirement for firefighting in KLD :	50 KLD
Water storage tank provided for firefighting in KLD:	50 KL (1 Nos.)
Details of Hydrant Pumps:	1) Main Pump: Flow: 40 m3/Hr, Head: 70 Meter 2) Jockey Pump: Flow: 7.5 m3/Hr, Head: 70 Meter

Nearest Fire Station :	Jashoda Nagar Fire station
Applicability of Off Site Emergency Plan:	No

- Comments:

1. 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 50 KL. SEAC found it as per the requirement.

H-4	**Details of Fire NOC/Certificate:**
We have obtained.	
H-5	**Details of Occupational Health Centre (OHC):**

Number of permanent Employee :	17
Number of Contractual person/Labour :	5
Area provided for OHC:	17
Number of First Aid Boxes :	12
Nearest General Hospital :	Kashiba General Hospital
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.

- During the video conference meeting dated 07.01.2022, the project was appraised based on the information furnished by technical expert of PP, M/s. Bhagwati Enviro Care Pvt. Ltd. Project proponent and technical expert of PP remains present during video conference meeting.
- The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period March 2021 to May 2021. Ambient Air Quality monitoring was carried out PM_{10}, $PM_{2.5}$, SO_2, NO_x, and VOCs, 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 model. Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modeling 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).

- 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.
- Upon asking regarding QCI/NABET accreditation, technical expert of PP informed that they have obtained QCI/NABET accreditation for preparation of EIA/EMP report.
- 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.
- Deliberation of the Committee:
  - ✓ This unit is established before year 2006 in GIDC Vatva and having valid CCA for existing plant. PP presented one show cause notice (SCN) issued by GPCB in last three years and its reply submitted at GPCB presented by technical expert of PP.
  - ✓ Site Plan/ layout with fire plan & floor plans and provision of separate entry & exits, adequate peripheral road, tank farm, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, fresh & spent solvent storage areas, hazardous waste storage area, 20 % greenbelt within premises and 20% green belt outside premises etc. Looking to proposed expansion of 5 MT/Month to 150 MT/Month of dyes products in existing facility, Committee insisted for area adequacy and technical expert of PP replied that they are applied for expansion of existing production and its fulfilled by size of reactor increase and operational hours increase by them.
  - ✓ Product profile with its end use discussed in depth. At a time only two products will be manufactured in plant.
  - ✓ Source of water will be GIDC.
  - ✓ Domestic Waste water will be treated in STP.
  - ✓ High COD Industrial waste water will be treated in ETP-1 and treated effluent will be sent to common spray dryer of M/s. GESCL, Vatva and low concentrated effluent will be treated in ETP-2 and treated effluent will be sent to CETP of M/s. GESCL, Vatva .
  - ✓ Spent acid generated from plant will be sent to M/s. Novel spent acid management facility at Vatva.
  - ✓ Natural gas as fuel will be used in boiler.
  - ✓ Two stage scrubbing system as APCM proposed for reactor and spray dryer .

- ✓ PP submitted hazardous waste matrix mentioning source of generation, quantity and Mode of disposal and committed to comply the Hazardous and Other Wastes (Management and Transboundary Movement) Rules' 2016. Looking to spent generation quantity mentioned 437.50 KL/Month and its disposal at M/s. Novel spent acid management facility at Vatva, Committee asked for membership of it for proposed expansion and its membership presented by PP.

- ✓ Fire hydrant plan, fire load calculation and Area adequacy was discussed.

- ✓ EMP, Green belt, CER, LDAR, Baseline data, ToR compliance etc. was discussed.

- **After detailed discussion, Committee unanimously decided to recommend the project to SEIAA, Gujarat for grant of Environment Clearance with the following specific condition:**

SPECIFIC CONDITIONS:

1. Project proponent (PP) 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. Total products shall not manufacture more than two products from product list at a given point of time as per details submitted by PP.
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. The project proponent must strictly adhere to the stipulations made by the Gujarat Pollution Control Board, State Government and/or any other statutory authority.
8. All measures shall be taken to avoid soil and ground water contamination within premises.
9. Project proponent (PP) shall adopt appropriate methods for segregation of waste water streams based on characteristics at source and its sound management keeping in view direction under section 18 (1) (b) of the Water (Prevention and Control of Pollution) act, 1974 issued by CPCB regarding compliance of CETP.

WATER

10. Total water requirement for the project shall not exceed 22.57 KLD. Unit shall reuse 1.30 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 21.27 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority shall be obtained for withdrawal of water.
11. The industrial effluent generation from the project shall not exceed 28.10 KLD after expansion.
12. 4.9 KLD, High concentrated Industrial effluent shall be treated in ETP-1 and then treated effluent shall be sent to Common spray dryer of GESCL through GPS fitted tanker for evaporation.
13. 17.40 KLD spent acid generated from manufacturing process shall be sent to M/s. Novel spent acid management for further treatment and disposal , through GPS fitted tanker.
14. 5.80 KLD, Low concentrated Industrial effluent shall be treated in ETP-2 and then treated effluent shall be sent to CETP of GESCL for further treatment.
15. Treated waste water shall be discharged into CETP and common spray dryer of GSECL, Vatva only after complying with the inlet norms prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
16. Domestic wastewater generation shall not exceed 1.30 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
17. Unit shall provide ETP and STP with adequate capacity.
18. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

AIR

19. Unit shall not exceed fuel consumption and provide APCM and Stack height as mentioned in flue gas matrix.
20. Unit shall provide APCM and stack height as mentioned in process gas matrix.
21. PP shall use approved fuels only as fuel in boilers.

HAZARDOUS & SOLID WASTE

22. All hazardous solid waste shall be managed as mentioned in hazardous waste matrix.
23. 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

24. The PP shall develop green belt [280 m2 (30 %) inside plant premises + 250 m2 outside premises in GIDC i.e. > 33 % of 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.
25. **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 with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
f) 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.
g) 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.
h) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
i) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.

2.	SIA/GJ/IND2/53062/2020	**M/s. Shivam Chemicals.** S. No. 360, Vaduchi Mata road, Vill:Lunej, Ta:Khambhat, Dis:Anand-388620.	Appraisal

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

Project status: **Expansion**

- Project proponent (PP) has submitted online application vide no. SIA/GJ/IND2/53062/2020 on dated 27.11.2021 for obtaining Environmental Clearance.
- ToR issued by SEIAA vide letter dated 05.11.2020.
- Project proponent has submitted EIA Report prepared by M/s. ECO CARE SOLUTIONS based on the TOR issued by SEIAA.
- This is an existing inorganic unit and proposed for manufacturing of synthetic organic chemicals as mentioned below:

Sr. no.	Name of the Products	CAS no. / CI no.	Quantity MT/Month			End-use of the products
			Existing	Proposed	Total	
1.	Ammonium	12125-	300	NIL	300	Inorganic Preparation

	Chloride	02-9.				
2.	Magnesium Chloride	7786-30-3	300	-300	0	
3.	Potassium Chloride	7447-40-7	300	-200	100	
4.	Calcium Chloride	1004\3-52-4	300	-100	200	
5.	Ammonium Sulfate	7783-20-2	300	-200	100	
6.	Copper Sulfate	7758-98-7	300	-300	0	
7.	Ferrous Sulphate	7782-63-0	300	-250	50	
8.	Zinc Carbonate	526302-5	300	-200	100	
9.	Magnesium carbonate	546-93-0	300	-200	100	
10.	Sodium Bi sulphite	7631-90-5	100	NIL	100	
	Organic Product					
11.	SulfurisedVegetable Oil	68153-37-7b	0	50	50	Organic/ Specialty Chemical Manufact-uring
12.	SulfurisedDiisobutylene	68515-88-8	0	50	50	
13.	Sodium Salt of Sulfonated Alkylated Diphenlyoxide	12626-49-2	0	50	50	
14.	Tris Nonyl Phenyl Phosphate	26569-53-9	0	50	50	
15.	ZDDP	6990-43-8	0	50	50	

 # Brief Note of Product Profile:

1. **No of Manufacturing Plants: 1 no.**
2. **Brief Note regarding number of Products to be manufactured considering plant capacity: Manufacturing activity will take place in 1 multipurpose plant where all proposed products can be manufactured. At a time only 1 product will be manufactured.**

- The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
- PP was called for Video conference meeting for presentation on dated 07.01.2022.
- PP submitted salient features of water, air and Hazardous waste management as under,

Sr. no.	Particulars	Details

A-1	Total cost of Proposed Project (Rs. in Crores):	
A-2	Details of Environmental Management Plan (EMP)	As below:

Existing	Proposed	Total
1 Crores	2 Crores	3 Crores

Break-up of proposed project Cost:

Details	Existing (Rs. In Crores)	Proposed (Rs. In Crores)	Total (Rs. In Crores)
Land	0.2	0	0.2
Building	0.3	0.3	0.6
Machinery	0.5	1.7	2.2

Sr. No	Unit	Detail	Capital Cost (Rs. In Crores)	Operating Cost (Rs. In Crores)	Maintenance Cost (Rs. In Crores)	Total Recurring Cost (Rs. In Crores)
1	Wastewater	ETP	0.2	0.04	0.02	0.06
2	Air	Dust collector and Multicyclone	0.1	0.01	0.01	0.02
3	Hazardous Management	Storage and disposal	0.05	0.05	-	0.05
4	Fire & Safety	-	0.3	-	0.01	0.01
5	AWH Monitoring	Monitoring	0.05	-	-	0.009
6.	Green Belt Development	-	0.05	-	-	0.004
7.	Occupational Health	Medical examinations	0.05	0.01	-	0.002
8.	CER Cost	CER activities	0.05	-	-	-
Total			0.85	0.11	0.04	0.155

Summary

Cost of Project in Crores per Annum:	3 Crore
EMP Capital Cost in Crores per Annum and Percentage:	0.85 Crore, 28.33%
EMP Recurring Cost in Crores per Annum and Percentage:	0.155 Crore, 5.16%

A-3	Details of CER as per OM dated 01/05/2018(In case of project falls under CPA/SPA, CER fund allocation to be at least 1.5 times the slabs given in the OM dated 01.05.2018 for SPA and 2 times for CPA in case of Environmental Clearance as per the mechanism published vide MoEF&CC's OM vide 31.10.2019.) % as per the OM: 1.66 — Rs. in Crores: 0.05 In case of more than % as per the OM, mention the same.
Brief note on proposed activities for CER: ➢	
B	Land / Plot ownership details: Please refer ANNEXURE –5.
B-1	Plot area Existing: 6887 Sq. m. — Proposed: - — Total: 6887 Sq. m.
B-2	Brief note on Area adequacy in line to proposed project activities: - Proposed organic product will be manufactured in a single multipurpose plant and at a time only one product will be manufactured. - Land area break-up has been mentioned as follows:

Sr. No.	Description of Area	Approx. Area (m2)
1.	Utility Area	164.39
2.	Raw Material Storage	337.92
3.	Finish Goods Store	
4.	Proposed Manufacturing Area	758.56
5.	Existing Plant area	
6.	Greenbelt Area	2272.7
7.	Other Area	3353.43
Total		6887

B-3	Green belt area

	Existing	Proposed (Sq. meter)	Total (Sq. meter)
Area in Sq. meter	-	2272.7	2272.7
% of total area	-	33%	33%

	In case of GREEN-BELT partly outside premises, give complete details like exact location (Lat-Long), Agreement/MoU with specific area etc.
C	Employment generation

Existing	Proposed	Total

25	20	45	

In case of Indirect employment, Give details.

D	WATER
D-1	Source of Water Supply (GIDC, Bore well, Surface water, Tanker supply etc...) • Private Supplier (Outside)
	Status of permission from the concern authority. ➢ Not Required.
D-2	Water consumption (KLD)

Category	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD	Remarks
(D) Domestic	0.8	2.2	3.00	Fresh water
(E) Gardening	0	4.0	4.00	Recycled Treated water.
(F) Industrial				
Process	0.00	0.00	0.0	Recycled Water
Washing	0.00	0.00	0.00	
Boiler	0.00	12.00	12.00	Fresh Water(RO Product)
Cooling	0.00	3.00	3.00	
Others	0.00	0.00	0.00	Fresh Water
Scrubber	0.00	1.50	1.5	Fresh Water
Industrial Total	0	16.5	16.5	-
Grand Total (A+B+C)	0.8	22.7	23.5	-

Brief Note on worst case scenario for water consumption:

➢ Total water required for the propose manufacturing activities will be 23.5 KLD.

-

Summary of water requirement	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD	Remarks
Total water requirement for the project (A)	0.8	22.7	23.5	-
Quantity to be recycled (B)	0	4	4	-
Total fresh water requirement (C)	0.8	18.7	19.5	-

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

Reuse/Recycle details (KLD) with feasibility.

[Source of reuse & application area]

Source of wastewater for reuse in KLD (From where it is coming)	Application area with quantity in KLD (Where it is used)	Characteristics of wastewater to be reused (COD, BOD, TDS etc.)	Remarks regarding feasibility to reuse
Utility and Scrubber Wastewater:4.0 KLD	Treated Effluent to be-used for gardening and plantation: 4 KLD.	pH: 5-10 TDS:1500-1800 mg/lit. COD: 100-200 mg/lit	-

In case of no reuse/recycle of waste water, Give brief note on justification as why no reuse/recycle.

- Not applicable

D-3 Wastewater generation (KLD)

Category	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD	Remarks
(C) Domestic	0.8	1.2	2.0	Sewage will be treated in STP.
(B) Industrial				
Process	0	0	0	-
Washing	0	0	0	-
Boiler	0	2.0	2.0	-
Cooling	0	0.5	0.5	-
Others	0	0	0	-
Water Scrubber	0	1.5	1.5	-
Total Industrial wastewater	0.0	4.0	4.0	wastewater will be treated inETP and treated water will be utilized for gardening

Brief Note on worst case scenario for wastewater generation(Qualitative and Quantitative):

Total industrial wastewater generation from the manufacturing activity will be 4 KLD only. Wastewater will be generated from utility operations and scrubber only.

Brief justification in case of no process effluent generation or no industrial effluent generation or no high concentration effluent generation from proposed project (Whichever is applicable).

- Not applicable

D-4	Mode of Disposal & Final meeting point (Existing and Proposed)

Existing and Proposed

	Existing	Proposed
Domestic:	Disposal Septic Tank/Soak pit.	Utilized for gardening and plantation.
Industrial:	-	Wastewater will be treated and finally used for gardening and plantations.

-

Clearly mention about final disposal

D-5	Treatment facilities

For Domestic waste water:

Capacity of STP: 5 KLD

For Industrial wastewater: Treatment facility within premises with capacity

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

Treatment scheme including segregation at source. (Give Characteristics of each stream i.e. COD, BOD, TDS etc.) In case of stream segregation, Separate ETP (ETP-1, ETP-2….) for each stream shall be proposed.

- ETP: 5 KLD Capacity

Sr. No.	Units	Sizes in KL	No. of units	Volume	Total Volume	Proposed Flow, KLD
1	Effluent Collection Tank	3 KL	1	3 KL	3 KL	4.0
2	Chemical Treatment Tank	3 KL	1	3 KL	3 KL	
3	Primary Settler	--	1	--	--	
4	Dual Media Filter	-	1	1 m3/hr	-	
5	Intermediate Collection Tank	5 KL	1	5 KL	5 KL	
6	Treated Effluent Storage tank (RCC)	10	1	10 KL	10 KL	

Note: (In case of CETP discharge):

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

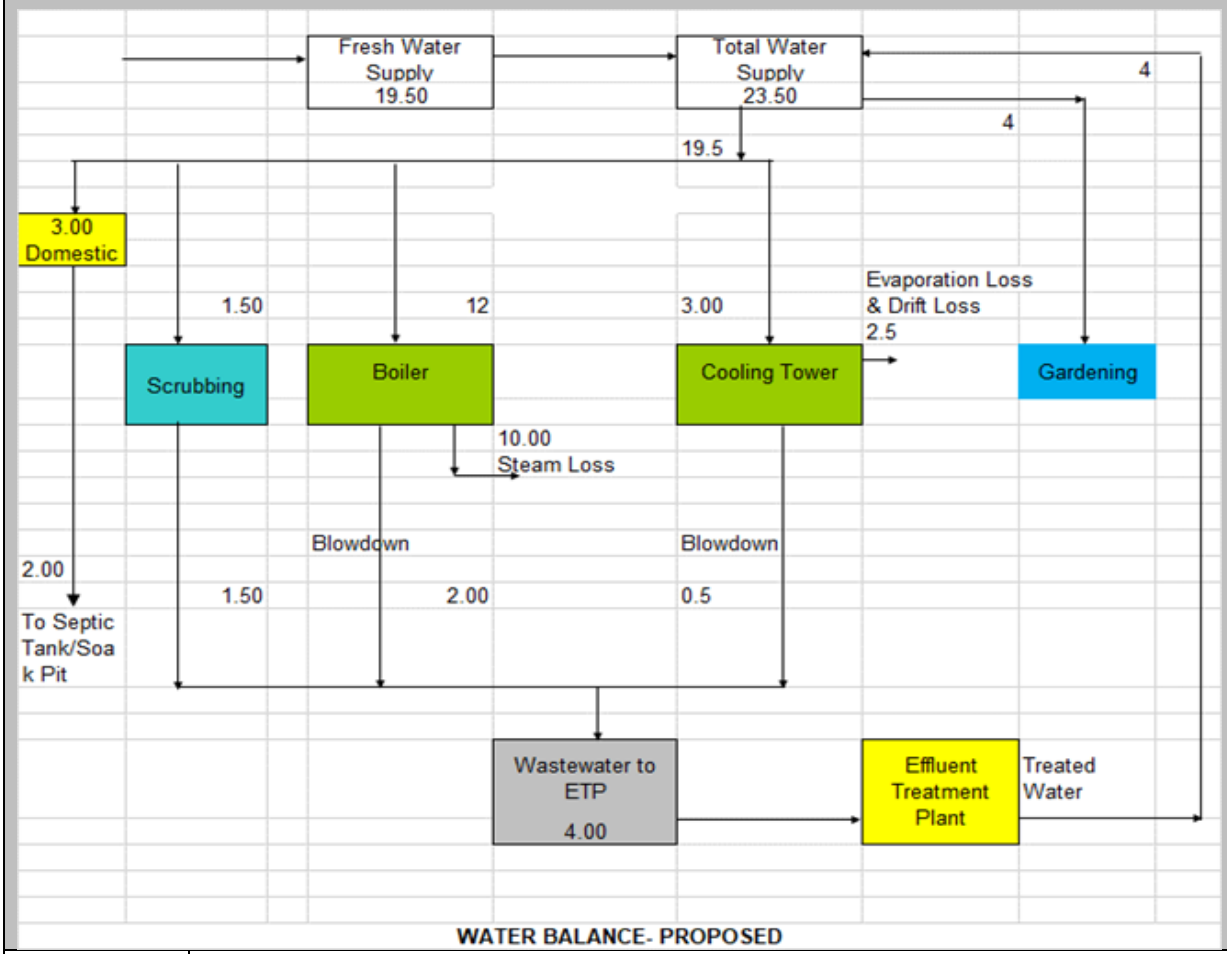
- Not applicable

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

- Not applicable

D-6	In case of Common facility (CF) i.e. CETP, Common Spray dryer, Common MEE, CHWIF etc.
	Name of Common facility (CF) (For waste water treatment)
	➢ Not applicable
	Membership of Common facility (CF) mentioning total capacity, consented quantity, occupied

	capacity and spare capacity and norms of acceptance of effluent from member units in-line with the direction given by GPCB vide Letter No. GPCB/P-1/8-G (5)/550706 dated 08/01/2020.
	➢ Not applicable
D-7	Simplified water balance diagram with reuse / recycle of waste water (Existing and Proposed)



WATER BALANCE- PROPOSED

E	AIR
E-1	Brief Note on fuel based Heat energy requirement and worst case scenario thereof:

Sr. No.	Source of emission with capacity	Name of the fuel	Fuel Consumption
Existing			
1	Thermic Fluid Heater(300 Kg)	Agro Briquettes	0.8 MTD
2	Furnace	Agro Briquettes/ White Coal	2.2 MTD
3	Hot Air Generator (200 Kg)	Agro Briquettes/ White Coal	0.5 MTD
Proposed			
1	Boiler-2T	Agro Briquettes/ White Coal	10 MTD

E-2	Flue gas emission details No. of Boilers/TFH/Furnaces/DG sets etc. with capacities viz. TPH, Kcal/hr, MT/hr, KVA etc. (In case of Project located within CPA/SPA , APCM shall be in line to the mechanism published in the MOEFCC's OM vide dated 31.10.2019)

Existing & 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)
Existing						
1	Thermic Fluid Heater(300 Kg)	11	Agro Briquettes	0.8 MT/Day	PM, SOx, NOx	Dust Collector
2	Furnace	11	Agro Briquettes/Coal	2.2 MT/Day	PM, SOx, NOx	Dust Collector
3	Hot Air Generator (200 Kg)	11	Agro Briquettes/Coal	0.5 MT/Day	PM, SOx, NOx	Dust Collector
Proposed						
1	Boiler-2T	15	Agro Briquettes/ White Coal	10 MT/Day	PM, SOx, NOx	Multicyclone Dust Collector

E-3	Process gas i.e. Type of pollutant gases (SO_2, HCl, NH_3, Cl_2, NO_x etc.)

Existing & Proposed

Sr. no.	Specific Source of emission (Name of the Product & Process)	Type of emissions i.e. Air Pollutants (SO2, HCl, Cl etc.)	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
Existing				
1	Reaction Vessel (Calcium Chloride)	HCl,SO_2	11	Scrubber
Proposed				
1	H2S Scrubber (SulfurisedDiisobutylene)	H_2S	11	Alkali Scrubber
2	H2S Scrubber (Sulfurised Vegetable Oil)	H_2S		Alkali Scrubber
3	Alkali Scrubber (ZDDP Plant)	H_2S		Alkali Scrubber
4	HCL Scrubber (Tris Nonyl Phenyl Phosphate/p-	HCl	11	Alkali Scrubber

		Chloro meta Xylenol)			

Note:

- Details of gaseous raw materials used in proposed project
- Estimation of process gas emission (Product wise and Total)
- Requirement of the scrubbing media (KL per Day) considering solubility (Product wise and Total)
- Yearly generation of all bleed liquors (MT/KL per Annum) as mentioned above and its sound management in HW matrix.

E-4	Fugitive emission details with its mitigation measures.
None	
F	Hazardous waste (As per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016. Note: ➢ Priorities for HW Management: Pre-processing, Co-Processing, Reuse/Recycle within premises, Sell out to actual users having Rule-9 permission, TSDF/CHWIH. ➢ Quantification of hazardous waste shall be based on mass balance and calculations shall be incorporated in EMP details separately. ➢ Disposal to scrap vendors/vendors/traders is not allowed
F-1	Hazardous waste management matrix

Existing & Proposed

Sr. no.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules.	Quantity (MT/Annum)			Management of HW
				Existing	Proposed	Total	
1	Empty bags /liners/Containers	Raw Material	33.1	0.1	19.9	20.0	To Approved Recyclers
2	Used Oil	Machinery	5.1	0.0	0.0	0.5	To Approved Recyclers
3	NaSH Solution (Source :,	Sulfurised Vegetable Oil, Sulfurised Diisobutylene	28.4	0	346.8	346.8	Sale to ActualUsers
4	HCL (30%))	Tris Nonyl Phenyl Phosphate	26.3	0	190.8	190.8	Sale to Acutal Users
5	Process Waste	Sodium Salt of Sulfonated Alkylated Diphenyl Oxide	36.2	0	3.6	3.6	Treatment in ETP, RO+ Evaporation
6	Spent	Sodium	36.2	0	6.0	6.0	Approved

	Catalyst (Clay)	Salt of Sulfonated Alkylated Diphenyl Oxide					TSDF Facility
7	Contaminated Cotton Rags	Maintenance	33.2	0	0.5	0.5	To CHWIF
8	ETP Sludge	ETP	35.3	0	10.0	10.0	To TSDF

-

F-2	Membership details of TSDF, CHWIF etc. (For HW management)

Details of Membership letter no. & Date with spare capacity of the Common Facility.

-

F-3	Details of Non-Hazardous waste & its disposal (MSW and others)	

Sr. no.	Type/Name of Other wastes	Specific Source of generation (Name of the Activity, Product etc.)	Quantity (MT/Annum)			Management of Wastes
			Existing	Proposed	Total	
1	Bio Fuel Ash					

G	Solvent management, VOC emissions etc.
G-1	Brief Note on types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc. - No usage of any solvent in proposed manufacturing.

Sr. No.	Name of Solvent	Storage	Qty. of Usage (MT/ Month) (With Existing & proposed)	% Recovery
1				
2				

G-2	Brief Note on LDAR proposed:

- Leak Free Pumps & Valve for transfer of solvents and chemicals.
- 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, double mechanical seal will be provided at all solvent pumps.
- All the rotating equipments like pumps will be installed with double Mechanical Seals to arrest any sort of emissions.
- Condenser post Reactor with cooling arrangement and chilling Arrangement.
- Flanges will be sealed so less losses will be there.
- Down the Temperature of Chilling tower to -15°C.
- Closed loop system.
- Regular work place monitoring for exposure of VOC's.
- Records of the LDAR Programme.

G-3	VOC emission sources and its mitigation measures

- Manufacturing activities is being carried out in totally closed system and by auto only thereby preventing the VOC Emission.
- Pumps with mechanical seal is provided
- Minimal provision of flanges, joints and valves.
- Maintenance of the pipeline and valves & fittings will be carried out regularly to avoid any leakages.
- The condenser will be provided with sufficient residence time to achieve more than 95% recovery up to 97%.
- Provision of PPE's.

H	SAFETY details
H-1	Details regarding storage of Hazardous chemicals (For tank storages only including spent acid and spent solvent tanks)

-

Sr. no.	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
1	Oleum	15 KL tank	1	Corrosive &Oxidiser

Brief note on storage of Hazardous chemicals in Tanks

OluemStorage details:

- Appropriate storage tank (MS)will be provided.
- Dyke wall is provided to storage tank.
- Fire extinguishers provided
- FLP type pump with tripping on dry run is provided.
- Double static earthing is provided to storage tank
- Jumper clips on flanges will be provided
- Jumper clips on flanges will be provided

Brief note on storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

- FLP type light fittings will be provided.
- Proper ventilation will be provided in godown. Labelling will be done for proper identification.

- Drum Handling trolley/fork lift will be used.

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
Oleum	• Dyke wall is provided to storage tank. • Fire extinguishers will be provided • FLP type pump with tripping on dry run is provided. • Double static earthing is provided to storage tank Jumper clips on flanges will be provided
Soya/Rapseed/Mineral Oil	• Dyke wall is provided to storage tank. • Fire extinguishers will be provided • FLP type pump with tripping on dry run is provided. • Double static earthing is provided to storage tank • Jumper clips on flanges will be provided
Sulphur	• Separate Storage area for sulphur storage. • Fire Extinguisher will be provided. • Water Sprinkler will be provided.

- Applicability of PESO:not applicable

H-2	Types of hazardous Processes involved and its safety measures: (Hydrogenation process, Nitration process, Chlorination process, Exothermic Reaction etc.)

-

Type of Process	Safety measures including Automation
Sulphonation	DCS/PLC Based Control System will be provided to the Multipurpose Plant.

H-3	Details of Fire Load Calculation

-

Total Plot Area:	6887 Sq. Meter
Area utilized for plant activity:	758.56
Area utilized for Hazardous Chemicals Storage:	337.92
Number of Floors:	1
Water requirement for firefighting in KLD :	2741.20Ltrs.
Water storage tank provided for firefighting in KLD:	50 KL
Details of Hydrant Pumps:	Jocky Pump - 10.8 M^3/H, Main Pump - 182 M^3/H, Disel Pump -132 M^3/H
Nearest Fire Station :	Khambhat Fire Station 5.5 Km

	Applicability of Off Site Emergency Plan:	Yes

-

H-4	Details of Fire NOC/Certificate:

Fire NOC Awaited

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

-

Number of permanent Employee:	45
Number of Contractual person/Labour :	0
Area provided for OHC:	150 (min. required: 15 Sq.Mtr.)
Number of First Aid Boxes :	10
Nearest General Hospital :	Khamabhat General Hospital
Name of Antidotes to be store in plant :	-

- During the SEAC Video conference meeting dated 07.01.2022, Project Proponent (PP) and their technical expert and EIA consultant from M/s. ECO CARE SOLUTIONS remain present and made technical presentation before the Committee.
- During the meeting, the project was appraised based on the information furnished in the EIA Report , issues raised during public hearing and details presented during the meeting.
- 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 2019 to February 2020. Ambient Air Quality monitoring was carried out for PM_{10}, $PM_{2.5}$, SO_2, NOx, HCl and VOCs 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”. The resultant concentrations are within the NAAQS. The modeling 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).
- Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detail proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
- Upon asking regarding QCI/NABET accreditation, technical expert of PP informed that they have not obtained QCI/NABET accreditation for preparation of EIA/EMP report but they have Honorable Gujarat

High court stay order for preparation of EIA/EMP report. Looking to Honorable Gujarat High court stay order presented by PP of year 2018, Committee asked for latest Honorable Gujarat High court stay order for preparation of EIA/EMP report which was not produced by technical expert of PP during meeting. Hence Committee insisted for latest Honorable Gujarat High court stay order for preparation of EIA/EMP report with mentioning validity period.

- This is an existing unit of inorganic products production plant and proposed for manufacturing of organic chemicals at Villa- Lunej, Vaduchi mata Road, Ta.: Khambhat, Dist: Anand, outside notified area. Unit is having Valid CCA of the Board for existing plant. PP submitted CC&A compliance report for existing plant. Product profile with its end-use is discussed in depth. Source of water supply is private water tanker. Committee noted that PP has addressed there is no legal court case, public complaint and show cause notices issued by GPCB in last three years and its reply submitted at GPCB presented by PP.
- PP submitted satellite map showing that there is no any water bodies, villages, School, monuments etc. within 500 m radius of the project site. PP also submitted that there are no Eco sensitive zones, wild life sanctuaries within the 10 km area from the boundary of the project site.
- Deliberation of the Committee:
  - ✓ Looking to existing inorganic plant CCA specific condition showing inorganic products shall be manufactured by using virgin acid and not usage of any type of Hazardous waste for inorganic products manufacturing process but proposal of Hazardous waste disposal showing spent HCl, NaSH solution from proposed products will be utilized for inorganic products manufacturing, Committee asked for clarification regarding non compliance of existing CCA conditions. Technical expert of PP could not answered during meeting.

  - ✓ Site Plan/ layout with fire plan & floor plans and provision of separate entry & exits, 6 m wide peripheral road, tank farm, production areas, ETP area, utility area, hazardous waste storage area, fresh & spent solvent storage areas, hazardous waste storage area, 33% greenbelt within premises etc. Looking to layout plan, Committee insisted for revised layout plan with mentioning colour coding for existing inorganic and proposed organic manufacturing plant, storage of oleum with spare tank storage and other chemicals storage as per its type of hazard and compatibility chart, remove labour quarter mentioned in layout plan area, fire hydrant network with water sprinkler in specific area etc.

  - ✓ Public Hearing was conducted at project site on dated: 20.07.2021. Major issues were raised during the public hearing was discussed. Looking to time bound action plan for issues raised during public hearing in orally as well as written complaints not addressed, Committee insisted for submission of it.

  - ✓ Product profile with its end use discussed in depth. Looking to proposal of organic products proposal in inorganic plant, Committee insisted for revised area adequacy with land break up for area requirement for existing and proposed manufacturing plant as well as its storage facility considering

its production capacity and area proposed for it with technical details.

- ✓ Source of water will be private water tanker.
- ✓ Domestic Waste water will be treated in soak pit and septic tank. Committee insisted for revised domestic waste water proposal other than soak pit and septic tank.
- ✓ Industrial waste water from scrubber and utility will be treated in ETP and treated effluent will be reused back in process for gardening purpose and reused back in process. Looking to unit located outside notified area and mentioning treated effluent for usage as gardening within premises, Committee insisted for treated effluent disposal other than gardening purpose within premises considering location of proposed project.
- ✓ Agro Briquettes/ White Coal as fuel will be used in furnace, HAG and TFH. Looking to fuel consumption, Committee insisted for revised APCM and stack height for existing as well as proposed solid fuel fired boiler, furnace, HAG and TFH and revised flue gas emission matrix.
- ✓ Alkali scrubber as APCM proposed for each reactor stack. Committee insisted for revised APCM like two stage scrubber, reised stack height and revised process gas emission matrix for probable pollutant like H_2S, HCl, SO_2 considering project located at outside notified area, in place of single stage scrubber.
- ✓ PP submitted hazardous waste matrix mentioning source of generation, quantity and Mode of disposal and committed to comply the Hazardous and Other Wastes (Management and Transboundary Movement) Rules' 2016.
- ✓ Fire hydrant plan, fire load calculation and siting criteria, risk assessment, ToR compliance and safety measures was discussed. Committee insisted for submission of following documents

    1. CRZ map super imposition on proposed project Google map with mentioning applicability of CRZ for proposed project.
    2. Revised concrete proposal for CER activity related to Environment field considering need base in surrounding villages in place of general activity and also revised EMP with mentioning adequate fire and safety measures like online detector sensor for H2S, revised APCM, fire extinguisher like foam cost, fire hydrant network cost.

- ✓ Looking to ToR compliance for renewable energy , Committee insisted for readdress specific ToR No-8 with mentioning number of solar panel and its cost as part of renewable energy proposed for project.
- ✓ EMP, Green belt, CER, LDAR, Baseline data etc. was discussed.

- ✓ Also technical expert of PP have not presented risk assessment for oleum and other Hazardous chemical storage and its handling, Committee insisted for risk assessment of oleum storage & its handling considering worst case scenario of any blast, leakage or fire and super impose of satellite image for dispersion model with mentioning its impact on surrounding village's residential habitat area and its mitigation measures. Also standard operating procedure (SOP) for handling and storage of oleum and emergency spare storage tank for oleum storage and details of offsite emergency plan details considering population affected due to proposed Hazardous chemicals storage along with its remedial measures.

- **<u>After detailed discussion, Committee unanimously decided to consider the project in one of upcoming meeting only after submission of following documents,</u>**

1. Copy of latest Honorable Gujarat High court stay order for preparation of EIA/EMP report with mentioning validity period.
2. Technical clarification regarding non compliance of existing CCA specific conditions for using virgin acid and not usage of any type of Hazardous waste for inorganic products manufacturing process but proposal of Hazardous waste disposal showing spent HCl, NaSH solution from proposed products will be utilized for existing inorganic products manufacturing.
3. Submit revised layout plan with mentioning colour coding for existing inorganic and proposed organic manufacturing plant, storage of oleum with spare tank storage and other chemicals storage as per its type of hazard and compatibility chart, remove labour quarter mentioned in layout plan area, fire hydrant network with water sprinkler in specific area etc.
4. Time bound action plan for compliance of issues raised during public hearing in orally as well as written complaints in place of simply mentioning that unit will comply to the GPCB CTE/CCA conditions.
5. Readdress specific ToR No-8 with mentioning number of solar panel, its technical details and its cost adoption as part of renewable energy proposed for project.
6. Submit CRZ map super imposition on proposed project Google map with mentioning applicability of CRZ for proposed project.
7. Revised concrete proposal for CER activity related to Environment field considering need base in surrounding villages in place of general activity and also revised EMP with mentioning adequate fire and safety measures like online detector sensor for H2S, revised APCM, fire extinguisher like foam cost, fire hydrant network cost.
8. Risk assessment of oleum and other Hazardous waste storage & its handling considering worst case scenario of any blast, leakage or fire and super impose of satellite image for dispersion model with mentioning its impact on surrounding village's residential habitat area and its mitigation measures. Also standard operating procedure (SOP) for handling and storage of oleum and emergency spare

storage tank for oleum storage and details of offsite emergency plan details considering population affected due to proposed Hazardous chemicals storage along with its remedial measures.

9. Revised proposal of treated effluent disposal other than gardening purpose within premises considering location of proposed project and domestic waste water disposal other than soakpit and septic tank.
10. Revised APCM and stack height for existing as well as proposed solid fuel fired boiler, furnace, HAG and TFH and revised flue gas emission matrix .
11. Revised APCM like two stage scrubber, reised stack height and revised process gas emission matrix for probable pollutant like H_2S, HCl, SO_2 considering project located at outside notified area, in place of single stage scrubber.
12. Submit project details in latest SEAC prescribed B1 project format in place of old prescribed format.

3.	SIA/GJ/IND2/59261/2020	**M/s.Transworld Furtichem Pvt. Ltd. (TFPL).** Plant at Plot No. 353 & 367, Sector-IV, KSEZ, Gandhidham, Taluka- Anjar, District-Kutch, State-Gujarat – 370210.	Appraisal

Category of the unit: 5(a)

Status of the project: Expansion

- PP has submitted online application vide no. SIA/GJ/IND2/59261/2020 dated 01.12.2021 for obtaining Environmental Clearance.
- SEIAA has issued TOR to PP vide letter dated SIA/GJ/IND2/19860/2017 dated 16.10.2018 and its amendment on dated 27.08.2020.
- Project proponent has submitted EIA Report prepared by M/s. EQMS INDIA PVT. LTD based on the TOR issued by SEIAA.
- This is an existing unit of NPK Granulated mixture (Formulation) plant and now proposed for manufacturing of fertilizers as mentioned below:

Sr. No	Particulars	Unit	Details		
			Existing	Additional Proposed	Total after Expansion
1.	All grade NPK Granulated mixture (Formulation)	TPM	9000	-	9000
2.	Single super phosphate (SSP) OR Granular Single Super phosphate (GSSP)	TPM	-	6000	6000
Total					15000 TPM*

As per season, the demand of products pattern changes and accordingly products will be manufactured. All the products will not be manufactured at a time. The likely production capacities of the products will depend upon demand but limited to the sanctioned capacity.

- The project falls under B1 category of project activity 5(a) as per the schedule of EIA Notification 2006.
- PP was called for Video conference meeting for presentation on dated 07.01.2022.
- Salient features of Water, Air and Hazardous waste management are as under,

Sr. no.	Particulars	Details
A-1	Total cost of Proposed Project (Rs. in Crores):	

Existing	Proposed	Total
-	Rs. 5 Crores	Rs. 5 Crores

BREAK-UP OF PROPOSED PROJECT COST:

Details	Existing(Rs. In Crores)	Proposed(Rs. In Crores)	Total(Rs. In Crores)
Land	-	0	0
Building	-	0	0
Machinery	-	4.19	4.19
Env. & Safety	-	0.81	0.81
Miscellaneous	-	0	0
Total	-	5	5

A-2	Details of Environmental Management Plan (EMP)	As below:

Sr. No.	Unit	Detail	Capital Cost (Rs. In Lakhs)	Operating Cost (Rs. In Lakhs)	Maintenance Cost (Rs. In Lakhs)	Total Recurring Cost (Rs. In Lakhs)
1.	Wastewater	Modular STP, Plant Drainage system and routine environmental mentoring etc.	5	1	0	1
2.	Air	APCD, periodic monitoring the emissions and ambient air quality monitoring, dust pollution	20	0	2	2
3.	Hazardous Management	Disposal of spent oil, e-wastes, etc), Capital cost would include cost of providing storage space for hazardous waste, Pavement of storage area. Recurring cost would include cost of transportation & disposal	5	0	1	1
4.	Fire &	Fire Hydrant & Pipeline	10	0	2	2

	Safety	System, Fire Extinguisher, Safety Equipment, PPES, PLC/DCS				
5.	AWH Monitoring	pH meter, COD apparatus, Balance, Glassware etc.	3	0	0.5	0.5
6.	Green Belt Development	Green Belt (Compensatory Plantation)	13	0	2	2
7.	Occupational Health	First Aid facility	10	0	1	1
8.	Noise Pollution Control	Acoustic treatment of compressors, mills, etc), routine noise monitoring	5	0	1	1
9.	CER	Social upliftment	10	0	0	0
Total			81	1	9.5	10.5

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.

A-3	Details of CER -

PP shall carry out CER activities as below:

Details of expenditure for CER activities:

Cost of proposed expansion Rs. 5 Crores

Expenditure earmarked towards CER:Rs. 10 Lakhs(2% of Expansion Cost)

The detailed expenditure break-up of above activities for the one year are given below:

Detailed expenditure break-up for CER activities

Sl. No.	CER Activity	Capital Cost (Rs. In Lakhs)
• 1.	• Providing Scholarship to 100 poor students	• 1.0
• 2.	• Providing schoolbags/ uniform to 100 poor students	• 1.0
• 3.	• Community Plantation in Gram Panchayat Land	• 4.0
• 4.	• Providing sport kit to 50 students	• 2.0
• 5.	• Providing Solar Lights to 5 Gram Panchayat	• 2.0
• Total		• 10.0 Lakhs

B	Land / Plot ownership details:
B-1	Plot area

Existing	Proposed	Total

	9600 sqm	----	9600 sqm

B-2 AREA ADEQUACY

Total area of the plot is 9600 m^2. Entire process area will cover 4070.86 m^2 of land. Other land requirement is for office, lab, green area, parking area and storage of raw materials and finished products etc. Land requirement for the project including its breakup for various purposes is provided in EIA Report.

S. No	Particulars	Details (in m^2)	% Contribution
1.	Main factory shed	4070.86	42.40
2.	Guard room	17.47	0.18
3.	Meter room	17.47	0.18
4.	Admin building	256.00	2.67
5.	W.C bath & Urinal block	56.44	0.59
6.	Workshop	47.50	0.49
7.	Diesel generator shed	37.44	0.39
8.	Parking shed	77.29	0.81
9.	Green Belt area	670.00	6.98
10.	Open area & others	4349.53	45.31
Total Area		9600.00	100

- Hence, adequate area is available for proposed new Facility.

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.

1)

B-3 Green belt area

Particulars	Existing	Proposed (Sq. meter)	Total (Sq. meter)	Remarks *
Area in Sq. meter	670	2498*	3168	Because of the design strain and land availability the greenbelt can be developed within the plant is 670 m^2 in the plant. The site is surrounded by other industries in three sides. However, in compliance to MoEF&CC norms for green area of 33% of plot area, TFPL will develop approx. 2500 m^2 of green area in surrounding Kandla Special Economic Zone (KASEZ) Industrial Area/Gram Panchayat/Municipal areas.
% Of total area	7	26	33	

Comments:

The condition shall be given that -

The PP shall develop green belt (670 Sq. M within premises and 2498 sq. Metet outside premises in KSEZ area 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
160 nos.	20 nos.	180 nos.

-

D WATER

D-1 Source of Water Supply

- Development Commissioner, KASEZ, Ministry of Commerce and Industry, Gandhi Dham, Kutch, Gujarat

Comments:

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

D-2 Water consumption (KLD)

-

Category	Existing (KLD)	Proposed (Additional) KLD	Total after Expansion KLD	Remarks
(G) Domestic	3.5	0.5	4	Fresh
(H) Gardening	3	0	3	Fresh
(I) Industrial				
Process	0	52.4	52.4	Fresh&Recycle Use
Washing	0	1	1	Fresh
Industrial Total	0	53.4	53.4	--
Grand Total (A+B+C)	6.5	53.9	60.4	--
Less Recycle	0	13	13	--
Fresh water requirement	6.5	40.9	47.4	--

Comments:

2. 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 (Additional) KLD	Total after Expansion KLD	Remarks
(D) Domestic	2.7	0.3	3	To Modular STP*
(E) Industrial				
Process	0	12	12	Direct Recycle in Process
Washing	0	1	1	
Total Industrial wastewater	0	13	13	--

Total (A + B)	2.7	13.3	16	

**Treated water from Modular STP will reused for gardening in roadside/surrounding greenbelt outside TFPL.*

Comments:

1. 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 wastewater disposal & facility (For Domestic after proposed expansion)

Domestic: 4 KLD of domestic sewage will be treated in modular STP. Treated water from Modular STP will be reused for gardening in roadside/surrounding greenbelt outside TFPL.

Comments:

1. Domestic wastewater generation shall not exceed 4 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
2. Unit shall provide STP with adequate capacity.

1)

D-5	Break-up of wastewater disposal & facility (For Industrial after proposed expansion)

13 KLD (Process Effluent- 12 KLD; Washing Wastewater- 1 KLD) of industrial effluent will be completely reused back into the process.

Comments:

Total Industrial Effluent generation: 13 KLD

- 13 KLD generated industrial wastewater will be reuse back within premises.

1. Unit shall provide STP and ETP with adequate capacity.

E	AIR
E-1	Power (Electricity) requirement: After expansion: 500 kVA
E-2	Flue gas emission details

- Existing & 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)
EXISTING						
1	DG Set (1x180)	5	HSD	30 Lit/hr (For Backup Purposes)	SPM, SO_2, NO_X	Appropriate Stack Height
PROPOSED						
2.	DG Set (1x200 kVA)	5	HSD	40 Lit/hr (For Backup Purposes)	SPM, SO_2, NO_X	Appropriate Stack Height

-

E-3	Process gas Emissions

- Existing & Proposed

Sr. no.	Specific Source of emission (Name of the Product & Process)	Type of emissions i.e. Air Pollutants (SO2, HCl, Cl etc.)	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
EXISTING				
1	Dryer-1 & Cooler Drum	SPM, SO_2, NO_X	23	Cyclone Separator
2	Dryer-2		20	Twin Cyclone Separator
PROPOSED				
1	SSP Stack	SPM,SO_2, NO_X	21	Cyclone separators, Venturi scrubbers and Four-stage Scrubbing Towers
2	Rock Drying Section/Grinding Section	PM	30	Cyclone Separator
3	Granulation Section	PM	40	Cyclone Separator

E-4	Fugitive emission details with its mitigation measures.

- Material handling and milling of rock phosphate are being carried out in closed buildings.
- Good housekeeping practices are being kept in place.
- Regular monitoring for ambient air for prescribed parameters as applicable is being carried out besides groundwater monitoring for applicable parameters.
- Preventive measures like SOP, Work Permit System, and Physical inspection / Monitoring of equipment are taken to eliminate the chance of accident on account of explosion, spillages, fire or hazardous substances etc.
- Bag Filters and ID fans are provided for collecting fugitive emissions for recycle into process.
- Airborne dust at all transfers operations/ points are controlled either by spraying water or providing enclosures.
- Regular maintenance of valves, pumps and other equipment are being done to prevent leakages and thus minimizing the fugitive emissions of VOCs.
- Entire process is carried out in the closed loop with proper maintenance of pressure and temperature.
- Periodic monitoring of work area is being carried out to check the fugitive emission.
- When monitoring, if results indicate parameters above permissible limit, necessary correction/corrective action is being done immediately. The repair is conducted in such a way that there is no fugitive emission from the component.

Comments for E2, E3 & E4:

1. 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.
2. 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, D G set and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	Hazardous waste
F-1	Hazardous waste management matrix

Sr. no.	Type/Name of Hazardous	Specific Source of generation (Name of the	Category and Schedul	Quantity (MT/Annum)			Management of HW
				Existin	Propose	Total	

	waste	Activity, Product etc.)	e as per HW Rules.	g	d		
1	Discarded Container/ barrels	From Stores/ Drum yard	33.3	2500 nos./yr	-	2500 nos./yr	Sale to authorized recycler
2	Spent/Used Oil	From D.G. set	5.1	0.1 MT/yr	-	0.1 MT/year	Sale to authorized recyclers/Reuse for lubrication for soil.
3	H_2SiF_6	From scrubber	Non-Hazardous	-	56 MTPA	56 MTPA	Reuse
4	APCM Residue	APCS	Non-Hazardous	300 MT/yr	-	300 MT/yr	Reused

Comments:

1. 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.
2. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

F-2	Non- Hazardous wastemanagement matrix

NOT Applicable

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

- No use of any solvent

G-2	LDAR proposed:

- Not Applicable

G-3	VOC emission sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- Not Applicable

H	SAFETY details after proposed expansion
H-1	Details regarding storage of Hazardous chemicals

Sr. no.	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
1	Sulphuric Acid	10.0 KL	1	Corrosive

STORAGE OF HAZARDOUS CHEMICALS IN TANKS

- Only major hazardous chemical to be stored at the project site is Sulphuric Acid 98% with specific gravity 1.84. Spent sulphuric acid may be considered for use based on availability and project viability.
- Acid will be stored in 1000 kL storage tank and 25 kL capsule MS service tanks.

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

- Proper ventilation will be provided in storage area.
- Proper label and identification board /stickers will be provided in the storage area.
- Drum handling trolley/stackers/forklift will be used for drum handling.
- Materials will be stored as per its compatibility study and separate area will be made for flammable, corrosive and toxic chemical drums storage.
- Smoking and other spark, flame generating item will be banned from the Gate.
- Static earthing will be provided.
- SS flexible hose/conductive hose will be used.

SAFETY DETAILS OF HAZARDOUS CHEMICALS

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	Not applicable
CORROSIVE& CHEMICALS	Safety during storage: • Containers and equipment used for storage and processing of corrosive material will be corrosion resistant. • It will be stored separately from each other. • Oxidizing acids will be separated from organic acids and flammable/ combustible materials Safety during handling: • Appropriate personal protective equipment (e.g., gloves, fire-resistant or all cotton lab coat, and safety goggles) will be provided when working with corrosive chemicals. • A face shield, rubber apron, and rubber booties will be provided depending on the work performed. • Appropriate protective gloves that are resistant to permeation or penetration from corrosive chemicals will be selected and tested for the absence of pin holes prior to use. • Eyewashes and safety showers will be readily available in areas where corrosive chemicals are used and stored. • In the event of skin or eye contact with a corrosive chemical, the affected area should be immediately flushed with water for 15 minutes. Contaminated clothing should be removed and medical attention sought. Appropriate spill clean-up material will be available in areas where corrosive chemicals are used and stored.
TOXIC CHEMICALS	Not applicable
REACTIVE CHEMICALS	Not applicable

- Applicability of PESO: Not applicable

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

H-3	Details of Fire Load Calculation

Total Plot Area:	9600 m^2
Area utilized for plant activity:	5070.86 m^2
Area utilized for Hazardous Chemicals Storage:	0
Number of Floors:	Ground Floor
Water requirement for firefighting in KLD:	Total Area for process storage = 5070.86 m2 Water requirement in LPM: 1175/20 = 253.5 LPM (Fire Load) Water requirement = 253.5 x 120 (for 2 hrs.) = 30,420 ltr. (30.42 KL)
Water storage tank provided for firefighting in KLD:	U/G water tank – 30 kL
Details of Hydrant Pumps:	7.5 HP Jockey pump
Nearest Fire Station:	KASEZ Fire Station (0.98 km, NE)
Applicability of Off-Site Emergency Plan:	Yes (Provided in EIA Report)

Comments:

The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 30 KL. SEAC found it as per the requirement.

H-4	Details of Fire NOC/Certificate:

Not Applicable

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

-Number of permanent Employee:	60 no.
Number of Contractual person/Labour:	120 no.
Area provided for OHC:	30 m^2
Number of First Aid Boxes:	1 no.
Nearest General Hospital:	Civil Hospital (0.7 km, N)
Name of Antidotes to be store in plant:	Not Applicable

Comments

1) 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.

- During the SEAC Video conference meeting dated 07.01.2022, Project Proponent (PP) and their technical expert and EIA consultant from M/s. EQMS INDIA PVT. LTD remains present and made technical presentation before the Committee.
- During the meeting, the project was appraised based on the information furnished in the EIA Report and details presented during the meeting.
- 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 2018 to

December 2018. Ambient Air Quality monitoring was carried out for PM_{10}, $PM_{2.5}$, SO_2, NOx, CO, HF and HC at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD model". The resultant concentrations are within the NAAQS. The modeling 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). All the results of ground water sample taken from studied locations, meet with permissible limit of drinking water as per IS: 10500:2012.

- Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detail proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
- Upon asking regarding QCI/NABET accreditation for preparation of EIA preparation for proposed project, technical expert of PP informed that they have QCI/NABET accreditation for preparation of EIA/EMP report as per the amended EIA Notification vide S.O. 648 (E) Dated 03.03.2016.
- This is an existing unit of NPK granulated formulation plant and proposed for manufacturing of fertilizers at Plot No. 353 & 367, Sector-IV, KSEZ, Gandhidham, Taluka- Anjar, District-Kutch. Unit is having Valid CCA of the Board for existing plant. PP submitted CC&A compliance report for existing plant. Product profile with its end-use is discussed in depth. Source of water supply is KASEZ, Ministry of Commerce and Industry, Gandhi Dham, Kutch. Committee noted that PP has addressed there is no legal court case, public complaint and no legal action taken by GPCB in last three years.
- Committee noted that PP submitted document regarding no applicability of public hearing for proposed project site.
- Deliberation of the Committee:
  - ✓ Upon asking regarding raw material rock phosphate procurement for proposed fertilizer , PP informed that they will procure from outside country and fresh sulphuric acid from local market.
  - ✓ It is noted that proposal involves voluminous raw material for making SSP and GSSP. From the process, 13 KLD waste water is generated from plant which is recycled back. Hence there will be no disposal of waste water outside the premises. It is noted that PP has proposed STP and 3 KLPD of treated sewage water will be used for gardening.
  - ✓ Sewage will be treated in STP and further reused for gardening. It is noted that during process, emission of fluorine emission takes place which is scrubbed in scrubber. Saturated scrubber liquor (Bleed Liquor) contains H2SIF6 which is addressed under Hazardous waste rules 2016.
  - ✓ Site Plan/ layout with fire plan & floor plans and provision of separate entry & exits, 6 m wide peripheral road, distillation area, OHC, tank farm, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, fresh & spent solvent storage

areas, hazardous waste storage area, 7% greenbelt within premises and 26% greenbelt outside premises in KASEZ area, etc. Committee noted that PP submitted request letter to KASEZ for 2498 sq. meter greenbelt area at KASEZ and is under process for permission of greenbelt area allocation.

- ✓ Source of water will be KASEZ.
- ✓ Domestic Waste water will be treated in STP and treated sewage used for gardening within premises.
- ✓ HSD is proposed as fuel in DG set.
- ✓ Cyclone separator and ventury scrubber is proposed as APCM for SSP stack.
- ✓ PP submitted hazardous waste matrix mentioning source of generation, quantity and Mode of disposal and committed to comply the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
- ✓ Fire hydrant plan, Water balance diagram and Area adequacy was discussed.
- ✓ Looking to area adequacy for proposed fertilizer plant in existing facility, Committee asked for justify regarding it and PP addressed area adequacy and informed that secure distance between existing and proposed facility will be provided.
- ✓ Baseline data, green belt within premises, EMP and CER etc was discussed.

- **After detailed discussion, it was decided to recommend the project to SEIAA Gujarat for grant of Environmental Clearance.**

SPECIFIC CONDITIONS:

1. PP shall keep secure distance between existing formulation plant and proposed fertilizer plant, as per layout plan submitted by PP.
2. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
3. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
4. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
5. The project proponent must strictly adhere to the stipulations made by the Gujarat Pollution Control

Board, State Government and/or any other statutory authority.

6. All measures shall be taken to avoid ground water and soil contamination within premises.

7. 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].

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

9. Generated Hydrofluoro Silicic acid (H2SiF6) from the scrubbing system shall be completely recycled in the process within premises and in no case it shall be sold outside. Recovered precipitated silica shall be used as filler in the product.

10. PP shall use fresh sulphuric acid as raw material for proposed project, as per details submitted by PP.

11. Complete Zero Liquid Discharge (ZLD) shall be maintained all the time and there shall be no drainage connection within premises and no waste water discharge outside premises by any means.

WATER

12. Total water requirement for the project shall not exceed 60.40 KLD. Unit shall reuse 13 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 47.40 KLD and it shall be met through KASEZ water supply only. Prior permission from concerned authority shall be obtained for withdrawal of water.

13. No ground water shall be tapped for the project requirements.

14. The industrial effluent generation from the project shall not exceed 13 KLD after expansion.

15. Total Industrial effluent generated from process and washing shall be completely recycled back in process without any treatment.

16. Domestic wastewater generation shall not exceed 3 KL/day for proposed project and it shall be treated in STP. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.

17. 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.

AIR

18. Unit shall not exceed fuel consumption and provide APCM and Stack height as mentioned in flue gas matrix.

19. Unit shall provide APCM and stack height as mentioned in process gas matrix.

20. Online monitoring system shall be installed on the flue gas and process stacks to monitor the pollutant concentrations. An arrangement shall also be made for reflecting the online monitoring results on the company's server, which can be accessed by the GPCB on real time basis.

21. Adequate stack height as per prevailing norms shall be provided for the flue gas and process emissions.

22. The air pollution control systems shall be operated efficiently and effectively to achieve the norms prescribed by the GPCB/CPCB at vent / stack outlets. At no time, emission level should go beyond the stipulated standards.

23. The company shall prepare schedule and carry out regular preventive maintenance of APCMs and assign responsibility of preventive maintenance to the senior officer of the company.

HAZARDOUS & SOLID WASTE

24. All hazardous/Nonhazardous waste solid waste shall be managed as mentioned in hazardous waste matrix.

25. 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.

26. 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 from the GPCB must be obtained for collection / treatment / storage / disposal of hazardous wastes.

27. The hazardous wastes shall be stored in separate designated hazardous waste storage facility with pucca bottom and leachate collection facility, before its disposal.

28. Wet scrubber sludge & dust from MCS shall be reused in the process as filler / mixed in the product.

29. Vehicles used for transportation of hazardous waste shall be in accordance with the provisions under the Motor Vehicle Act, 1988, and rules made there under.

OTHERS:

30. In the event of failure of any pollution control system adopted by the unit, the unit shall be safely closed down and shall not be restarted until the desired efficiency of the control equipment has been achieved.
31. A separate Environment Management Cell equipped with full fledged laboratory facilities and qualified personnel shall be set up to carry out the Environment Management and Monitoring functions and a separate budget shall be allocated for this purpose.
32. The project authorities must strictly adhere to the stipulations made by the Gujarat Pollution Control Board (GPCB), State Government and any statutory authority.
33. During material transfer, spillages shall be avoided and garland drain be constructed to avoid mixing of accidental spillages with domestic wastewater or storm water.
34. Pucca flooring / impervious layer shall be provided in the work areas, chemical storage areas and chemical handling areas to minimize soil contamination.
35. Leakages from the pipes, pumps, shall be minimal and if occurs, shall be arrested promptly.
36. No further expansion or modifications in the plant likely to cause environmental impacts shall be carried out without obtaining prior Environment Clearance from the concerned authority.
37. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act,1974, Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016 and the Public Liability Insurance Act, 1991 along with their amendments and rules.
38. The project proponent shall comply all the conditions mentioned in "The Companies (Corporate Social Responsibility Policy) Rules, 2014" and its amendments from time to time in a letter and spirit.

GREENBELT AREA

39. The PP shall develop green belt within premises (670 sq. m i.e. 7 % within premises and 2498 sq. meter 26% outside premises in KASEZ area 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 Forest Department and GPCB.

Safety & Health:

a) PP shall provide Occupational Health Centre (OHC) with full time medical officer appointed for OHC within premises 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 water and foam pouring system and the same shall be ensured by PP.

f) 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.

g) 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.

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

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

4.	SIA/GJ/IND2/65872/2020	**M/s. RAVI CHEM INDUSTRIES** Plot No. 7402 & 7403, GIDC Industrial Estate, Ankleshwar – 393002, Dist – Bharuch	Appraisal

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

Project status: **Expansion**

- Project proponent (PP) has submitted online application vide no. SIA/GJ/IND2/65872/2020 on dated 01.12.2021 for obtaining Environmental Clearance.
- ToR issued by MoEF& CC to PP vide letter no.- IA-J-11011/158/2020-IA-II(I)& dated 24/7/2020.
- Project proponent has submitted EIA Report prepared by M/s. ECOgreen ENVIRO SERVICES based on the TOR issued by SEIAA.
- This is an existing unit and proposed for expansion in manufacturing of synthetic organic chemicals as mentioned below:

Sr. No.	NameoftheProducts	CASNo.	Quantity(MT/Month)			End-use of theproducts
			Existing	Proposed	Total	
1.	Basic Yellow 2(AuramineO)	24655-27-2	12	38	50	Dyes&PigmentIndustries
2.	Basic Violet 3 (MethylViolet)(Liquid)	67939-65-5	-	100 (Either Individual orTotal)	100 (Either Individual orTotal)	Dyes&PigmentIndustries
3.	BasicViolet 1(Liquid)	8004-87-3	-			Dyes&PigmentIndustries
4.	BasicGreen4 (MalachiteGreen)(Liquid)	41272-40-6	-			Dyes&Pigment Industries
5.	Basic Green 1 (DiamondGreen)(Liquid)	633-03-4	-			Dyes&PigmentIndustries
6.	BasicBlue7 (VictoriaBlue)(Liquid)	2390-60-5	-			Dyes&PigmentIndustries

Total			12.0	138.0	150.0	
7.	R&D Products		-	100 kg/Month	100 kg/Month	Dyes&PigmentI ndustries

 # Brief Note of Product Profile:

3. **No of Manufacturing Plants: 2 nos.**
4. **Brief Note regarding number of Products to be manufactured considering plant capacity: 2-3 Products Considering 6 TPD Plant Capacity**

- The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
- PP was called for Video conference meeting for presentation on dated 07.01.2022.
- PP submitted revised salient features of water, air and Hazardous waste management as under,

Sr. no.	Particulars	Details
A-1	Total **cost of Proposed** Project (Rs. in Crores):	

Existing	Proposed	Total
0.25 Crores	**1.39 Crores**	**1.64 Crores**

Break-up of proposed project Cost:

Details	Project Cost (Rs. In Crores)
Land	0.0
Building	0.50
Machinery	0.30
Env. & Safety	0.56
Miscellaneous	0.025
Total	**1.385 ~1.39**

-

A-2	**Details of Environmental Management Plan (EMP)**	As below:

-

Sr. No	Unit	Detail	Capital Cost (Rs. In Crore)	Operating Cost (Rs. In Crore)	Maintenance Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)
1.	Waste Water	Stripper : 11 KLD STP: 4 KLD ETP modification	0.06	0.003	0.0003	0.0033
2.	Air	Scrubber: 1 nos, LDAR, stacks, vent and other modifications.	0.068	0.007	0.001	0.008
3.	Hazardous Management	Membership Charges Disposal &	0.01	0.005	--	0.005

		Transportation Charges				
4.	Fire & Safety	Fire Hydrant & Fire Safety	0.11	0.001	0.0002	0.0012
		PPES & Proximity Suit	0.03	0.0015	0.0005	0.002
		DCS & Electrical fittings (Flameproof)	0.2	0.008	0.002	0.01
		Fire Extinguishers & Foam Type Trolley	0.013	0.0002	0.0006	0.0008
5.	Green Belt Development	65 Trees	0.005	0.0005	0.0003	0.0008
6.	Occupational Health	OHC and medical checkup. and OHS Training & Mis	0.025	0.002	0.0005	0.0025
7.	Noise Control	Acoustic enclosure & Silencer & Vibration pads & Noise PPEs	0.035	0.002	0.001	0.003
8.	CER Funds	1.2 % of project cost	0.02	0.001	0.001	0.002
Total			**0.576~0.58**			**0.0386~0.04**

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.

A-3	**Details of CER** -

PP shall carry out CER activities as below:

- ✓ Project cost: 1.64 Cr.(Existing +Proposed)
- ✓ Total fund Proposed for CER: 2.0 lac (on the basis of need assessment)

Rain water recharging at Fate Talav- Village Jitali

2 Nos. Recharging well system @ Rs. 1 lac each

B	**Land / Plot ownership details:** ➢ The plot has been allotted through GIDC Ankleshwar vide letter no.GIDC/RM/ANK/2831 on dated 19th Aug 2017.
B-1	**Plot area**

Existing	Proposed	Total
2000 Sq. m.	**0 Sq. m.**	**2000Sq. m.**

-

B-2

Area adequacy

S.N.	Particular	Qty. in MT/KL	Remark	Area required	Area proposed	Ground Floor	1st Floor (in Sq.

				(in Sq. M.)	(in Sq. M.)	(in Sq. M.)	M.)
1	Security -1	--	--	6	6	6	--
2	Security -1	--	--	6	6	6	--
3	F.G	40 MT	1 Week inventory	40	50	50	50
4	R. M.	75 MT	3 Days inventory	80	90	--	90
5	Tank (NonPESO) storage	40 KL (10 KL x 4)	At a time	45	55	55	--
6	Drum storage	35 KL (175 Nos)	At a time	85	90	90	--
7	Cylinder storage (oxygen gas)	0.5 M3	O2 cylinder	5	10	10	--
8	Haz. waste storage area	60 MT	90 days inventory	50	60	60	--
9	ETP + STP	15 KLD + 4 KLD		19	20	20	--
10	Proposed Plant building	6 MT/day		130	260	130	130
11	Existing Plant Building			130	260	130	130
12	Boiler & Utility	1 TPH boiler + cooling tower 5 TR		15	20	20	--
13	Admin building	--	--	30	60	30	30
14	Road Area	6.0 Mt wide road		605.5	605.5	605.5	--
15	OHC	OHC area 16 sq. m.		16	16	16	--
16	Open area	--	--	81.5	81.5	81.50	--
17	passage area	--	--	30	30	30	--
18	Green Belt @ 33 %	33% of total Plot area 2000 sq. m.		660	660	660	--
Total				**2034**	**2380**	**2000**	**430**

Remark: Hence, proposed area 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	400	260	660
% of total area	20%	13%	33%

Comments:

The condition shall be given that -

The PP shall develop green belt (660 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
15	15	30

-

D **WATER**

D-1 **Source of Water Supply**

- 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 (Additional)** KLD	**Total after Expansion** KLD
(J) Domestic	3.0	0.5	3.50
(K) Gardening	0.50	1.90	2.40

	(L) Industrial	
Process	10.26	0.0	10.26
Washing	0.10	0.10	0.20
Boiler	1.0	23.0	24.0
Cooling	0.13	0.47	0.60
Others	0.01	0.14	0.15
Industrial Total	**11.50**	**23.71**	**35.21**
Grand Total (A+B+C)	**15.0**	**26.11**	**41.11**

-

Comments:

1. 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 (Additional)** KLD	**Total after Expansion** KLD
(F) Domestic	3	0.30	3.30
(G) Industrial			
Process	10.79	0.21	11.0
Washing	0.10	0.10	0.20
Boiler	0.35	0.45	0.80
Cooling	0.01	0.04	0.05
Others	-	0.15	0.15
Total Industrial waste water	**11.25**	**0.95**	**12.20**
Total waste water	**14.25**	**1.25**	**15.50**

-

Comments:

1. 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 after proposed expansion)

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

Comments:

1. Domestic wastewater generation shall not exceed 3.30 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.
2. Unit shall provide STP with adequate capacity

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

-

Sr. no.	Quantity KLD	Facility
1.	11.0	Will be sent to ammonia stripper to primary ETP and then CETP.
2.	0.25	Will be send to primary ETP and then CETP.
3.	0.15	Scrubbing solutions will be sell to end users.
4.	0.8	Boiler blow down wastewater will be reused in washing and cooling.
Total	12.2	

Comments:

Total Industrial Effluent generation: 12.20 KLD

- 0.8 KLD generated industrial wastewater (Boiler) will be reuse in washing within premises.
- 11.25 KLD generated industrial wastewater (Process) will be treated in ETP and then send to CETP of GESCL.

3. Unit shall provide STP and ETP with adequate capacity.
4. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

E	**AIR**
E-1	Power (Electricity) requirement: **250** KVA
E-2	**Flue gas emission details**

- **Existing & 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.	Stream Boiler (1 TPH) (Proposed)	30	Natural Gas	1540 SCM/Day	PM <150 mg/Nm^3 SO_2 < 100 ppm NOx< 50 ppm	Adequate Stack height
2.	D.G. Set: 40 KVA (Proposed)	11	HSD	20 Lit/Hr		Adequate Stack height

-

E-3	**Process gas**

- Existing & 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	Reactor-1&Reactor-2 (Amination)(**Existing)**	NH_3< 175 mg/Nm^3	18.00	Two Stage Water Scrubber
2	Reaction vessel (Chlorination) [Mfg.: BasicGreen4(Malachite Green)] **(Proposed)**	HCl < 20 mg/Nm^3	18.00	Two Stage Water Scrubber

-

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

- Minimum number of flanges, joints and valves in pipelines
- Selection / use of state-of-the art leak proof valves
- Provision of mechanical seals in pumps
- Proper preventive maintenance of roofs and seals for tanks

- Monitoring and preventive maintenance of valves, flanges, joints, etc.
- Fugitive emission over reactors, formulation areas, centrifuges, chemical loading, transfer area, shall be collected through hoods and ducts by induced draft and controlled by dust collector.
- For particulate / dust emissions from the coal handling system: Water will be sprinkled to control particulate / dust emission from coal storage area.
- Solid fuel will be received in closed trucks
- Green belt will be developed along the plant premises
- De-dusting system will be provided at solid product finishing area.
- All transfer points will be fully closed.

Overflow system with return line to storage tank from batch tank will be provided to prevent hazardous material overflow.

Comments for E2, E3 & E4:

1. 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.
2. 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, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F	**Hazardous waste**
F-1	**Hazardous waste management matrix**

-

Sr. No.	Type ofHazardousWaste	HazardousWasteCategory&Schedule	Source	Qty.(MT/Year)			Management ofHW
				Existing	Proposed	Total	
1.	ETPSludge	35.3/SCH-I	ETP	7.2	80.8	88.0	Collection,Storage,Transportation,disposalatnearestTSDFsite. (M/s. BEIL,Dahej)
2.	UsedOil	5.1/SCH-I	Maintenanceactivity	0.02	0.08	0.1	Collection,Storage,Transportation&Disposalbyselling toAuthorizedre-refiners orreusedaslubricantwithin premises.

3.	Discarded Containers /Bags/Liners	33.1/SCH-I	RawMaterialSupplier	96.0	200.0	296.0	Collection,Storage,Transportation &Reuse/ Sale toAuthorized Vendor.
4.	ProcessorganicWaste	28.6/SCH-I	Mfg.Process (BasicYellow 2(AuramineO) &BasicGreen 4(MalachiteGreen) (Liquid)	14.0	99.0	113.0	Collection,Storage,Transportation &send to pre/co-processing units(cementindustries) ORdisposalatnearest CHWIFsite.
5.	SpentCatalyst	28.2/SCH-I	Productno.2 to 6	--	23.0	23.0	Collection,Storage,Transportation & disposalatnearest CHWIFsite &send tosendingtoregistered recyclerforregeneration or pre/co - processing units.
6.	Dil.HCL Solution (25-30%)	28.1/SCH-I	ScrubberProcess BasicGreen4(MalachiteGreen)	--	38.0	38.0	Collection,Storage,Transportation &Disposal byselling toAuthorized EndUsers havingpermissionunder Rule-9.
7.	Liq. AmmoniaSolution25-30%	28.1/SCH-I	ScrubberProcess(Basic Yellow 2(AuramineO))	--	18.0	18.0	Collection,Storage,Transportation&Disposalbyselling to Authorized EndUsers havingpermission underRule-9.

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Comments:

1. 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.

F-2	Non- Hazardous waste management matrix

1. Fly Ash generation will be **00**MTPA
2. STP sludge generation will be **37.0** MTPA

Comments:

5.	SIA/GJ/IND2/66092/2021	**M/s. VAGMINE DYESTUFF (UNIT-II)** Plot No. C-1/200, Phase – II, GIDC Vatva, Ahmedabad.	Appraisal

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

Project status: **Expansion**

- Project proponent (PP) has submitted online application vide no. SIA/GJ/IND2/66092/2021 on dated 01.12.2021 for obtaining Environmental Clearance.
- ToR issued by SEIAA to PP vide letter dated 06/04/2021.
- Project proponent has submitted EIA Report prepared by M/s. Satva Environ Consultancy based on the TOR issued by SEIAA.
- This is an existing unit and proposed for expansion in manufacturing of synthetic organic chemicals as mentioned below:

SR. NO	PRODUCT NAME	CI Name/ CAS No.	Existing MT/Month	Proposed MT/Month	Total Proposed MT/Month
1.	Reactive Golden Yellow R	-	2	48	50
2.	Reactive Yellow ME4GL	186	NIL		
3.	Reactive Yellow H7GL	185			
4.	Reactive Yellow GL	37			
5.	Reactive Yellow P6GS	95			
6.	Reactive Yellow GR	15			
7.	Reactive Yellow RNL	Orange 107			
8.	Reactive Yellow 3R	Orange 96			
9.	Reactive Yellow MERL	145			
10.	Reactive Yellow HE6G	135			
11.	Reactive Yellow HER	84			
12.	Reactive Yellow W3R	-			
13.	Reactive Red PB	24			
14.	Reactive Red H4BN	3:1			
15.	Reactive Red P4B	245			
16.	Reactive Red P2B	45			
17.	Reactive Red P6B	218			
18.	Reactive Red BS	111			
19.	Reactive Red HE7B	141			
20.	Reactive Red HE8B	152			
21.	Reactive Red HE3B	120			
22.	Reactive Red BB	21			
23.	Reactive Orange ME2RL	122			
24.	Reactive Orange HER	84			
25.	Reactive Orange H2R	13			
26.	Reactive Orange 3R	16			
27.	Reactive Orange W3R	-			
28.	Reactive Orange GR	72/78			
29.	Reactive Black 5	-			
30.	Reactive Black MIX	-			

31.	Reactive Black WNN	-			
32.	Reactive Blue HER	171			
33.	Reactive Blue P2R	39			
	Total		**2**	**48**	**50**

Note: As per plant and machineries only 04 numbers of products will be manufactured at one time.

- The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
- PP was called for Video conference meeting for presentation on dated 07.01.2022.
- PP submitted revised salient features of water, air and Hazardous waste management as under,

Sr. no.	Particulars	Details
A-1	Total cost of Proposed Project (Rs. in Crores):	

Existing	Proposed	Total
1.0Crores	1.00Crores	2.0 Crores

Break-up of proposed project Cost:

Details	Project Cost (Rs. In Crores)
Land	0.5
Building	0.5
Machinery	0.8
Env. & Safety	0.1
Miscellaneous	0.1
Total	2.0

-

A-2	Details of Environmental Management Plan (EMP)	As below:	

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Sr. No	Unit	Details	Capital Cost (Rs.in Lacs)	Operating Cost (Lacs /Month)	Maintenance Cost (Lacs/ Month)	Total Recurring Cost (Lacs/ Month)
1	Effluent Treatment Plant	Installation of ETP and Common facility	10.0	0.70	0.10	0.80
2	Air	Installation of stack/vent & it"s monitoring facilities including provision of air pollution control system	5.0	0.30	0.10	0.40
3	AWH Monitoring	To conduct EMS efficacy & environment monitoring	-	0.50	-	0.50
4	Hazardous Management	Getting membership of TSDF site	1.0			
5	Green belt development	Development of Greenbelt Area	1.15	-	0.20	0.20

6	Health & Safety	Provision of Occupational Health Centre with Antidotes	5.0	0.5	0.2	0.7
7	Fire Prevention	Provision of Safety Measures including Fire water tank, Fire Detectors, Sensors, Alarm, Fire Hydrant, Fire Extinguishers, Proxymate Suits, Foam Trolley, Lightening arrestors etc.	20.0	1.0	0.5	1.5
8	Other	CER Cost	1.0	-	-	-
		Provision of PLC based SCADA system	10.0	2.6	1.0	3.6
Total			53.15	5.6	2.1	7.7

Comments:

1. 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.

A-3	Details of CER -

PP shall carry out CER activities as below:

- ✓ Installation of Solar lights (04 Numbers) at primary school vinzol village

B — Land / Plot ownership details:

Sr. no	Plot No.	Area	Details
1	C1-200	703	GIDC/RM/AHM/TRF/FTO/VAT1/304 dated 20/10/2020
		703	

B-1 — Plot area

Existing	Proposed	Total
703 Sq. m	NIL	703 Sq. m.

-

B-2 — Area adequacy

Sr No.	Description of Area	Existing Area (m^2)	After Expansion Area (m^2)			Total	Percentage
		Existing	Ground Floor	First Floor	Second Floor		
1	Manufacturing Plant Area	52.6	-	140.16	140.16	280.32	-
2	Lab/ Administration	20	20	-	-	20	2.84
3	Finish Good Storage	26	52.6	-	-	52.6	7.48

	Area						
4	Raw Material Storage Area	26	87.6	-	-	87.6	12.46
5	ETP Area	30	42	-	-	42	5.97
6	ETP Waste Storage area	-	12	-	-	12	1.71
7	Utility Area+ Fuel Storage	30	45	-	-	45	6.40
8	Occupation Health Center	-	15	-	-	15	2.13
9	Open Area (Road & Parking)	498.4	287.38	-	-	287.38	40.88
10	Green belt	20	141.42	-	-	141.42	20.12
	Total Plant Area	703	703				
	Plant Periphery Green belt area	20	20	-	-	20	2.84
	Additional Green Belt Area	-	100	-	-	100	14.2

Sr No.	Description of Area	Criteria for Storage	Inventory Required (MT) (KL)	Area Required (m^2)	Area Proposed (m^2)
1	Finished Product Storage Area (1 Week inventory)	50 MT	12.5	20.0	52.6
2	Raw Material Store area in Drum and Bag (5 days inventory)	21 Drum 1876 Bag	4.20	10.25	87.6
			46.90	60.81	
		Tank for HCL - 2 KL	2 KL	5.0	
3	Effluent Treatment Plant + storage area (90 Day Inventory)	2.5 KLD	2.5 KLD 3 MT	15 8	42 12
4	Utility Area	-	Boiler 0.8 TPH	15	30
5	Fuel Storage (5 Day inventory)	Briquette of agro waste 0.8 MT/Day	4 MT	10	15
6	Adm. Office	-	-	-	20
7	OHC	-	-	-	15
8	Manufacturing Area	50 MT/Month	-	-	210.32

Note: The unit has proposed expansion up to 50 MT/Month for manufacturing of dyes. The

unit has proposed dedicated process area of 280 square meter which is adequate looking to same unit operation. The unit has also proposed raw material storage (87 square meter), product storage (52 square meter) and also proposed area for utility, ADM building and OHS. The unit has proposed 20 % green belt area within premises and 14% outside premises within GIDC. Looking to manufacturing process and as no any highly hazardous utilization, this expansion is justified in existing plot

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	20	221.42	241.42
% of total area	2.8	31.49	34.29

Note : The Unit have Provided 141.42 M^2 (20.0 %) green Belt Area with in Plant Premises Area and 100 M^2 (14.1 %) green belt area outside plant premises within GIDC Vatva as per letter issued by Vatva Industrial Association vide outward number VIA/2021-22/25-B/247 dated 05.01.2022

Comments:

The condition shall be given that -

The PP shall develop green belt (141.42 M^2 (20.0 %) green Belt Area within Plant Premises Area and 100 M^2 (14.1 %) green belt area outside plant premises within GIDC Vatva 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
15	10	25

-

D WATER

D-1 Source of Water Supply

- GIDC Water Supply of vatva.

Comments:

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

D-2 Water consumption (KLD)

-

Sr No	Category	Existing KLD	Additional KLD	Total KLD	Remark
1.	Domestic Purpose	0.5	1.0	1.5	
2.	INDUSTRIAL				
	Process	0.5	8.5	9.0	
	Washing	1.0	1.5	2.5	
	Boiler	1.0	5.0	6.0	
3.	Gardening	-	1.0	1.0	Utilized from STP
	Water Consumption (Domestic)	0.0	1.0	1.5	
	water Consumption (Industrial)	2.5	15.0	17.5	

Summary of water requirement	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD	Remarks
Total water requirement for the project (A)	2.5	17.5	20.0	
Quantity to be recycled (B)	-	4.0	4.0	
Total fresh water requirement (C)	2.5	13.5	16.0	
Ensure Total water requirement = Fresh water + Recycled water i.e. A = B + C				

Comments:

1. 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)

-

Sr No	Category	Existing KLD	Additional KLD	Total KLD	Remark
1.	Domestic Purpose	0.4	0.6	1.0	Send to STP
2.	INDUSTRIAL				
	Process	0.0	0.0	0.0	
	Washing	1.0	1.5	2.5	
	Boiler	0.5	0.5	1.0	
	Total Waste Water Generation (Domestic)	0.4	0.6	1.0	
	Total Waste Water Generation (Industrial)	1.5	2.0	3.5	

Note: There will be no wastewater generation from manufacturing process as the unit will manufactured dye by spray drying technology.

Comments:

	1. 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	Mode of Disposal & Final meeting point (Existing and Proposed)

The generated sewage @ 1.0 KLD will be Utilized in Gardening after treated in STP
Comments:

1. Domestic wastewater generation shall not exceed 1 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.
2. Unit shall provide STP with adequate capacity.

D-5	Break-up of waste water disposal & facility (For Industrial after proposed expansion)

-

Sr. no.	Quantity KLD	Facility
1	1.5	CETP Vatva
2	2.0	Common spray drying Facility of GESCSL, Vatva
Total	3.5	

Comments:

- 1.5 KLD generated industrial wastewater will be treated in ETP-1 (Having Primary & Tertiary Treatment Unit) then send to CETP at GESCL.
- 2 KLD generated industrial wastewater (Process) will be treated in ETP-2 (Having Primary Treatment Unit) then send to Common Spray Drying facility at GESCL for Spray Drying.

5. Unit shall provide STP and ETP with adequate capacity.
6. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

E	AIR
E-1	Power (Electricity) requirement : 450 KWA
E-2	Flue gas emission details

- Existing & Proposed

Sr no	Stack attached to	Stack height in meter	Fuel	Consumption	Operation Hour	APCM	Remark

1	Small industrial Boiler - 0.8 TPH	30	Wood (Removed)	0.2 MT/Day (Removed)	The unit is utilizing boiler for average 1 hour per day after this expansion the unit will utilized boiler around 8 hour/ Day	Multi Cyclone Separato r with Bag Filter	Existin g
			Briquette of agro waste (Proposed after Expansion)	0.8 MT/Day (Proposed after Expansion)			

Note:

- The existing utilizing is adequate to handle proposed expansion by increasing operation hour of existing boiler having capacity of 0.8 TPH

E-3	Process gas

Existing & Proposed
There will be no any process gas emission
-

E-4	Fugitive emission details with its mitigation measures.

- The entire manufacturing activities will be carried out in the closed reactors and regular checking and maintenance of reactors will be carried out to avoid any leakages.
- The tank vents will be equipped with either a carbon filter or an oil trap to prevent water vapour from entering the tank as it breathes.
- All the motors of pumps for the handling of hazardous chemicals will be provided with suitable mechanical seal with stand-by arrangement
- Control of all parameters on a continuous basis will be done by adequate control valves, pressure release valves and safety valves etc.
- All the flange joints of the pipe lines will be covered with flange guards.
- All the raw materials will be stored in isolated storage area and containers tightly closed.
- There will also be provision of adequate ventilation system in process plant and hazardous chemical storage area.

Comments for E2, E3 & E4:

1. 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.
2. 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	Hazardous waste
F-1	Hazardous waste management matrix

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Sr. N	Types of Hazardous Waste	Sources	Categor y	Existin g MT/Ye	Additio n MT/Ye	Ultimate MT/Year	Disposal

o				ar	ar		
1	ETP Sludge	ETP Area	35.3	3.0	2.0	5.0	Collection, storage, Transportation and Dispose to Active TSDF Site
2	Used Oil	Plant Machinery	5.1	0.005	0.005	0.01	Collection, storage, Reuse within premises.
3	Empty barrels/ Container/ Liners contaminated	Material Storage and Handling	33.1	5.0	5.0	10.0	Collection, storage, Transportation and Dispose by selling to Registered Recycler

Comments:

1. 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.
2. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

F-2	Non- Hazardous waste management matrix

2. Fly Ash generation will be 4.80 MTPA
3. STP sludge generation will be1.0 MTPA

Comments:

1. 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.
2. STP sludge shall be collected and used as manure in gardening activity.

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

There will be no any type of solvent required in manufacturing process

G-2	LDAR proposed:

Not Applicable :

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G-3	VOC emission sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- The fugitive emissions in terms of handling losses will get reduced by proper storage and handling.
- Hazardous chemicals will be stored as per standard criteria.
- Periodically monitoring will be carried out as per the post project monitoring plan.
- Proper ventilation in storage & production area shall be ensured
- All materials must be stored in suitable packing to prevent contamination of air.
- Enclosed system & efficient procedures for materials charging shall be ensured.

- Procedures for start-up shut down, operation & maintenance procedures shall be established & maintained.
- The coverage of greenbelt around the plant also acts as natural barrier to stop carrying of dust along with the wind current.

H	SAFETY details after proposed expansion
H-1	Details regarding storage of Hazardous chemicals

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Sr. No	Name of Raw Material	State	Storage Capacity in KL	Number of Tank/ Cylinder	Storage at time (KL)	IDLH ppm	Boiling Point °C	Flash Point °C	Hazard characteristic
1	HCL	Liquid	2	1	2	50	83	-	Corrosive

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

Sr No.	Raw Material Requirement	Cas no.	Quantity In kg Per MT of Product	No. Bag/ Drum/Tank	For 1 Week Requirement MT or KL	Storage
1	Aniline 2,5 DSA	24605-36-5	220	110	2.75	Bag
2	2 Pyridone	110-86-1	190	95	2.38	Bag
3	Caustic soda	1310-73-2	40	20	0.50	Bag
4	Cyanuric Chloride	108-77-0	700	350	8.75	Bag
5	H Acid	9067-32-7	605	303	7.56	Bag
6	HCl	7647-01-0	555	1	2 KL	Tank
7	J Acid	87-02-5	195	98	2.44	bag
8	Liq. Ammonia	1336-21-6	235	14	2.94	drum
9	MPDSA	88-63-1	345	173	4.31	bag
10	N ethyle Aniline	103-69-5	180	11	2.25	drum
11	NaHCO3	144-55-8	330	165	4.13	bag
12	Soda Ash	497-19-8	376	188	4.70	Bag
13	Sodium Acetate	127-09-3	393	197	4.91	Bag
14	Sodium nitrite	7632-00-0	257	129	3.21	Bag
15	Sulfo Tobius Acid	117-62-4 |	485	243	6.06	Bag
16	Sulphamic Acid	5329-14-6	1	1	0.01	Bag
17	Vinyl sulphone	5535-48-8	544	272	6.80	Bag

Storage of Hazardous chemicals in Tanks

- The Entire plant will be operated by semi Atomization System
- Dyke wall provided.
- Dyke wall with sufficient size is provided.
- Tank, valve, pipeline are checked and maintain, in good condition.
- Apron, Hand gloves, gumboot, goggles and helmet will be provided.
- ISI Portable fire extinguisher & Hydrant line is provided as per TAC norms.
- Sufficient amount of sand/soil are kept to control any spillage.

- Eye washer cum shower is provided near tank-farm area.
- Level indicator provided.
- Vent line dipped in water will be provided.
- RCC foundation will be provided.
- Transfer material to another empty tank/ Vessel.

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

- Drums, valve, pipeline are checked and maintain, in good condition through preventive maintenance
- Drums will be stored on sand with bottom of RCC to avoid any spillages
- Joints are checked regularly to detect any Leakage.
- ISI Portable fire extinguisher & Fire Hydrant line is provided as per TAC norms.
- Proper Earthing, Bonding & flange-to-flange jump ring is provided.
- Flame arrester provided on vent line.
- CCE approved Separate Storage area with door having locking arrangement.
- Auto & manual sprinkler provided.
- Apron, Hand gloves, gumboot, goggles and helmet provided.
- Train operator employed.
- Eye washer & shower provided.
- Perforated dip pipe in dyke wall will be provided to monitor & detect any leakage from drums

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
CORROSIVE& CHEMICALS	• The charging of material will be carried out by semi atomization • Dyke wall provided • Dyke wall with sufficient size is provided. • Tank, valve, pipeline are checked and maintain, in good condition. • Apron, Hand gloves, gumboot, goggles and helmet will be provided. • ISI Portable fire extinguisher & Hydrant line is provided as per TAC norms • Sufficient amount of sand/soil are kept to control any spillage. • Eye washer cum shower is provided near tank-farm area. • Level indicator provided. • Vent line dipped in water will be provided. • RCC foundation will be provided. • Transfer material to another empty tank/ Vessel.
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 • Ensure adequate natural or forced general ventilation of the storage area Provide adequate, safe lighting • Label (name and number); identify loading/unloading/transfer couplings • Provide appropriate fire protection (sprinkler, dry powder, gas) • Ensure adequate access for both normal and emergency purposes with alternative routes

- Applicability of PESO: Not Applicable

Comments:

1. 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
Process safety	• Safety measures will be adopted from the design stage. • Safety Valve and pressure gauge will be provided on reactor and its jacket. • Utility like Chilling, cooling, vacuum, steaming and its alternative will be provided to control reaction parameters in a safe manner. • Free Fall of any flammable material in the vessel will be avoided. • Any reaction upsets will be confined to the reaction vessel itself. • All emergency valves and switches and emergency handling facilities will be easily assessable. • Further all the vessels will be examined periodically by a recognized competent person under the Gujarat Factory Rules. • All the vessels and equipment will be earthed appropriately and protected against Static Electricity. Also for draining in drums proper earthing facilities will be provided. • Materials will be transferred by pumping through pipeline or by vacuum from drums. • Caution note, safety posters, stickers, periodic training & Updation in safety and emergency preparedness plan will be displayed and conducted. • As Per GFR 68-U Rules Prescribed Under Schedule 8A. Our total employ will be 15 nos. We will proposed to provide OHC in Admin building with full equipped first aid box Also • we will appointment Medical Officer on retainer-ship basis and carry out the pre-employment and periodical medical examination as stipulated

H-3	Details of Fire Load Calculation

Total Plot Area:	703
Area utilized for plant activity:	554.5
Area utilized for Hazardous Chemicals Storage:	-
Number of Floors:	GF+2
Water requirement for firefighting in KL :	3.327 (120 Minutes)
Water storage tank provided for firefighting in KL:	100 KL (2772.5 Minutes)
Details of Hydrant Pumps:	6.0 Inch Diameter fire hydrant line will be provided connected to Jockey Pump Followed by Diesel Pump having 07 bar

	pressure with sprinkler system. The jockey pump is placed with the fire water tank having capacity of 100 KL.
Nearest Fire Station :	Jashodanagarfire station With 3.15 KM distance
Applicability of Off Site Emergency Plan:	Yes

Comments:

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

H-4	Details of Fire NOC/Certificate:

We will obtained after getting NOC from GPCB

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

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Number of permanent Employee :	10
Number of Contractual person/Labour :	15
Area provided for OHC:	15 Sq. m
Number of First Aid Boxes :	At least one box containing such items and placed and maintained in accordance with the requirements of Sec. 45 is separately provided.
Nearest General Hospital :	Civil Hospital Ahmedabad @ 15.0 Km
Name of Injection to be store in plant :	Injection -morphia, pethidins, atropins, adrenaline, coramine, novocan

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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.

- During the SEAC Video conference meeting dated 07.01.2022, Project Proponent (PP) and their technical expert and EIA consultant from M/s. Satva Environ Consultancy remain present and made technical presentation before the Committee.
- During the meeting, the project was appraised based on the information furnished in the EIA Report and details presented during the meeting.
- 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 November 2020 to January 2021. Ambient Air Quality monitoring was carried out for PM_{10}, $PM_{2.5}$, SO_2, NOx, CO, and VOCs 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 ARMOD model concentrations are within the NAAQS. The modeling study proved that the air emissions from the

proposed plant would not affect the ambient air quality of the region in any significant manner except PM 10 and PM2.5 at project site as it is slightly higher than the NAAQS norms. The ambient air quality around the proposed project site will remain within the National Ambient Air Quality Standards (NAAQS).

- Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detail proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
- Upon asking regarding QCI/NABET accreditation for preparation of EIA preparation for proposed project, technical expert of PP informed that they have not obtained QCI/NABET accreditation for preparation of EIA/EMP report as per the amended EIA Notification vide S.O. 648 (E) Dated 03.03.2016 but they have stay Order issued by Hon'ble High Court of Gujarat under SCA 20606 of 2017 for preparation of EIA/EMP report.
- This is an existing unit and proposed for expansion plant for manufacturing of synthetic organic chemicals at GIDC Vatva. Unit is having valid CCA of the Board and CCA compliance report submitted by unit. PP presented undertaking stating that there is no legal court case, public complaint and one show cause notice issued by GPCB in last three years and its reply presented by PP.
- 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.
- Deliberation of Committee:
    - ✓ Product profile with its end-use is discussed in depth. Looking to area adequacy, PP will manufacture four products at a time from product list.
    - ✓ Source of water supply is GIDC.
    - ✓ Site Plan/ layout with fire plan & floor plans and provision of separate entry & exits, adequate peripheral road, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, hazardous waste storage area, 20% greenbelt within premises etc.
    - ✓ Domestic effluent will be treated in STP and effluent will be treated in ETP and then send to CETP of M/s. GESCL. Concentreted effluent will be sent to common spray Common spray dryer of GESCL.
    - ✓ Two stage as APCM proposed for reactor and Briquette of agro waste as fuel proposed for boiler.
    - ✓ Exhausted scrubbing media will be selling out as per the HW Rules.
    - ✓ PP submitted hazardous waste matrix mentioning source of generation, quantity and Mode of disposal and committed to comply the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules 2016.
    - ✓ Committee deliberated on Process safety, area adequacy and layout plan, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, LDAR and solvent recovery, Green belt, Risk

assessment, baseline data etc.

- ✓ Looking to proposed expansion of dyes , Committee asked clarify regarding area adequacy. PP informed that they will spray drying of liquid dyes outside premises in GIDC Vatva. Also they have proposed 14 % greenbelt outside premises at GIDC Vatva as per letter issued by Vatva Industrial Association vide outward number VIA/2021-22/25-B/247 dated 05.01.2022.

- **After detailed discussion, Committee unanimously decided to recommend the project to SEIAA, Gujarat for grant of Environment Clearance with the following specific condition:**

SPECIFIC CONDITIONS:

1. Project proponent (PP) 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. PP shall not manufacture more than four products from proposed product list at a given point of time, as per details submitted by PP
3. PP shall carry out spray drying of proposed dyes products outside premises at M/s. Sahjanand enterprise, Vatva as per area adequacy submitted by PP.
4. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
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. The project proponent must strictly adhere to the stipulations made by the Gujarat Pollution Control Board, State Government and/or any other statutory authority.
8. All measures shall be taken to avoid soil and ground water contamination within premises.
9. GPCB shall ensure compliance of direction under section 18 (1) (b) of the Water (Prevention and Control of Pollution) act' 1974 issued by CPCB regarding compliance of CETP and also that the pollution load is not increased in the CPA/SPA for the compliance of Hon'ble NGT order.

WATER

10. Total water requirement for the project shall not exceed 20 KLD. Unit shall reuse 4 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 16 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority shall be obtained for withdrawal of water.

11. The industrial effluent generation from the project shall not exceed 3.50 KLD after expansion.
12. 1.50 KLD effluent shall be treated in ETP-1 and then treated effluent shall be discharged to CETP of GSECL, Vatva for further treatment and disposal.
13. 2 KLD effluent shall be treated in ETP-2 and then treated effluent shall be discharged to common spray dryer of GSECL,Vatva for evaporation, through GPS fitted tanker.
14. Project proponent (PP) shall adopt appropriate methods for segregation of waste water streams based on characteristics at source and its sound management keeping in view direction under section 18 (1) (b) of the Water (Prevention and Control of Pollution) act, 1974 issued by CPCB regarding compliance of CETP.
15. Treated waste water shall be sent to common facilities (CETP) only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
16. Treated waste water (Concentrated stream) shall be sent to Common spray dryer only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
17. Domestic wastewater generation shall not exceed 3.30 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank.
18. Unit shall provide ETP with adequate capacity.

AIR

19. Unit shall not exceed fuel consumption and provide APCM and Stack height as mentioned in flue gas matrix.
20. Unit shall provide APCM and stack height as mentioned in process gas matrix.
21. PP shall use approved fuels only as fuel in boilers.

HAZARDOUS & SOLID WASTE

22. All hazardous solid waste shall be managed as mentioned in hazardous waste matrix.
23. 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

24. The PP shall develop green belt within premises (141 sq. Meter (20%) within premises and **100 M^2 (14.1 %)** green belt area outside plant premises within GIDC Vatva 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.
25. **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 with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.

f) 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.

g) 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.

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

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

j) Unit shall provide water sprinkler to the ammonia storage cylinder

6.	SIA/GJ/IND2/234042/2021	**M/s. Chemcon Speciality Chemicals Ltd** Block No. 336, 355 Paiki, Manjusar – Kunpad Road, Vill: Manjusar, Tal: Savli, Dist: Vadodara – 391775.	Appraisal

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

Project status: **Expansion**

- Project proponent (PP) has submitted online application vide no. SIA/GJ/IND2/234042/2021 on dated 16.10.2021 for obtaining Environmental Clearance.
- Project proponent has submitted Form – 1, Pre-Feasibility Report & Environment Management Plan as per Notification issued by MoEF&CC vide S.O. 1223(E) dated 27th March, 2020 regarding consideration of proposals or activities in respect of Active Pharmaceuticals Ingredients (API) as B2 category.
- This is an existing unit and now proposes for expansion in manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below,

S	Name of the	API or	CAS	Quantity MT/Month	End-use of the

N	Products	Intermediate	No./ CI No.	Existing as per CC&A	CTE Application No. 169074 dt. 20/03/2020 (EC No. SEIAA/ GUJ/EC/(5f)/ 839/2020)	Additional for EC expansion	Total after proposed expansion	products*
1	Hexa Methyl Di Silazane (HMDS)	Intermediate	999-97-3	500 (Either individual or total production)	-	250	750 (Either individual or total production)	Used in to Antibiotics & Anti-viral medicine like Cifadroxil& Used to treat a wide variety of bacterial infections (e.g., strep throat, skin and urinary tract infections)
2	N-Butyl Chloride	Intermediate	109-69-3					Used as a raw material in pharmaceutical industry to produce Phenyl butazone drugs/ API & also used as synthetic animal insect repellents
3	Chloro Methyl Isopropyl Carbonate (CMIC)	Intermediate	35180-01-9	225	-	275	500	Used as a raw material in pharmaceutical industry to produce Tenofovir API/Drugs. & Used as HIV infection and chronic hepatitis-B virus infection
4	Pyridine Hydro Bromide or Hydro Bromic Acid	Intermediate	18820-82-1	50	200	NIL	250	Used in to Cephalosporin API/ Drug. &Cephalosporins are antibiotics used to treat a wide variety of bacterial infections, such as respiratory tract infections, skin infections and urinary tract infections.
5	Hexa Methyl Di Siloxane (HMDO)	Intermediate	107-46-0	250	-	NIL	250	Used to produce HMDS. & Used to produce antibiotics & antiviral Pharma intermediate.
6	Oxalyl Chloride	Intermediate	79-37-8	250	-	NIL	250	Use to produce Dioxanetetraketone API/Drug. & Used in a penem antibiotic drug
7	4- Nitro Benzene Bromide (PNBBR)	Intermediate	100-11-8	-	250	NIL	250	Antibiotics & Antiviral medicine, used to treat a wide variety of bacterial infections (e.g., strep throat, skin and urinary tract infections)
8	1,1 Cyclohexane Diacetic Acid	Intermediate	4455-11-7	-	200	NIL	200	Anti-epileptic drug, used in adults to treat neuropathic pain (nerve pain) caused by herpes virus or shingles (herpe zoster)
9	1,1 Cyclohexane Diacetic Acid Monoamide	Intermediate	99189-60-3	-				
10	Bromobenzene	Intermediate	108-86-1	-	200	NIL	200	Used as a raw material in pharmaceutical industry to produce Citalopram &Nebivolol API/Drugs. & Used to treat depression and also sometimes for

								panic attacks.
11	Cinnamic Aldehyde	Interme diate	104-55-2	-	250	NIL	250	Used as anticancer agent & also used to treat depression
12	Cinnamic Alcohol	Interme diate	104-54-1	-	100	NIL	100	
13	Sodium Benzoate	Intermedi ate	532-32-1	-	100	NIL	100	Used as a treatment for urea cycle disorders&hyper ammonemia in blood level
14	Di Benzyl Ether	Intermedi ate	103-50-4	-	100	-100	NIL	Used to treat moderate to severe acne vulgaris in adult & treat a wide variety of bacterial infections resp.
15	1,4 Dithine 2,5 Diol (DTH)	Intermedi ate	40018-26-8	-	100	NIL	100	used to treat human immuno-deficiency virus (HIV) infection
16	2 Ethyl Hexanoyl chloride (2 EHC)	Intermedi ate	760-67-8	-	1500 (Either individual or total production from Product no. 16 to 34)	NIL	1500 (Either individual or total production from Product no. 16 to 34)	Use to treat tuberculosis (TB) & bacterial infection.
17	2 Methoxy Ethyl Chloride (2 MEC)	Intermedi ate	627-42-9	-				Used in a penem antibiotic drug
18	2 Propoxy Ethyl Chloride (2 PEC)	Intermedi ate	42149-74-6	-				Helps to relieve deep muscle pain when used with muscle stretching techniques
19	2,4,6 Trimethyl Benzoyl Chloride (2,4,6 TMBC)	Intermedi ate	938-18-1	-				Used to treat a wide variety of bacterial infections respectively
20	3,5 Di Methyl Benzoyl Chloride (3,5 DMBC)	Intermedi ate	2905-62-6	-				Use for improving the solubility and the stability of drugs by complex formation at the solid state
21	4- Chloro ButyrylChloride (4-CBC)	Intermedi ate	4635-59-0	-				used as neuroleptics and/or antipsychotics drug
22	IsoButyryl Chloride (IBC)	Intermedi ate	79-30-1	-				Used in a penem antibiotic drug
23	IsoNonanoyl Chloride (INC)	Intermedi ate	764-85-2	-				Used in a penem antibiotic drug
24	IsoOctyl Chloride (IOCL)	Intermedi ate	29590-42-9	-				Used in a penem antibiotic drug
25	Isophthaloyl Chloride (IPC)	Intermedi ate	99-63-8	-				Used as preservative in antibiotic drug
26	Lauroyl Chloride (LC)	Intermedi ate	112-16-3	-				Application to body surfaces such as the skin or mucous membranes to treat ailments
27	Methoxy Acetyl Chloride (MAC)	Intermedi ate	38870-89-2	-				used as neuroleptics and/or antipsychotics
28	N- Butyryl Chloride (N-BC)	Intermedi ate	141-75-3	-				Used in a penem antibiotic drug
29	Neo decanoyl Chloride (NDC)	Intermedi ate	40292-82-8	-				Used in a penem antibiotic drug
30	Octanoyl Chloride (OC)	Intermedi ate	111-64-8	-				A therapeutic agent for Alzheimer's disease

31	Pivaloyl Chloride (PC)	Intermediate	3282-30-2	-				Used in a penem antibiotic drug
32	Terphthaloyl Chloride (TPC)	Intermediate	100-20-9	-				Used in a penem antibiotic drug
33	Undecanoyl Chloride	Intermediate	17746-05-3	-				Antibiotic
34	Valeryl Chloride	Intermediate	638-29-9	-				Used in a penem antibiotic drug
35	2 methyl thio 4,6 pyrimdinedione	Intermediate	1979-98-2	-	100	NIL	100	Used for the treatment of inflammatory and cancer disease
36	Maltol	Intermediate	118-71-8	-	100	NIL	100	To treat certain stomach & esophagus problems (such as acid reflux). It works by decreasing the amount of acid your stomach makes. This medication relieves symptoms such as heart burn, difficulty swallowing, and persistent cough.
37	Cytosine	Intermediate	71-30-7	-	100	NIL	100	Used to treat infections caused by certain types of viruses, It treats cold sores around the mouth (caused by herpes simplex), shingles (caused by herpes zoster), & chickenpox. This medication is also used to treat outbreaks of genital herpes.
38	2-Chloro Trityl Chloride	Intermediate	42074-68-0	-	NIL	500 (Either individual or total production)	500 (Either individual or total production)	Clotrimazole as antifungle
39	Trityl Chloride	Intermediate	76-83-5	-	NIL			Use in Emcitribne API
40	Guanine	Intermediate	73-40-5	-	NIL	250	250	Acyclovir as antibiotic
41	2, 4-Dichloro Benzyl Chloride	Intermediate	94-99-5	-	NIL	100	100	Miconazole API as anti-fungal for ringwarm
42	2,4-Dichloro Benzaldehyde	Intermediate	874-42-0	-	NIL	100	100	FELODIPINE API as Hypertensive
43	Benzylidine Acetone	Intermediate	122-57-6	-	NIL	100	100	Warfarin API as Anticoagulant
44	Para Chloro Benzyl Alcohol	Intermediate	17849-38-6	-	NIL	100	100	BisoprololFumarate API as Antidepressant
45	Para Chloro Benzaldehyde	Intermediate	89-98-5	-	NIL	100	100	Lumefantrine API Used to treat malaria
46	Para Chloro Benzyl Chloride	Intermediate	104-83-6	-	NIL	100	100	Levocetirizine API as Histamine H1 Receptor Antagonist
47	Benzyl/Benzal Derivatives							
	Benzyl Acetate	Intermediate	140-11-4	-	1200 (Either individual or total production)	(-) 1200 (Either individual or total	NIL	Health care product used as a local anesthetic with Lidocaine injection
	Benzyl Alcohol	Intermediate	100-51-6	-				An antiparasite medication used to treat head lice, and enterobiasis.

	Benzyl Benzoate	Intermediate	120-51-4	-		production)		Used for an effective and inexpensive topical treatment for human scabies.
	Benzyl Butyrate	Intermediate	103-37-7	-				Used to treat moderate to severe acne vulgaris in adult & treat a wide variety of bacterial infections respectively
	Benzyl Propionate	Intermediate	122-63-4	-				Health care product used as a local anesthetic with Lidocaine injection
	Benzyl Salicilate	Intermediate	118-58-1	-				Used as fragrance excipient in many medicinal anti-biotic drug, cosmetic and personal care products
	Benzyl Chloride/ Benzal Chloride	Intermediate	100-44-7	-				Used as central nervous system (CNS) in Antibiotics Drug.
	Benzaldehyde	Intermediate	100-52-7	-				Many cinnamic acid derivatives, especially those with the phenolic hydroxyl group, are well known antioxidants
	Ortho Chloro Benzaldehyde	Intermediate	89-98-5	-				Antibiotic with bactericidal activity
	Ortho Chloro Benzoic acid	Intermediate	118-91-2	-				Used as a preservative in Antibiotics Drug
			Total	1275	4500	575	6350	-
1	SO2 Bottling		7446-09-5	-	3100	105	3205	Used in Agrochemicals & rubber Industries

ENDUSE OF PRODUCTS

SN	Name of Product	CAS no. / CI no.	Type/ Category of Product (API/ Intermediate)	In Case of Intermediate stage of API			End use
				Stage of intermediate n-1, n-2, etc	Name of API in which intermediate used/ End use of said intermediate	CAS No. (API)	
1.	Hexa Methyl Di Silazane (HMDS)	999-97-3	Intermediate	n-1	Cifadroxil	66592-87-8	Cifadroxil API used to treat a wide variety of bacterial infections (e.g., strep throat, skin and urinary tract infections)
2.	N-Butyl Chloride	109-69-3	Intermediate	n-1	Phenylbutazone	50-33-9	Phenylbutazone API used as synthetic animal insect repellents.
3.	Chloro Methyl Isopropyl Carbonate (CMIC)	35180-01-9	Intermediate	n-1	Tenofovir	147127-20-6	Tenofovir API used in HIV infection and chronic hepatitis-B virus infection
38.	2-Chloro Trityl Chloride	42074-68-0	Intermediate	n-1	Clotrimazole	23593-75-1	Clotrimazole API used as antifungle.

39.	Trityl Chloride	76-83-5	Intermediate	n-1	Emtricitabine	143491-57-0	Emtricitabine API used as treatment of HIV infection.
40.	Guanine	73-40-5	Intermediate	n-1	Acyclovir	59277-89-3	Acyclovir API used as antiviral.
41.	2, 4-Dichloro Benzyl Chloride	94-99-5	Intermediate	n-1	Miconazole	22916-47-8	Miconazole API used as anti-fungal for ringwarm
42.	2,4-Dichloro Benzaldehyde	874-42-0	Intermediate	n-1	Felodipine	72509-76-3	Felodipine API used as Antihypertensive
43.	Benzylidine Acetone	122-57-6	Intermediate	n-1	Warfarin	81-81-2	Warfarin API used as Anticoagulant
44.	Para Chloro Benzyl Alcohol	17849-38-6	Intermediate	n-1	BisoprololFumarate	66722-44-9	BisoprololFumarate API used as Antidepressant
45.	Para Chloro Benzaldehyde	89-98-5	Intermediate	n-1	Lumefantrine	82186-77-4	Lumefantrine API used to treat malaria
46.	Para Chloro Benzyl Chloride	104-83-6	Intermediate	n-1	Levocetirizine	130018-77-8	Levocetirizine API used as Histamine H1 Receptor Antagonist(Anti-allergic)

- The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020.
- PP was called for Video conference meeting for presentation on dated 07.01.2022.
- Since the proposed project is falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
- PP submitted salient features of 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-1</td><td>Total cost of Proposed Project (Rs. in Crores)</td><td></td></tr>
<tr><td></td><td>(Rs. in Crores)
<table>
<tr><th>Existing</th><th>Proposed</th><th>Total Project Cost</th></tr>
<tr><td>Rs. 54.4105 Crores</td><td>Rs. 20.938 Crores</td><td>Rs. 75.3485 Crores</td></tr>
</table>
Break-Up of Proposed Project Cost:
<table>
<tr><th>Details</th><th>Project Cost (Rs. in Crores)</th></tr>
<tr><td>Land</td><td>12.8365</td></tr>
<tr><td>Civil</td><td>1.0167</td></tr>
<tr><td>Process Plant</td><td>1.8114</td></tr>
<tr><td>Utilities</td><td>1.3285</td></tr>
<tr><td>EMP</td><td>2.72</td></tr>
<tr><td>Fire & Safety</td><td>0.85</td></tr>
<tr><td>Miscellaneous</td><td>0.3749</td></tr>
<tr><td>Total</td><td>20.938</td></tr>
</table></td><td></td></tr>
<tr><td>A-2</td><td>Details of Environmental Management Plan (EMP)</td><td>As below</td></tr>
</table>

Sr. No.	Description	Component	Capital Budget (Lacs)	Recurring Cost (Lakhs/Annum)		
				Operating Cost	Maintenance Cost	Total Recurring Cost
1	Air Pollution Control	Installation of boiler Stack& APCM Cost of scrubber & APCM Cost of maintenance of APCM System & Monitoring of AAQM and Stack	80	12.2	2.8	15
2	Wastewater	Construction of ETP, RO, MEE/MVR Treatment cost of Effluent Maintenance charges, Manpower and Monitoring	150	18.75	6.25	25
3	Hazardous/ Solid Waste Management	Membership cost of TSDF/ CHWIF Construction of Hazardous waste storage yard Cost for TSDF/ CHWIF disposal	10	7.5	2.5	10
4	Noise Pollution Control	Cost of adequate sound enclosures Monitoring of noise level	5	0.6	0.2	0.8
5	Green Belt Development	Land levelling, Plantation, Labour cost, fencing	7	1.5	0.5	2
6	Occupational Health & safety	Stock and Storage of PPEs and Safety system Maintenance charges and medical check up OHC	20	3	1	4
7	Fire & Safety	Fire Alarm System & Fire Extinguishers Expansion of Fire Hydrant& monitors/sprinklers/detector system	85	-	-	-
8	CER Activity	-	52	-	-	-
Total Cost			**409**			**56.8**

Summary

Cost of Project in Crores per Annum:	20.938
EMP Capital Cost in Crores per Annum and Percentage:	4.09 (19.53%)
EMP Recurring Cost in Crores per	0.568 (2.71%)

Annum and Percentage:	

Comments:

1) …
2) ….

A-3 Details of CER -

CER fund allocation to be at least 1.5 times the slabs given in the OM dated 01.05.2018 for SPA and 2 times for CPA in case of Environmental Clearance as per the mechanism published vide MoEF&CC's OM Vide 31.10.2019)

% as per the OM	Rs. in Crores
2.5%	0.52

Cost for CER Activity: 52.0 Lakhs (2.5% of total Project Cost)

Sr. No.	CER Activities	Year wise Budget (Lakhs)		Total (Lakhs)
		2022-2023	2023-2024	
1.	Activities to be carried out under CER: Imparting Education & Health Care	26	26	**52**

B Land/ Plot Ownership Details

B-1 Plot area (sq. meter)

Existing Plot Area	Proposed Plot Area	Total Plot Area
30226	21165	51391.0

B-2 Brief note on **Area adequacy** in line to proposed project activities:

Sr. No.	Particulars	Area (m2)	Area (%)
1	Admin Office + Canteen Area	360	0.70
2	Process Area (Plant - 2 to 7)	2838.65	5.52
3	Process Area (Plant – 8 to 10) (Proposed)	2485.78	4.84
4	Boiler & TFH (Existing)	198.8	0.39
5	Boiler Area (Proposed)	1061.85	2.07
6	MCC & PCC Room	110	0.21
7	Transformer Area + D.G Set	72	0.14
8	Equipment Yard (Proposed) + Scrubber for HCl	705.2	1.37
9	Pilot Plant + Laboratory + Powder Processing Area	609	1.19
10	Warehouses (Existing)	1372.62	2.67
11	Warehouses (Proposed)	2219.5	4.32
12	Tank Farm + Storage tanks Area (Existing)	2311.762	4.50
13	Tank Farm (Proposed)	1816.7	3.54
14	Chlorine Tonner Storage Area	375	0.73
15	Utility & Chiller Area (Existing + Proposed)	1109.5	2.16
16	Coal Storage + Feed Area (Proposed)	379.4	0.74

	17	Wood Storage Area	186.95	0.36
	18	Nitrogen Plant + Brine Plant	76.2	0.15
	19	Loading/unloading Platform	40	0.08
	20	Engineering Store & Workshop	634	1.23
	21	Fire Pump House , U/G Water Tank & Car Parking	115.84	0.23
	22	OHC	127.6	0.25
	23	Security Cabin + Temple	24	0.05
	24	Toilet Block (Existing + Proposed)	52.78	0.10
	25	U/G Septic Tank	15.48	0.03
	26	Hazardous Waste Storage Area	16.5	0.03
	27	MEE (Existing)	150	0.29
	28	MEE/ETP (Proposed)	868	1.69
	29	Total Road Area	13175.6	25.64
	30	Open Land Area	872.4	1.70
	31	Green Belt Area	17010	33.10
		TOTAL	**51391.112**	**100**

Comments:

2) …
3) ….

B-3 **Green belt area** (sq. meter)

	Existing	Proposed	Total (Sq. Meter)
Area in Sq. Meter	10000	7010	17010.0
% of Total Area	33.08	33.1	33.1

C **Employment generation**

Existing	Proposed	Total
Permanent 220 Nos. + Contract 150 Nos.	Permanent 30 Nos. + Contract 30 Nos.	430

D **Water**

D-1 Source of Water Supply

- Ground Water

Status of permission from the concern authority

- Water permission for Ground Water is obtained from CGWA. For Proposed water consumption we will apply for amendment after getting EC.

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

Water Consumption (KLD)					
		Existing as per CC&A	**CTE Application No. 169074 dt. 20/03/2020 (EC No. SEIAA/GUJ/ EC/(5f)/ 839/2020)**	**Additional for EC expansion**	**Total After Proposed Expansion**
(A)	**Domestic**	4	6	2	12
(B)	**Green Belt**	2	4.5	20.5	27
(C)	**Industrial**				
	Process	77.5	472	110	347
	Boiler	23	30	0	53
	Cooling	39	73	9	121
	Washing	2	5	1	8
	Others (Scrubber)	19	4	95	118
Industrial Total		**160.5**	**584**	**215**	**647**
Total Required (A+B+C)		**166.5**	**594.5**	**237.5**	**686**
Total Fresh Water after recycling		**159 (166.5-7.5)**	**374 (594.5-220.5)**	**-5 (237.5-242.5*)**	**528 (686-158)**

- Benzyl/Benzal DerivativesProduct is removed after proposed expansion. So, water consumption will be decreased after proposed expansion.

- *For proposed expansion, additional 110 KLD water will be required in the process. But after removal of Benzyl/ Benzal Derivatives product, 242.5 KLD water will be reduced. Hence, Additional Fresh Water will be not required after proposed expansion.

- Out of Total 686 KLD Water requirement, Industrial 158 KLD (104 + 6 + 12 + 6 + 30) water will be recycled and reused back into the plant. Hence Total 528 (686-158) KLD of Fresh water will be required after proposed expansion of project.

Comments:

1) ….
2) ….

Summary of water requirement	Total Water Consumption (KL/Day)	Remarks
Total water requirement for the project **(A)**	686	-
Quantity to be **recycled (B)**	158	-
Total **fresh water** requirement **(C)**	528	-

D-3 Waste water generation (KLD)

		Wastewater Generation (KLD)				
		Existing as per CC&A	**CTE Application No. 169074 dt. 20/03/2020 (EC No. SEIAA/GUJ/ EC/(5f)/ 839/2020)**	**Additional for EC expansion**	**Total after proposed expansion**	**Remarks**
(A)	**Domestic**	4.0	3.0	0	7.0	disposed off through septic tank via soak pit system
(B)	**Industrial**					
	Process	3.75	265.25	77	165	Will be treated in ETP, RO and MEE/MVR **(Unit will be ZLD)**. 158 KLD water will be recycled and reused. Hence Total 528 (686-158) KLD of Fresh water will be required after proposed expansion of project.
	Boiler	2.0	2.0	0	4.0	
	Cooling	2.8	7.2	2.0	12.0	
	Washing	1.0	4.0	2.0	7.0	
	Others (Scrubber)	8**	0	0	0	Collection, Storage, Transportation and sell to end user having valid CCA of SPCB & Rule-9 permission under HWM Rule -2016.
Actual Total Industrial		**9.55 (17.55-8)**	**278.45**	**81**	**369**	Send to ETP, RO and MEE/MVR
Total Industrial after removal of Benzyl/ Benzal Derivatives products		**9.55 (17.55-8)**	**278.45**	**-100 (81-181***)**	**188**	

- ******The quantity of the effluent to be generated from the Scrubbers is 8 KLD and generated scrubbing solutions are disposed to authorize rule-9 Vendor.
- *******For proposed expansion, Additional 81 KLD wastewater will be generated from process, Cooling tower blow down and washing. But after removal of Benzyl/ Benzal Derivatives products 181 KLD wastewater generation will be reduced from the process.
- Hence, after proposed expansion, total Industrial wastewater generation quantity will be 188 KLD.

Comments:

1) …
2) ….

D-4	**Break-up of Wastewater disposal & facility (For Domestic after proposed expansion)**

After proposed expansion7 KLD domestic wastewater disposed off through septic tank via soak pit system.

D-5 Break-up of Wastewater disposal & facility (For Industrial after proposed expansion)

Sr. No.	Particulars	Quantity (KLD)	Remarks
a.	Process	165	Will be treated in ETP, RO and MEE/MVR **(Unit will be ZLD)**. 158 KLD water will be recycled and reused. Generated MEE Waste & ETP Sludge will be disposed to TSDF Site.
b.	Boiler	4.0	
c.	Cooling	12.0	
d.	Washing	7.0	
Total Wastewater Generation		**188**	

E Air

E-1 Power Electricity Requirement: 1750 KVA

E-2 Flue gas emission details

- **Existing & Proposed**

Sr. No.	Source of Emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel	Type of emissions i.e. Air Pollutants	Air Pollution Control Equipment
1.	Boiler – I (Capacity – 3.0 MT) (Existing)	30	Firewood, Imported Coal &/or Briquettes	11 MT/day	PM: 150 mg/Nm^3 SO2: 100 ppm NOx: 50 ppm	Multi Cyclone Separator + Bag Filter + Alkali Scrubber
2.	Boiler – II (Capacity – 5.0 MT) (Existing)					
3.	Thermic Fluid Heater (4 Lakh Kcal/Hr) (Existing)		Briquettes/ Imported Coal	20 MT/day		Mechanical Dust Collector +Alkali Scrubber
4.	Boiler – III (Capacity – 16.0 TPH) (Proposed)	33	Briquettes/ Imported Coal	80 MT/day		ESP & Water + Alkali Scrubber
5.	Boiler – IV (Capacity – 16.0 TPH) (Stand By) (Proposed)					
6.	Thermic Fluid Heater (30 Lakh Kcal/Hr) (Proposed)			90 MT/day		Mechanical Dust Collector + Alkali Scrubber
7.	D.G. Set – 2 Nos. (500 KVA & 910 KVA) (Existing)	11	Diesel	2054Lit/Hr		Adequate Stack Height&Acoustic Measures

E-3 Process gas i.e. Type of pollutant gases (SO_2, HCl, NH_3, Cl_2, NO_x etc.)

Existing + Proposed

Sr. No.	Specific Source of Emission (Name of the Product & Process)	Type of Emission	Stack Height (Meter)	APCM
1	HCl Storage Tank	HCl - □ 20 mg/NM^3 Cl_2-□ 9 mg/NM^3	11	Two Stage Water Scrubber
2	Reactor No. 1 & 2 (2 Nos.) (HMDS, n-Butyl Chloride, CMIC)		11	Two Stage Water Scrubber followed by Caustic Trap
3	Reactor – 3 (HMDO, Oxalyl Chloride)		11	
4	Reactor 1 to 4 Bromide Tank (Calcium Bromide, Sodium Bromide, Zinc Bromide)	Br_2 - □ 20 mg/NM^3 HBr - □ 30 mg/NM^3	11	Two Stage Water + Alkali Scrubber
5	Process Stack – 1 (Trityl Chloride, 2,4 Dichloro Benzyl chloride, Para chloro benzaldehyde, Para Chloro Benzyl chloride,	HCl - □ 20 mg/NM^3 Cl_2-□9 mg/NM^3	11	Two Stage Water + Alkali Scrubber
6	Process Stack – 2 (2-CTC, 2 EHC, 2 MEC, 2 PEC, 2,4,6 TMBC, 3,5 DMBC, 4-CBC, IBC, INC, IOCL, IPC, LC, MAC, N-BC, NDC, OC, PC, TPC, Undecanoyl Chloride, Valeryl Chloride)	SO_2 - □ 40 mg/NM^3	11	Bottling Hood and Alkali Scrubber
7	Process Stack – 3 (2-CTC, 2 EHC, 2 MEC, 2 PEC, 2,4,6 TMBC, 3,5 DMBC, 4-CBC, IBC, INC, IOCL, IPC, LC, MAC, N-BC, NDC, OC, PC, TPC, Undecanoyl Chloride, Valeryl Chloride)	HCl - □ 20 mg/NM^3 SO_2 - □ 20 mg/NM^3	11	Two Stage Water Scrubber followed by alkaline scrubber
8	Process Stack – 4 (PNBBR, Bromo Benzene, Pyridine Hydro Bromide)	Br_2 - □ 20 mg/NM^3 HBr - □ 30 mg/NM^3	11	Two Stage Water + Alkali Scrubber
9	MEE Plant stripper	-	11	Dry Carbon Scrubber followed by two stage condensers

E-4 Fugitive emission details with its mitigation measures.

The emissions are normally defined as emissions to the atmosphere resulting from leaking piping sources and equipments such as valves, flanges, pump seals, connections, and compressor seals open end lines and pressure relief valves. The emissions are not visually observed but can be measured in relatively low concentration at each area of source.

Following measures will be adopted to prevent and control fugitive emissions:

- Manufacturing activity will be carried out in closed reactors / vessels and regular checking and maintenance of the same will be carried out to avoid any leakages.
- Raw materials will be stored in isolated storage area and containers will be kept tightly closed.
- Raw material loading & unloading will be done in cover area.
- To minimize fugitive emission, powder material will be allowed in a vessel through closed loop while liquid material will be charged through closed pipeline.
- Transportation of raw materials & products will be carried out by trolley within premises and minimum manual material handling will be carried, so the fugitive emission due to process

activity and material handling will be minimized.

- Bulk storage of odorous chemicals/ solvents will be avoided and usage of drums/Carboys for such materials will be adopted as far as possible.
- Solvent storage tanks will be equipped with vent condensers to control loss of VOCs.
- Raw material will be stored in the covered structure.
- All the containers will be kept tightly closed
- Regular maintenance of valves, pipes etc.
- Suitable glad packing will be used in valves
- Pump with double mechanical seals will be used.
- The plant building and storage area is also equipped with proper ventilation system
- Frequent work area monitoring will be done ensure fugitive emissions level.
- Regular water sprinkling to suppress the fugitive dust
- Greenbelt will be developed around the plant to reduce the fugitive emission level.

Comments for E2, E3 & E4:

1) …
2) ….

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

F-1 **Hazardous Waste Management Matrix**

SN	Type of Waste	Category	Specific Source of Generation	Generation, MT/Year				Mode of Disposal
				Existing as per CC&A	CTE Application No. 169074 dt. 20/03/2020 (EC No. SEIAA/GUJ/EC/(5f)/839/2020)	Additional for EC expansion	Total after proposed expansion	
1	ETP Sludge	35.3 Sch-I	ETP	70	1150	-2830	4800	Collection, Storage, Transportation and Disposal at Co-processing, Cement industries &/or approved TSDF Site.
2	MEE Waste		MEE		6480			
3	Used Spent Oil	5.1 Sch-I	Equipment & Machinery	2	3	2	7	Reused within the Factory Premises &/or Disposal by selling to registered/ authorized re-cycler having valid CCA of SPCB & Rule-9 permission under HWM

								Rule-2016 by use of GPS enable vehicle and xgn generated manifest
4	Discarded Containers/ Barrel/Liners/ Bags	33.1 Sch-I	Raw Material &Storage	30	48	32	110 (65333 Nos.)	Disposal by selling to registered/ authorized re-cycler having valid CCA of SPCB & Rule - 9 permission under HWM Rule – 2016 by use of GPS enable vehicle and xgn generated manifest.
5	Distillation Residue	20.3 Sch-I	Process	1707	313	2578	4598	Collection, Storage, Transportation and Disposal at co-processing, Cement industries &/or approved CHWIF.
6	Organic Waste/ Process Waste	28.1 Sch-I	Process	70	1800	NIL	1870	Collection, Storage, Transportation and Disposal at co-processing, Cement industries &/or approved TSDF site &/or CHWIF site.
7	Dil. HCl (30%)	B-15	Process	NIL	35648	38507	74155	Collection, Storage, Transportation & manufacture of 25-30% CaCl2 solution (Product) &/or Captive use/reuse &/or sell to end user valid CCA of SPCB & Rule-9 permission under HWM Rule -2016 by use of GPS enable vehicle and xgn generated manifest.
8	Spent Sulfuric Acid (50%)	B-15	Process	9144	9240	NIL	18384	Collection, Storage, Transportation and captive use &/or sell to end user valid CCA of SPCB & Rule-9 permission under HWM Rule -2016 by use of GPS enable vehicle and xgn generated manifest.
9	Ammonium Chloride Liquid or Ammonium Chloride	C1 Sch-II	Process	9600 or 100	17400	9760	36760 or 9190	Collection, Storage, Transportation and captive use &/or send to our sister concern unit for reuse &/or sell

	Powder							to end user who is having Rule-9 Permission.
10	Sodium Hypo Chlorite	B-36	Process	NIL	252	2018	2270	Collection, Storage, Transportation and captive use &/or sell to end user valid CCA of SPCB & Rule-9 permission under HWM Rule -2016 by use of GPS enable vehicle and xgn generated manifest.
11	HBr Solution	B-15	Process	NIL	1872	2278	4150	Collection, Storage & Captive Use
12	Spent Carbon	28.2 Sch-I	Process	NIL	180	1245	1425	Collection, Storage, Transportation and Sent for Reactivation or Disposal at co-processing, Cement Industries &/or approved CHWIF.
13	Spent solvent	28.6 Sch-I	Process	NIL	22000	NIL	22000	Collection, Storage, Transportation and sell to end user valid CCA of SPCB & Rule-9 permission under HWM Rule -2016 by use of GPS enable vehicle and xgn generated manifest.
14	Spent Catalyst	28.2 Sch-I	Process	NIL	1800	NIL	1800	Collection, Storage, Transportation and Disposal in approved TSDF.
15	Solvent Residue	28.1 Sch-I	Process	NIL	1800	-300	1500	Collection, Storage, Transportation and Disposal at co-processing, Cement Industries &/or approved CHWIF.
16	Floor Sweeping Waste	-	Process	5	93	NIL	98	Collection, Storage, Transportation and Disposal to approved TSDF.
18	10% Sodium Benzoate Solution	B-5	Process	NIL	NIL	1200	1200	Collection, Storage, Transportation and captive use &/or sell to end user who is having Rule-9 Permission.
19	Sodium Nitrate	B-36	Process	NIL	NIL	1956	1956	

20	25-30% AlCl3 Solution	B-10	Process	NIL	NIL	12720	12720	

Comments:

1) …
2) ….

F-2 **Details of Non-Hazardous waste & its disposal (MSW and others)**

SN	Type/Name of Non- Hazardous Waste	Source of Generation	Category	Quantity MT/Year	Hazardous Waste Disposal/ Management
17	Fly Ash	Boiler & TFH	Non-Hazardous	2360	Sent to Brick Manufacturer

Comments:

1) …
2) ….

G **Solvent management**, VOC emissions etc.

G-1 **Types of solvents, Details of Solvent recovery, % recovery, reuse of recoveredSolvents etc.**

Pr. No.	Product name	Name of Solvent	Solvent Quantity in (kg)	Solvent Recovered Quantity in (kg)	Solvent Loss Quantity (kg)	Percentage recovered (%)	Percentage Loss (%)
39	2- Chloro Trityl Chloride	Toluene	2690	2649	41	98.5	1.5
		Benzene	2495	2457	38	98.5	1.5
40	Trityl Chloride	Toluene	2690	2640	50	98.1	1.9
		Benzene	2430	2391	39	98.4	1.6
41	Guanine	Methanol	4.70	4.58	0.12	97.4	2.6

G-2 **LDAR proposed:**

Unit shall be carrying out LDAR program for the sources of leakages. Steps such as monitoring of solvent losses, preventive maintenance measures, and immediate corrective actions will be followed by the unit.

Monitoring of Solvent Losses:

- The storage and consumption of the solvent in product should be measured through Level Transmitters and Load Cells weighing system respectively. The quantity at each stage shall be reconciled periodically to arrive at Losses.
- Batch outputs shall be monitored and reconciled with quantity of input raw materials added. Any variation beyond 5% shall be analyzed in detail and action plan shall be prepared to reduce the variation.
- Workplace VOC monitoring shall be carried out periodically as per plan scheduled

Preventive Maintenance Measures:

In order to prevent leakage from Pump, Seals, Valves etc., preventive maintenance shall be carried out periodically as per plan scheduled.

S. N.	Component	Preventive Maintenance

		Schedule
1	Valves/flanges	Quarterly
2	Compressor seals	Quarterly
3	Pressure relief devices	Yearly
4	Any component with visible leaks	Weekly
5	Any component after repair/ replacement	Weekly
6	Pipeline Thickness Testing	Yearly

G-3 **VOC emission** sources and its mitigation measures

Source: from storage and usage of raw materials & during operation stage

Mitigation measures:

- Entire process will be carried out in the closed reactors with proper maintenance of pressure and temperature.
- Control by having proper scrubbing system.
- Minimum joints/flanges
- Condenser to trap VOC.
- Adequate ventilation will be provided.
- Airborne dust at all transfers operations/ points will be controlled either by spraying water or providing enclosures.
- Pumps will be provided with mechanical seals to prevent leakages.

Measures for achieving maximum solvent recovery and minimize VOC generation:

- Breather valves will be provided on solvent tanks.
- Bulk Storage of Solvent will be avoided and usage of drums/carboys for such materials will be adopted as far as possible.
- Pumps will be provided with mechanical seals to prevent leakages.
- Emphasis will be given to solvent management/ solvent loss prevention
- Solvent storage tank will be equipped with vent condensers to control loss of VOCs.
- Adequate ventilation will be provided.

Comments:

2) …
3) ….

H **SAFETY details**

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

Sr. No.	Hazardous Chemical Name	Mode of Storage	Capacity of Tank (kg/Lit) each	Numbers of Tanks	Hazardous Characteristics of Chemical
1	HCl	HDPE tank	20 KL	8	Toxic & Corrosive
2	HMDO	SS tank	20 KL	6	Flammable
3	HMDS	SS tank	20 KL	2	Flammable
4	IPA	SS tank	10 KL	2	Flammable
5	Benzene	UG tank	50 KL	5	Flammable
6	Toluene	UG tank	50 KL	4	Flammable

7	Ammonia	SS tank	10 KL	2	Toxic & Corrosive
8	Bromine	SS Tank	8 KL	3	Toxic & Corrosive
9	CMIC	SS tank	25 KL	1	Flammable
10	Acetone	UG tank	50 KL	1	Flammable
11	Methanol	UG tank	50 KL	2	Flammable & Toxic

Storage of Hazardous chemicals in tanks

- All Chemicals will be stored in carboy/drum/barrels and tanks.
- All Liquid materials will be stored in drums and tanks.
- All solid materials will be stored in bags.

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

- Fire hydrants shall be provided as per requirement.
- Hazardous display boards and national fire prevention association code shall be displayed on all storage media.
- On site detectors for fire based on heat&/or smoke detection with alarm system shall be provided as per requirement.
- Breathe valves and Flame arrestors shall be provided.
- No smoking display boards shall be displayed.
- Wind indicator and siren shall be provided.
- Storage of drums at ground level and take measures to prevent corrosion of the drum base.
- Eye washer & safety shower in tank farm area.
- Flexible blower provided to storage area.
- MSDS displayed at storage area.
- Sign board as well as DO & DON'T instructions board at the entrance of storage area.
- Training to staff / operating personal w.r.t. safety precaution in handling & in case of emergency

Safety Details of Hazardous Chemicals

Sr. No.	Type of Hazardous Chemicals	Safety Measures
1.	Flammable& Explosive	Storage in compatible storage unit with flame proof fitting, also provide fire fighting measures. Only trained person allowed handling. Safety Shower cum eye washer provided. Drums to be stored on pallet with the suitable trap. Cautionary notice boards will be displayed.
2.	Corrosive	Storage in compatible storage unit with flame proof fitting, also provide fire fighting measures. Only trained person allowed handling. Safety Shower cum eye washer provided. Drums to be stored on pallet with the suitable trap. Cautionary notice boards will be displayed.
3.	Toxic	Sufficient Ventilation system will be provided to prevent accumulation of vapour pockets. Self-breathing apparatus, gas mask & emergency kits should made easily accessible in the event of emergencies. Neutralizing agent will be kept ready for tackle any emergency spillage.
4.	Reactive	Store minimum quantities. Decontamination facility & First-Aid provided. Sufficient Ventilation system will be provided

- **Applicability of PESO**:

License is obtained from PESO for Chlorine & Ammonia

Chemicals required PESO License	Quantity (KL/MT)	Remark
Ammonia (Existing)	10.4 MT	License is obtained from PESO. License is attached as Annexure-20
Chlorine	10.8 MT	
Benzene	250 KL	Applied for License from PESO Application Copy is attached as Annexure-20
Toluene	200 KL	
Acetone	50 KL	
Methanol	100 KL	
Ammonia (Proposed)	9.6 MT	Will apply for proposed quantity after getting EC/CTE.

Comments:

1) …
2) ….

H-2 Process safety details : (If applicable)

(Hydrogenationprocess, Nitrationprocess, Chlorinationprocess, ExothermicReaction etc.)

1. **Hydrogenation Process:**

   Company will install such system for hydrogenation and other hydrogen-handling processes involve a considerable amount of process equipment, instrumentation and piping components such as rectors, catalyst feed vessels pump valve, pressure relied device, etc. many such systems are located inside a building. Such facilities must be designed with four levels of safeguards namely, A high degree of automation, with remote operations, interlocks and alarms to monitor process and environment.

2. **Chlorination& Bromination Process:**
   We will install proper high thickness reactors and addition ports for Chlorine & Bromine Solutions. Atomization can make easy process for Chlorine, Bromine Chemical use, also install proper SS heat exchangers with automatic temperature cutoff system to achieve proper reaction and timeline in heating and cooling scenario. Chlorination & Bromination reaction hazard when process time is delay, demixing are main criteria. So, we already take precautions and will install automatic timer for reaction and proper mixing of chemicals during process.

3. **Exothermic Reaction:**
   The heating & cooling system or the reactor is based on the heat transfer fluid with a high velocity and large amount of pre-cooled water. While the high velocity ensures fast response to temperature changes. The reservoir with the pre-cooled water guarantees instantaneous cooling in case of a large exotherm or emergency.

H-3 Details of Fire Load Calculation

Total Plot Area:	51391 sqm
Area Utilized for Plant Activity:	19312sqm
Area Utilized for Hazardous Chemical Storage:	16.5sqm
Number of Floors:	G+3
Water Requirement for firefighting in KLD	171 m^3/Hr.
Water Storage tank provided for firefighting in KLD	350 KL
Details of Hydrant Pumps:	3 Nos. i. Electrical Pump ii. Jokey Pump iii. Diesel Pump
Nearest Fire Station:	Manjusar Fire Station @ 1.69 Km

	Applicability of Off-site Emergency Plan:	Applicable
H-4	**Details of Fire/NOC Certificate** ➢ Fire/NOC Certificate is obtained No. RFO-SFPS/F.No-18/NOC-Industries-181/911/2021. Dated on 11/02/2021.	
H-5	**Details of Occupational Health Centre**	

Number of permanent Employee	250
Number of Contractual Person/Labour	180
Area Provided for OHC	127.6 m^2
Number of First Aid Boxes	25 Nos.
Nearest General Hospital	Manjusar Hospital @ 0.6 Km
Name of Antidotes to be stored in plant	Primary First Aid, Artificial Respiration System&MoU with Manjusar Hospital (MoU is attached as Annexure -26).

- During the SEAC Video conference meeting dated 07.01.2022, Project Proponent (PP) and their technical expert and EIA consultant from M/s. Aryan Greens remains present and made technical presentation before the Committee.
- PP submitted satellite map showing that there is no any water bodies, villages, School, monuments etc. within 500 m radius of the project site. PP also submitted that there are no Eco sensitive zones, wild life sanctuaries within the 10 km area from the boundary of the project site.
- Deliberation of the Committee:
  - ✓ PP presented valid EC and CCA and its self certified compliance report. One closure order issued by GPCB in last three years and its revocation order also issued to unit in last three years.
  - ✓ NA permission for proposed project is reviewed.
  - ✓ Product profile with its end use discussed in depth and Committee insisted for revised product profile with discontinue products like SO2 bottling, inorganic products and other products which end use as raw material for API and submit proposal which is in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as category B2 projects.
  - ✓ Site Plan/ layout with fire plan & floor plans and provision of separate entry & exits, 6 m wide peripheral road, distillation area, OHC, tank farm, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, fresh & spent solvent storage areas, hazardous waste storage area, 33% greenbelt within premises.
  - ✓ Source of water will be bore well.
  - ✓ Domestic Waste water will be treated in soakpit and septic tank.

- ✓ Total waste water will be treated in primary ETP and then then will be evaporated in MEE/MVR after RO treatment.
- ✓ Firewood, Imported Coal &/or Briquettes is proposed as fuel in boiler and TFH.
- ✓ Two Stage Scrubber system is proposed for control of process gas emission.
- ✓ PP submitted hazardous waste matrix mentioning source of generation, quantity and Mode of disposal and committed to comply the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
- ✓ Fire hydrant plan, fire load calculation, Water balance diagram, Risk assessment, storage of Hazardous chemicals and its safety and Area adequacy was discussed.
- ✓ CER fund allocation, EMP, Green belt area was discussed.

- Looking to proposal, Committee insisted for submission of following documents,
  a. Revised flue gas matrix with removing fire wood as fuel and adequate APCM for thermo pack.
  b. Submit chlorine, bromine, benzene raw material storage considering its type of hazard and its properties along with its safety measures and SOP for its handling and storage.
  c. Submit revised EMP with mentioning auto control system , fire hydrant network and fire extinguisher cost.
  d. Revised CER cost related to environment field and for two years period in place of five years with considering need based activity in surrounding villages.
  e. Risk assessment of chlorine, bromine, benzene and other hazardous chemicals storage & its handling considering worst case scenario of any blast, leakage or fire and super impose of satellite image for dispersion model with mentioning its impact on surrounding village's residential habitat area and its mitigation measures. Also standard operating procedure (SOP) for handling and storage of chlorine, bromine, benzene and other hazardous chemicals storage and details of offsite emergency plan details considering population affected due to proposed Hazardous chemicals storage along with its remedial measures

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

1. Revised product profile with discontinue products like SO2 bottling, inorganic products and other products which end use as raw material for API and submit proposal which is in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as category B2 projects and subsequent changes in water, air and Hazardous waste details and EMP details.

2. Revised proposal of domestic waste water disposal other than soakpit.
3. Revised flue gas matrix with removing fire wood as fuel and adequate APCM for thermo pack.
4. Submit chlorine, bromine, benzene raw material storage considering its type of hazard and its properties along with its safety measures and SOP for its handling and storage.
5. Submit revised EMP with mentioning auto control system , fire hydrant network and fire extinguisher cost.
6. Revised CER cost related to environment field and for two years period in place of five years with considering need based activity in surrounding villages.
7. Risk assessment of chlorine, bromine, benzene, hydrogen and other hazardous chemicals storage & its handling considering worst case scenario of any blast, leakage or fire and super impose of satellite image for dispersion model with mentioning its impact on surrounding village's residential habitat area and its mitigation measures. Also standard operating procedure (SOP) for handling and storage of chlorine, bromine, benzene,hydrogen and other hazardous chemicals storage and details of offsite emergency plan details considering population affected due to proposed Hazardous chemicals storage along with its remedial measures.
8. Submit clarification regarding spent sulphuric acid, spent aluminium chloride solution from which process with its mass balance and also revised hazardous waste matrix with mentioning each hazardous waste source of generation from which products and its authenticated disposal.

7.	SIA/GJ/IND2/234185/2021	**M/s. Biocare Laboratories** Plot No. DP/18/11, Saykha GIDC Estate,Ta-Vagra, Dist:Bharuch.	Appraisal

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

Project status: **New**

- Project proponent (PP) has submitted online application vide no. SIA/GJ/IND2/234185/2021 on dated 13.11.2021 for obtaining Environmental Clearance.
- Project proponent has submitted Form – 1, Pre-Feasibility Report & Environment Management Plan as per Notification issued by MoEF&CC vide S.O. 1223(E) dated 27th March, 2020 regarding consideration of proposals or activities in respect of Active Pharmaceuticals Ingredients (API) as B2 category.
- This is a new unit and proposes for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below,

Sr. No.	Products	API OR INTERMEDIATE	CAS No.	Qty. (MT/ Month)	End Use

1	Nicotine	API	54-11-5	10	Used For smoking cessation to relieve withdrawal symptoms.
2	Tranexamic Acid	API	1197-18-8		Used to reduce or prevent hemorrhagic episodes
3	Pinaverium Bromide	API	53251-94-8		For Irritable Bowel Syndromes ,Irritable Bowel Syndromes
4	Bisoprolol Fumarate	API	66722-44-9		For Antihypertensive
5	Midodrine	API	133163-28-7		Used to treat orthostatic hypotension, treat low blood pressure.
6	Alpha Lipoic Acid	API	1077-28-7		Used to Alcoholic liver problems, altitude sickness, heart-related nerve problems, HIV-related brain problem
7	Paroxetine	API	61869-08-7		For Depression
8	Metoprolol Tartrate	API	37350-58-6		For Hypertension
9	Topiramate	API	97240-79-4		For Seizures
10	Dapagliflozin	API	461432-26-8		For Glycemia
11	Fexofenadine	API	83799-24-0		Seasonal allergic rhinitis; chronic urticaria
12	Tadalafil	API	171596-29-5		Treat erection problems
13	Rivaroxaban	API	366789-02-8		For Atrial fibrillation
14	Benfotiamine	API	22457-89-2		For diabetes Alzheimer disease, arthritis
15	Ketoconazole	API	65277-42-1		Used to treat seborrheic dermatitis and fungal skin infections
16	Fluconazole	API	86386-73-4		For Antifungal
17	Olmesartan	API	144689-63-4		For Hypertension
18	Nicotine Sulphate	API	65-30-5		Used in Chewing gums, Nicotine patches, Lozenges, and Nasal sprays
19	Granisetron HCl	API	107007-99-8		For Cancer
20	Pregabalin	API	148553-50-8		Used to relieve neuropathic pain
21	7-Ethyl Tryptophol	API	41340-36-7		For Etodolac
22	Labetalol HCl	API	32780-64-6		For arterial hypertension
23	Nicotine Bitartrate Dihydrate	API	6019-06-3		For nicotine lozenges and white snus

24	Nicotine Polacrilex	API	96055-45-7		Used to aid in smoking cessation
25	R&D[API]	API	-----	0.1	-----
26	Para Cresyl Methyl Ether	Pharmaceutical Intermediate	104-93-8	25	Pharmaceutical Intermediate
27	2-Amino 3,5 Dibromo Benzaldehyde	Pharmaceutical Intermediate	50910-55-9		Ambroxol Hcl Intermediate
28	3-Acetamido Phthalic Anhydride	Pharmaceutical Intermediate	6296-53-3		Apremilast Intermediate
29	4-Phenyl-3-Morpholinone	Pharmaceutical Intermediate	29518-11-4		Rivroxaban Intermediate
30	4-(4-Nitrophenyl)-3-Morpholinone	Pharmaceutical Intermediate	446292-04-2		Rivroxaban Intermediate
31	5-Bromo-2-chloro-4'-ethoxydiphenylmethane	Pharmaceutical Intermediate	461432-23-5		dapagliflozin Intermediate
32	4-Bromo-1-chloro-2-(4-methoxybenzyl)Benzene	Pharmaceutical Intermediate	333361-51-6		dapagliflozin Intermediate
33	2-(2-aminothiazol-4-yl) Acetic Acid Hydrochloride	Pharmaceutical Intermediate	66659-20-9		mirabegron Intermediate
34	[2-(4-Aminophenyl)ethyl]carbamic acid tert-butyl ester	Pharmaceutical Intermediate	94838-59-2		mirabegron Intermediate
35	4-bromo benzyl Bromide	Pharmaceutical Intermediate	589-15-1		irbesartan Intermediate
36	N-cinnamoyl-3-methoxyaniline	Pharmaceutical Intermediate	127033-74-3		For Brexpiprazole(Intermediate)
37	7-hydroxyquinolin-2(1h)-one	Pharmaceutical Intermediate	70500-72-0		For Brexpiprazole(Intermediate)
38	2- Bromo-5-hydroxy Benzaldehyde	Pharmaceutical Intermediate	2973-80-0		Crisaborole Intermediate
39	2-amino-4-methylpyrimidine	Pharmaceutical Intermediate	108-52-1		For Sulfamerazine (API)
40	3-amino-2-thiophenecarboxylic Acid	Pharmaceutical Intermediate	55341-87-2		For Tenoxicam (API)
41	2 Ethoxy Phenol	Pharmaceutical Intermediate	94-71-3		Pharmaceutical Intermediate

42	3-hydroxy 4-methoxy Benzaldehyde	Pharmaceutical Intermediate	621-59-0		For Galantamine (API)
43	2-methoxy 4 Methyl Phenol	Pharmaceutical Intermediate	93-51-6		Fragrance chemical
44	1-3 Benzodioxole 5-ol	Pharmaceutical Intermediate	533-31-3		For Paroxetine (API)
45	Myosmine	Pharmaceutical Intermediate	532-12-7		Nicotine Intermediate
46	Meldrum's Acid	Pharmaceutical Intermediate	2033-24-1		Sitagliptin Intermediate
47	3-Methoxy propiophenone	Pharmaceutical Intermediate	37951-49-8		For Tapentadol (API)
48	3,4 Dihydroxy Benzaldehyde	Pharmaceutical Intermediate	139-85-5		For Protocatachuic Acid (API)
49	Veratric Acid	Pharmaceutical Intermediate	93-07-2		Pharmaceutical Intermediate
50	4-(3,4-dichlorophenyl)-1-tetralone	Pharmaceutical Intermediate	79560-19-3		Pharmaceutical Intermediate
51	7-Methyl-2h-1,5-benzodiazepin-3(4h)-one	Pharmaceutical Intermediate	28940-11-6		Use In Pharmaceuticals Sanitizers(fragrance chemical)
52	1-(2,'5' Dimethoxy Phenyl Amino Ethanol)	Pharmaceutical Intermediate	3600-87-1		For Midodrine (API)
53	3,4-Dimethoxy Phenol	Pharmaceutical Intermediate	2033-89-8		For Thalicarpine (API)
54	3',4'-(Methylenedioxy)-acetophenone	Pharmaceutical Intermediate	3162-29-6		For Cinoxacin (API)
55	2,5- Dimethoxyphenacyl bromide	Pharmaceutical Intermediate	1204-21-3		For midodrine
56	3-Bromo-4-HydroxyBenzaldehyde	Pharmaceutical Intermediate	2973-78-6		For Bromoxynil (API)
57	3,4-(Methylenedioxy) Bromobenzene	Pharmaceutical Intermediate	2635-13-4		For ciphalotaxine (API)
58	Aminoacetaldehyde Dimethyl Acetal	Pharmaceutical Intermediate	22483-09-6		For Dolutegravir(Intermediate)

59	1-Bromo-2-Bromomethyl-4,5-dimethoxybenzene;	Pharmaceutical Intermediate	53207-00-4		For Pinaverium Bromide (API)
60	Benzaldehyde Dimethyl Acetal	Pharmaceutical Intermediate	1125-88-8		For Rosuvastatin (API)
61	3-4 Dimethoxy Benzaldehyde	Pharmaceutical Intermediate	120-14-9		Pharmaceutical Intermediate
62	2-Chloro 3-4 Dihydroxy Acetophenone	Pharmaceutical Intermediate	99-40-1		Epinephrine intermediate
63	Methyl-4-methoxy Acetoacetae	Pharmaceutical Intermediate	41051-15-4		For Dolutegravir(Intermediate)
64	DimethylAcetamide Dimethyl Acetal	Pharmaceutical Intermediate	18871-66-4		For Zaleplon (API)
65	O-BenzylHydroxyl amine	Pharmaceutical Intermediate	622-33-3		For Sitagliptin (API)
66	2,3-Dihydrofuran	Pharmaceutical Intermediate	1191-99-7		Pharmaceutical Intermediate
67	2-(2-Ethoxy Phenoxy)Ethylamine HCl	Pharmaceutical Intermediate	1051368-80-9		For Tamsulosin (API)
68	2-(2-ethoxy Phenoxy)Ethyl Amine	Pharmaceutical Intermediate	6781-17-5		For Tamsulosin (API)
69	N-(4-Cyanophenyl)-glycine	Pharmaceutical Intermediate	42288-26-6		For Dabigatran (API)
70	Anisaldehyde dimethylacetal	Pharmaceutical Intermediate	2186- 92- 7		• Octinoxate; •Paclitaxel
71	O- Benzylhydroxylamine hydrochloride	Pharmaceutical Intermediate	2687-43-6		For Sitagliptin (API)
72	Syringaldazine	Pharmaceutical Intermediate	14414-32-5		For Chlorine Test (API)
73	3-Amino-2-thiophenecarboxylic Acid	Pharmaceutical Intermediate	22288-78-4		Pharmaceutical Intermediate
74	N-hydroxy Phthalimide	Pharmaceutical Intermediate	524-38-9		Pharmaceutical Intermediate
75	3,4-dihydroxy Benzoic Acid	Pharmaceutical Intermediate	99-50-3		For Protocatechuic acid(API)

76	3,4- Dihydroxy Benzoic Acid Methyl Ester	Pharmaceutical Intermediate	2150-43-8		For Protocatechuic acid(API)
77	Piperonylic Methyl Ester	Pharmaceutical Intermediate	326-56-7		intermediate
78	Ethyl 3-[(Pyridin-2-yl)-amino]-propanoate	Pharmaceutical Intermediate	103041-38-9		For Dabigatran (API)
79	3-Nitro(4-methylamino) Benzoic Acid	Pharmaceutical Intermediate	41263-74-5		For Dabigatran (API)
80	Hydroquinone Dimethyl Ether	Pharmaceutical Intermediate	150-78-7		For Midodrine (API)
81	1-Methyl Indazole-3-carboxylic Acid	Pharmaceutical Intermediate	50890-83-0		For Granisetron HCl (API)
82	Isovanillic Acid	Pharmaceutical Intermediate	645-08-9		For Galantamine (API)
83	Methyl-6-methyl nicotinate	Pharmaceutical Intermediate	5470-70-2		For Etoricoxib (API)
84	Endo- Cis- Bicyclo-(2.2.1)-5-heptane-2,3-dicarboxylic Acid	Pharmaceutical Intermediate	3853-88-1		For Lurasidone HCl (API)
85	4-Hydroxy Benzyl Alcohol	Pharmaceutical Intermediate	623-05-2		For Bisoprolol Fumarate (API)
86	4-(1-methylethyl)-1,2-benzenediol	Pharmaceutical Intermediate	2138-43-4		Use in Fragrance chemicals
87	3-hydroxyanisole	Pharmaceutical Intermediate	150-19-6		Use in Fragrance chemicals
88	3-4 Dimethoxy Benzyl Alcohol	Pharmaceutical Intermediate	93-03-8		intermediate
89	3,4 Dihydroxy Benzaldehyde	Pharmaceutical Intermediate	139-85-5		For Protocatechuic Acid (API)
90	4-Propylbenzene-1,2-diol	Pharmaceutical Intermediate	2525-02-2		Intermediate of Pharmaceutical Sanitizer
91	(3S,4R)-4-(4-fluorophenyl)-3-hydroxymethyl-1-methylpiperidine	Pharmaceutical Intermediate	105812-81-5		For Paroxetine (API)
92	4-HydroxyBenzaldehyde	Pharmaceutical Intermediate	123-08-0		For Bisoprolol Fumarate (API)

93	Piperonyl Alcohol	Pharmaceutical Intermediate	495-76-1		For Paroxetine (API)
94	2,5- Dimethoxybenzaldehyde	Pharmaceutical Intermediate	93-02-7		• Idarubicin; •Fluoroglycofen
95	3,4-(Dimethoxy)-6-methylbenzyl Chloride	Pharmaceutical Intermediate	34523-76-7		For NCE Molecule (Antibiotics)
96	Anisole	Pharmaceutical Intermediate	100-66-3		For Bufuralol (API)
97	3,4-methylenedioxy Benzaldehyde	Pharmaceutical Intermediate	120-57-0		For Tadalafil Int. (API)
98	2-Chloro-2',5'-Dimethoxy Acetophenone	Pharmaceutical Intermediate	1204-22-4		Midodrine
99	2,4-Dimethoxy BenzylChloride	Pharmaceutical Intermediate	55791-52-1		intermediate
100	Methyl-4-[Bromomethyl]-Benzoate	Pharmaceutical Intermediate	2417-72-3		For Eprosartan (API)
101	4- Bromo Anisole	Pharmaceutical Intermediate	104-92-7		Specialty chemicals
102	4-Bromo Phenetole	Pharmaceutical Intermediate	588-96-5		Fragrance chemicals
103	Endo-9-methyl-9-azabicyclo[3,3,1]Nonane 3-amine 2 HCl	Pharmaceutical Intermediate	135906-03-5		For Granisetron HCl (API)
104	Bicyclo[2.2.1]Hep-tane-2,3-exo-dicarboximide	Pharmaceutical Intermediate	6713-41-3		For Lurasidone (API)
105	4-Bromo Phenol	Pharmaceutical Intermediate	106-41-2		For Eltrombopag API Intermediate
106	2-(2-ethoxy Phenoxy) Ethyl Bromide	Pharmaceutical Intermediate	3259-03-8		Pharmaceutical Intermediate
107	Ethyl-3[1-(3 Amino-4-(Methyl Amino)-phenyl) -n-(Pyridine-2-yl)-foramido)Proponate]	Pharmaceutical Intermediate	212322-56-0		For Dabigatran (API)

108	Ethyl N- {(2- {[(4- cyanophenyl)- amino]- methyl}- 1- methyl- 1H- benzimid azol- 5- yl}- carbonyl}- N- pyridin- 2- yl- β- alaninate	Pharmaceutical Intermediate	211915-84-3		For Dabigartan (API)
109	3,4-(Methylenedioxy)-toluene	Pharmaceutical Intermediate	7145-99-5		For Citaxenthan (API)
110	Methyl Pottasium Malonate	Pharmaceutical Intermediate	38330-80-2		Telaprevir API intermediate
111	P-acetamido Benzene Sulphonyl Chloride	Pharmaceutical Intermediate	121-60-8		Pharmaceutical Intermediate
112	Dimethyl Formamide Dimethyl Acetal	Pharmaceutical Intermediate	4637-24-5		For Ematinib(Intermediate)
113	BCFI [2-Butyl-4-chloro-5-formylimidazole]	Pharmaceutical Intermediate	83857-96-9		Losartan intermediate
114	Bromo OTBN	Pharmaceutical Intermediate	114772-54-2		Losartan intermediate
115	Diacetone-Beta Difructopyrenose	Pharmaceutical Intermediate	20880-92-6		Topiramate Intermediate
116	4-Methylcatechol Dimethyl Acetate	Pharmaceutical Intermediate	52589-39-6		Fragrance chemicals
117	3,4- Dihydroxytoluene	Pharmaceutical Intermediate	452-86-8		Fragrance chemicals
118	4-Chloro-4'-HydroxyBenzophenone	Pharmaceutical Intermediate	42019-78-3		Fexofenadine intermediate
119	Protocatechuic acid methylene ether	Pharmaceutical Intermediate	94-53-1		Intermediate
120	Custom synthesis of organic compound from production/pilot plant	-----	-----	2	
121	Custom synthesis of organic compound from R&D	-----	-----	5	
	TOTAL			42.1	

ENDUSE OF PRODUCTS

Sr. No.	Name of the Product	CAS No. (Product)	Type/ Category of Product (API/ Intermediate)	In case of Intermediate stage of API			Said API is used for/End Use of said API
				Stage of Intermediate n-1, n-2, etc	Name of API in which Intermediate Used/ End use of said Intermediate	CAS No. (API)	

1	Nicotine	54-11-5	API	--	--	--	Used For smoking cessation to relieve withdrawal symptoms.
2	Tranexamic Acid	1197-18-8	API	--	--	--	Used to reduce or prevent hemorrhagic episodes
3	Pinaverium Bromide	53251-94-8	API	--	--	--	For Irritable Bowel Syndromes ,Irritable Bowel Syndromes
4	Bisoprolol Fumarate	66722-44-9	API	--	--	--	For Antihypertensive
5	Midodrine	133163-28-7	API	--	--	--	Used to treat orthostatic hypotension, treat low blood pressure.
6	Alpha Lipoic Acid	1077-28-7	API	--	--	--	Used to Alcoholic liver problems, altitude sickness, heart-related nerve problems, HIV-related brain problem
7	Paroxetine	61869-08-7	API	--	--	--	For Depression
8	Metoprolol Tartrate	37350-58-6	API	--	--	--	For Hypertension
9	Topiramate	97240-79-4	API	--	--	--	For Seizures
10	Dapagliflozin	461432-26-8	API	--	--	--	For Glycemia
11	Fexofenadine	83799-24-0	API	--	--	--	Seasonal allergic rhinitis; chronic urticaria
12	Tadalafil	171596-29-5	API	--	--	--	Treat erection problems

13	Rivaroxaban	366789-02-8	API	--	--	--	For Atrial fibrillation
14	Benfotiamine	22457-89-2	API	--	--	--	For diabetes Alzheimer disease, arthritis
15	Ketoconazole	65277-42-1	API	--	--	--	Used to treat seborrheic dermatitis and fungal skin infections
16	Fluconazole	86386-73-4	API	--	--	--	For Antifungal
17	Olmesartan	144689-63-4	API	--	--	--	For Hypertension
18	Nicotine Sulphate	65-30-5	API	--	--	--	Used in Chewing gums, Nicotine patches, Lozenges, and Nasal sprays
19	Granisetron HCl	107007-99-8	API	--	--	--	For Cancer
20	Pregabalin	148553-50-8	API	--	--	--	Used to relieve neuropathic pain
21	7-Ethyl Tryptophol	41340-36-7	API	--	--	--	For Etodolac
22	Labetalol HCl	32780-64-6	API	--	--	--	For arterial hypertension
23	Nicotine Bitartrate Dihydrate	6019-06-3	API	--	--	--	For nicotine lozenges and white snus
24	Nicotine Polacrilex	96055-45-7	API	--	--	--	Used to aid in smoking cessation
25	R&D	--	--	--	--	--	--
26	Para Cresyl Methyl Ether	104-93-8	Intermediate				
27	2-Amino 3,5 Dibromo Benzaldehyde	50910-55-9	Intermediate	n-1	Ambroxol Hcl	23828-92-4	Used to treat pathological mucus secretion disorders

28	3-Acetamido Phthalic Anhydride	6296-53-3	Intermediate	n-2	Apremilast	608141-41-9	For treatment of psoriasis and psoriatic arthritis
29	4-Phenyl-3-Morpholinone	29518-11-4	Intermediate	n-2	Rivroxaban	366789-02-8	Used to treat deep vein thrombosis and pulmonary embolism
30	4-(4-Nitrophenyl)-3-Morpholinone	446292-04-2	Intermediate	n-1	Rivroxaban	366789-02-8	Used to treat deep vein thrombosis and pulmonary embolism
31	5-Bromo-2-chloro-4'-ethoxydiphenylmethane	461432-23-5	Intermediate	n-2	dapagliflozin	461432-26-8	For Glycemia
32	4-Bromo-1-chloro-2-(4-methoxybenzyl)Benzene	333361-51-6	Intermediate	n-1	dapagliflozin	461432-26-8	For Glycemia
33	2-(2-aminothiazol-4-yl) Acetic Acid Hydrochloride	66659-20-9	Intermediate	n-2	mirabegron	223673-61-8	For use in adults with overactive bladder
34	[2-(4-Aminophenyl) ethyl]carbamic acid tert-butyl ester	94838-59-2	Intermediate	n-2	mirabegron	223673-61-8	For use in adults with overactive bladder
35	4-bromo benzyl Bromide	589-15-1	Intermediate	n-1	irbesartan	138402-11-6	For Hypertension
36	N-cinnamoyl-3-methoxyaniline	127033-74-3	Intermediate	n-1	Brexpiprazole	913611-97-9	Used in the treatment of depressive disorder and schizophrenia.
37	7-hydroxyquinolin-2(1h)-one	70500-72-0	Intermediate	n-2	Brexpiprazole	913611-97-9	Used in the treatment of depressive disorder and schizophrenia.
38	2- Bromo-5-hydroxy Benzaldehyde	2973-80-0	Intermediate	n-2	crisaborol	906673-24-3	Used for the treatment of atopic dermatitis

39	2-amino-4-methylpyrimidine	108-52-1	Intermediate	n-1	Sulfamerazine	127-58-2	For Antibiotic & Antimicrobial
40	3-amino-2-thiophenecarboxylic Acid	55341-87-2	Intermediate	n-2	Tenoxicam	59804-37-4	Used to treat symptoms of rheumatoid arthritis and osteoarthritis
41	2 Ethoxy Phenol	94-71-3	Intermediate	n-2	Ethyl Vanillin	121-32-4	As a flavouring agent
42	3-hydroxy 4-methoxy Benzaldehyde	621-59-0	Intermediate	n-2	Galantamine	357-70-0	Used to manage Alzheimer's Disease.
43	2-methoxy 4 Methyl Phenol	93-51-6	Intermediate	n-1	chemical	---	anti-inflammatory compound in bamboo vinegar
44	1-3 Benzodioxole 5-ol	533-31-3	Intermediate	n-1	Paroxetine	61869-08-7	Used to treat depression, panic attacks, obsessive-compulsive disorder, anxiety disorders, and post-traumatic stress disorder
45	Myosmine	532-12-7	Intermediate	n-1	Nicotine	54-11-5	Used for smoking cessation to relieve withdrawal symptoms
46	Meldrum's Acid	2033-24-1	Intermediate	n-2	Sitagliptin	486460-32-6	Used to treat diabetes
47	3-Methoxy propiophenone	37951-49-8	Intermediate	n-1	Tapentadol	175591-09-0	Used to treat severe neuropathic pain
48	3,4 Dihydroxy Benzaldehyde	139-85-5	Intermediate	n-2	Protocatachuic Acid	99-50-3	antioxidant activity
49	Veratric Acid	93-07-2	Intermediate	n-1	Organic Synethesis	---	Erlotinib

50	4-(3,4-dichlorophenyl)-1-tetralone	79560-19-3	Intermediate	n-2	----	-----	Cetraline Hcl	
51	7-Methyl-2h-1,5-benzodiazepin-3(4h)-one	28940-11-6	Intermediate	n-2	Use in Pharmaceutical Sanitizer	--	Use in Pharmaceutical Sanitizer	
52	1-(2,'5' Dimethoxy Phenyl Amino Ethanol)	3600-87-1	Intermediate	n-1	Midodrine	133163-28-7	Used to treat orthostatic hypotension.	
53	3,4-Dimethoxy Phenol	2033-89-8	Intermediate	n-1	Thalicarpine	5373-42-2	Induces single-strand breaks in DNA and arrests cancer cells	
54	3',4'-(Methylenedioxy)-acetophenone	3162-29-6	Intermediate	n-1	Cinoxacin	28657-80-9	Used in urinary tract infections.	
55	2,5- Dimethoxyphenacyl bromide	1204-21-3	Intermediate	n-2	midodrine	133163-28-7	Used to treat orthostatic hypotension	
56	3-Bromo-4-HydroxyBenzaldehyde	2973-78-6	Intermediate	n-1	---	---	Pharmaceutical Intermediate	
57	3,4-(Methylenedioxy) Bromobenzene	2635-13-4	Intermediate	n-1	ciphalotaxine	63527-52-6	Used to treat susceptible Gram negative and Gram positive bacterial infections	
58	Aminoacetaldehyde Dimethyl Acetal	22483-09-6	Intermediate	n-2	Dolutegravir	1051375-16-6	Used for the treatment of HIV-1 infection	
59	1-Bromo-2-Bromomethyl-4,5-dimethoxybenzene;	53207-00-4	Intermediate	n-2	Pinaverium Bromide	53251-94-8	Used to treat symptoms related to irritable bowel syndrome (IBS)	

60	Benzaldehyde Dimethyl Acetal	1125-88-8	Intermediate	n-1	Rosuvastatin	287714-41-4	Used to lower lipid levels and reduce the risk of cardiovascular disease	
61	3-4 Dimethoxy Benzaldehyde	120-14-9	Intermediate	n-2	Chemical	---	as a flavorant and odorant	
62	2-Chloro 3-4 Dihydroxy Acetophenone	99-40-1	Intermediate	n-2	Epinephrine	51-43-4	Used to treat allergic reactions, to restore cardiac rhythm, and to control mucosal congestion, glaucoma, and asthma	
63	Methyl-4-methoxy Acetoacetae	41051-15-4	Intermediate	n-1	Dolutegravir	1051375-16-6	Used for the treatment of HIV-1 infection	
64	DimethylAcetamide Dimethyl Acetal	18871-66-4	Intermediate	n-1	Zaleplon	151319-34-5	Used for short term treatment of insomnia in adults.	
65	O-BenzylHydroxyl amine	622-33-3	Intermediate	n-2	Sitagliptin	486460-32-6	Used to treat diabetes	
66	2,3-Dihydrofuran	1191-99-7	Intermediate	n-2	Etodoloc	41340-25-4	Mild to modrate pain	
67	2-(2-Ethoxy Phenoxy)Ethyl amine HCl	1051368-80-9	Intermediate	n-1	Tamsulosin	106133-20-4	Used to treat benign prostatic hyperplasia, ureteral stones, prostatitis, and female voiding dysfunction.	
68	2-(2-ethoxy Phenoxy)Ethyl Amine	6781-17-5	Intermediate	n-1	Tamsulosin	106133-20-4	Used to treat benign prostatic hyperplasia, ureteral stones, prostatitis, and female voiding dysfunction.	

69	N-(4-Cyanophenyl)-glycine	42288-26-6	Intermediate	n-2	Dabigatran	211915-06-9	Used to treat health problem caused by a blood clot
70	Anisaldehyde dimethylacetal	2186- 92 - 7	Intermediate	n-1	---	-------	Falvor usage
71	O- Benzylhydroxylamine hydrochloride	2687-43-6	Intermediate	n-2	Sitagliptin	486460-32-6	Used to treat diabetes
72	Syringaldazine	14414-32-5	Intermediate	n-1	Chlorine Test	14414-32-5	Veterinary
73	3-Amino-2-thiophenecarboxylic Acid	22288-78-4	Intermediate	n-2	Tenoxicam intermediate	59804-37-4	Anti inflammatory drugs
74	N-hydroxy Phthalimide	524-38-9	Intermediate	n-2	---	----	organic synthesis
75	3,4-dihydroxy Benzoic Acid	99-50-3	Intermediate	n-1	Protocatechuic acid	99-50-3	antioxidant activity
76	3,4- Dihydroxy Benzoic Acid Methyl Ester	2150-43-8	Intermediate	n-2	Protocatechuic acid	99-50-3	antioxidant activity
77	Piperonylic Methyl Ester	326-56-7	Intermediate	n-1	----		For Fragrance Intermediate
78	Ethyl 3-[(Pyridin-2-yl)-amino]-propanoate	103041-38-9	Intermediate	n-2	Dabigatran	211915-06-9	Used to treat health problem caused by a blood clot
79	3-Nitro(4-methylamino) Benzoic Acid	41263-74-5	Intermediate	n-1	Dabigatran	211915-06-9	Used to treat health problem caused by a blood clot
80	Hydroquinone Dimethyl Ether	150-78-7	Intermediate	n-1	Midodrine	133163-28-7	Used to treat orthostatic hypotension.
81	1-Methyl Indazole-3-carboxylic Acid	50890-83-0	Intermediate	n-2	Granisetron HCl	107007-99-8	Used to prevent nausea and vomiting caused by cancer drug treatment

82	Isovanillic Acid	645-08-9	Intermediate	n-1	Galantamine	357-70-0	Used to manage Alzheimer's Disease.
83	Methyl-6-methyl nicotinate	5470-70-2	Intermediate	n-2	Etoricoxib	202409-33-4	Used to reduce the pain and swelling (inflammation) in the joints and muscles
84	Endo- Cis-Bicyclo-(2.2.1)-5-heptane-2,3-dicarboxylic Acid	3853-88-1	Intermediate	n-2	Lurasidone HCl	367514-88-3	treat schizophrenia and depressive episodes associated with bipolar disorder
85	4-Hydroxy Benzyl Alcohol	623-05-2	Intermediate	n-1	Bisoprolol Fumarate	104344-23-2	Used to treat high blood pressure (hypertension) and heart failure.
86	4-(1-methylethyl)-1,2-benzenediol	2138-43-4	Intermediate	----	----	----	fragrance chemicals
87	3-hydroxyanisole	150-19-6	Intermediate	-----	-----	-----	fragrance chemicals
88	3-4 Dimethoxy Benzyl Alcohol	93-03-8	Intermediate	-----	-----	-----	Organic synthesis of intermediate
89	3,4 Dihydroxy Benzaldehyde	139-85-5	Intermediate	n-1	Protocatechuic Acid	99-50-3	antioxidant activity
90	4-Propylbenzene-1,2-diol	2525-02-2	Intermediate	------	Intermediate of Pharmaceutical Sanitizer	----	Intermediate of Pharmaceutical Sanitizer
91	(3S,4R)-4-(4-fluorophenyl)-3-hydroxymethyl-1-methylpiperidine	105812-81-5	Intermediate	n-2	Paroxetine	61869-08-7	Used to treat depression or other mental illnesses

92	4-HydroxyBenzaldehyde	123-08-0	Intermediate	n-2	Bisoprolol Fumarate	104344-23-2	Used to treat high blood pressure (hypertension) and heart failure.
93	Piperonyl Alcohol	495-76-1	Intermediate	n-2	paroxetine	61869-08-7	Used to treat depression or other mental illnesses
94	2,5- Dimethoxybenzaldehyde	93-02-7	Intermediate	n-1	Tadalafil Int.	171596-29-5	Used to treat erectile dysfunction, benign prostatic hyperplasia, and pulmonary arterial hypertension.
95	3,4-(Dimethoxy)-6-methylbenzyl Chloride	34523-76-7	Intermediate	-----	---	----	For HIV Medications (pharma)
96	Anisole	100-66-3	Intermediate	n-1	Bufuralol	54340-62-4	Flavoring chemicals
97	3,4-methylenedioxy Benzaldehyde	120-57-0	Intermediate	n-2	Tadalafil Int.	171596-29-5	Used to treat erectile dysfunction, benign prostatic hyperplasia, and pulmonary arterial hypertension.
98	2-Chloro-2',5'-Dimethoxy Acetophenone	1204-22-4	Intermediate	n-1	Midodrine	133163-28-7	Used to treat orthostatic hypotension
99	2,4 - Dimethoxy BenzylChloride	55791-52-1	Intermediate	n-1	Chemical	----	Synthesis
100	Methyl-4-[Bromomethyl]-Benzoate	2417-72-3	Intermediate	n-2	Eprosartan	133040-01-4	Used to treat hypertension, diabetic nephropathy, and congestive heart failure.
101	4- Bromo Anisole	104-92-7	Intermediate	-----	Specialty chemicals	-----	Specialty chemicals

102	4-Bromo Phenetole	588-96-5	Intermediate	-----	Fragrance chemicals	-----	Fragrance chemicals	
103	Endo-9-methyl-9-azabicyclo[3,3,1]Nonane 3-amine 2 HCl	135906-03-5	Intermediate	n-2	Granisetron HCl	107007-99-8	Used to prevent nausea and vomiting caused by cancer drug treatment	
104	Bicyclo[2.2.1] Hep-tane-2,3-exo-dicarboximide	6713-41-3	Intermediate	n-1	Lurasidone	367514-87-2	an atypical antipsychotic used to treat schizophrenia and depressive episodes associated with bipolar	
105	4-Bromo Phenol	106-41-2	Intermediate	n-1	Eltrombopag	496775-61-2	Used to treat thrombocytopenia or aplastic anemia	
106	2-(2-ethoxy Phenoxy) Ethyl Bromide	3259-03-8	Intermediate	n-2	tamsulosin	106133-20-4	Used in men to treat the symptoms of an enlarged prostate	
107	Ethyl-3[1-(3 Amino-4-(Methyl Amino)-phenyl) -n-(Pyridine-2-yl)-foramido)Propionate]	212322-56-0	Intermediate	n-2	Dabigatran	211915-06-9	Used to treat health problem caused by a blood clot	
108	Ethyl N- {(2- {[(4- cyanophenyl)- amino]- methyl}- 1- methyl- 1H- benzimidazol- 5- yl}- carbonyl} - N- pyridin- 2 - yl- β- alaninate	211915-84-3	Intermediate	n-2	Dabigartan	211915-06-9	Used to treat health problem caused by a blood clot	
109	3,4-(Methylenedioxy)-toluene	7145-99-5	Intermediate	n-2	Citaxenthan		Use in pulmonary artery hypertension	

110	Methyl Pottasium Malonate	38330-80-2	Intermediate	n-1	Telaprevir	402957-28-2	Used in treatment of chronic Hepatitis C Virus infections.
111	P-acetamido Benzene Sulphonyl Chloride	121-60-8	Intermediate	n-1	sulfanilamide	63-74-1	They are used in the prevention and treatment of bacterial infections, diabetes mellitus, edema, hypertension, and gout
112	Dimethyl Formamide Dimethyl Acetal	4637-24-5	Intermediate	n-2	Ematinib	152459-95-5	Used to treat a leukemias, myelodysplastic/myeloproliferative disease,systemic mastocytosis
113	BCFI [2-Butyl-4-chloro-5-formylimidazole]	83857-96-9	Intermediate	n-1	Losartan	114798-26-4	Used to treat hypertension and diabetic nephropathy, and is used to reduce the risk of stroke.
114	Bromo OTBN	114772-54-2	Intermediate	n-2	Losartan	114798-26-4	Used to treat hypertension and diabetic nephropathy, and is used to reduce the risk of stroke.
115	Diacetone-Beta Difructopyranose	20880-92-6	Intermediate	n-1	Topiramate	97240-79-4	Used to prevent and control seizures
116	4-Methylcatechol Dimethyl Acetate	52589-39-6	Intermediate	n-2	Fragrance(watermelon Ketone)	28940-11-6	Therapeutic Applications
117	3,4- Dihydroxy toluene	452-86-8	Intermediate	n-2	Flavoring chemicals	---	Flavoring chemicals

118	**4-Chloro-4'-HydroxyBenzophenone**	**4201-78-3**	**Intermediate**	**n-1**	**Ematinib**	**152459-95-5**	**Used to treat a leukemias, myelodysplastic/myeloproliferative disease,systemic mastocytosis**
119	**Protocatechuic acid methylene ether**	**94-53-1**	**Intermediate**	**n-2**	**Losartan**	**114798-26-4**	**Used to treat hypertension and diabetic nephropathy, and is used to reduce the risk of stroke.**
120	**Custom synthesis of organic compound from production/pilot plant**	**--**	**--**	**--**	**--**	**--**	
121	**Custom synthesis of organic compound from R&D**	**--**	**--**	**--**	**--**	**--**	**--**

- The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020.
- PP was called for Video conference meeting for presentation on dated 07.01.2022.
- Since the proposed project is falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
- During the SEAC Video conference meeting dated 07.01.2022, Project Proponent (PP) and their technical expert and EIA consultant from M/s. Vasundhara Enterprise remains present and made technical presentation before the Committee.
- During meeting, Committee noted that PP submitted proposal of Nicotine as API, Custom synthesis of organic compound from R&D and Custom synthesis of organic compound from production/pilot plant. Hence Committee asked for purpose of it, Technical expert of PP informed that pilot plant is for proposed API products and R & D is for custom synthesis basis for which Committee disagree with proposal.

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

1. Revised product profile with discontinue products which is not in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as

category B2 projects along with R & D product in Kg/Month in place of 5 MT/Month and subsequent changes in water, air and Hazardous waste details and EMP details.

2. Technical clarification regarding proposed products Custom synthesis of organic compound from production/pilot plant with authenticated documents and for which products having pilot plant instead of mentioning custom synthesis of organic compound.

8.	SIA/GJ/IND2/236120/2021	**M/s. Swati Chemicals (UNIT-II)** Plot No 625, Phase IV, GIDC Estate Vatva, Ahmedabad.	Appraisal

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

Project status: **New**

- Project proponent (PP) has submitted online application vide no. SIA/GJ/IND2/236120/2021 on dated 13.11.2021 for obtaining Environmental Clearance.
- Project proponent has submitted Form – 1, Pre-Feasibility Report & Environment Management Plan as per Notification issued by MoEF&CC vide S.O. 1223(E) dated 27th March, 2020 regarding consideration of proposals or activities in respect of Active Pharmaceuticals Ingredients (API) as B2 category.
- This is a new unit and proposes for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below,

Sr. No.	Name of the Products	CAS no.	API Or Intermediate	Quantity MT/Month	*End-use of products
1	Benzethonium Chloride	121-54-0	API	5.0	Anti-microbial - Benzethonium chloride exhibits a broad spectrum of microbiocidal activity against bacteria, fungi, mold and viruses, Antibacterial, Anti septic
2	Meta Chloroper Benzoic Acid	937-14-4	Intermediate	2.0	Used to treat peptic ulcer disease, lower intraocular pressure in patient
3	M- Chloro benzoyl Chloride	618-46-2	Intermediate	10.0	Used to treat peptic ulcer disease, lower intraocular pressure in patient
4	N- Butyl Diethyl Malonate (NBDM)	133-08-4	Intermediate	10.0	Anti-inflammatory, Arthritis
5	Chloro Acetyl Chloride	79-04-9	Intermediate	10.0	Local Anesthetic
6	m- Chloro Toluene	108-41-8	Intermediate	5.0	Used to treat peptic ulcer disease, lower intraocular pressure in patient
Total				42.0	

ENDUSE OF PRODUCTS

Sr. No.	Name of the Product	CAS No.	Type/ Category of	In case of Intermediate stage of API	Said API is used for/End Use of said API

		(Product)	Product (API/ Intermediate)	Stage of Intermediate n-1, n-2, etc	Name of API in which Intermediate Used/ End use of said Intermediate	CAS No. (API)	
1.	Benzethonium Chloride	121-54-0	API	-	API-	-	Anti-microbial - Benzethonium chloride exhibits a broad spectrum of microbiocidal activity against bacteria, fungi, mold and viruses, Antibacterial, Anti septic
2.	Meta Chloro per benzoic acid	937-14-4	Intermediate	N-1	Rabeprazole, Bicalutamide, Brinzolamide API	117976-89-3 90357-06-5, 138890-62-7	Used to treat peptic ulcer disease, lower intraocular pressure in patient
3.	M-Chlorobenzoyl Chloride	618-46-2	Intermediate	N-2	Rabeprazole, Bicalutamide, Brinzolamide API	117976-89-3 90357-06-5, 138890-62-7	Used to treat peptic ulcer disease, lower intraocular pressure in patient
4.	N- Butyl Diethyl Malonate (NBDM)	133-08-4	Intermediate	N-1	Phenylbutazone API	50-33-9	Anti inflammatory, Arthritis
5.	Chloro Acetyl Chloride	79-04-9	Intermediate	n-2	Lignocain API	137-58-6	Local Anesthetic
6.	m- Chloro Toluene	108-41-8	Intermediate	n-3	Rabeprazole, Bicalutamide, Brinzolamide API	117976-89-3 90357-06-5, 138890-62-7	Used to treat peptic ulcer disease, lower intraocular pressure in patient

- The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020.
- PP was called for Video conference meeting for presentation on dated 07.01.2022.
- Since the proposed project is falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
- PP submitted salient features of water, air and Hazardous waste management are as under,

Sr. no.	Particulars	Details
A-1	Total **cost of Proposed** Project (Rs. in Crores):	

Total Project
Rs. 10.0 Crores

Break-up of proposed project Cost:

Details	Project Cost (Rs. In Crores)
Land	6.0
Building	
Machinery	4.0
Total	**10.0**

-

A-2	**Details of Environmental Management Plan (EMP)**	As below:

-

Sr. No	Unit	Details	Capital Cost (Rs.in Lacs)	Operating Cost (Lacs /Month)	Maintenance Cost (Lacs/ Month)	Total Recurring Cost (Lacs/ Month)
1	Effluent Treatment Plant	Common facility membership	10.0	0.70	0.10	0.80
2	Air	Installation of stack/vent & it"s monitoring facilities including provision of air pollution control system	10.0	0.30	0.10	0.40
3	AWH Monitoring	To conduct EMS efficacy & environment monitoring	-	0.50	-	0.50
4	Hazardous Management	Getting membership of TSDF site	3.0			
5	Green belt development	Development of Greenbelt Area	5.0	-	0.20	0.20
6	Health & Safety	Provision of Occupational Health Centre with Antidotes	15.0	0.5	0.2	0.7
7	Fire Prevention	Provision of Safety Measures including Fire Detectors, PPE, Sensors, Alarm, Fire Hydrant, Fire Extinguishers, Proxymate Suits, Foam Trolley, Lightening arrestors etc.	40.0	1.0	0.5	1.5
8	Other	CER Cost	20.0	-	-	-
		Provision of PLC based SCADA system	25.0	2.6	1.0	3.6
Total			**128.0**	**5.6**	**2.1**	**7.7**

Comments:

2.

A-3	**Details of CER** -

PP shall carry out CER activities as below:

- ✓ Rain Water harvesting System and including Construction of ground Water tank to Collect Rain Water in Panchayat area and also propose water distribution system for this collected water at Vinzol, Vinobanagar

B	**Land / Plot ownership details:** GIDC Office order in the name of company vide letter No GIDC/RM/AHM/TRF/PTO/VAT1/516 Dated 27.12.2021
B-1	**Plot area** Total Plot area: 3502 Sq. m. -

B-2

Sr No.	Description of Area	Ground Floor	Percentage
1	Production	700	20.0
2	Raw material Storage	200	5.7
3	Product Storage	100	2.9
4	Office and Lab Area	35	1.0
5	Occupational Health Center	15	0.4
6	Utility+ Fuel Area	120	3.4
7	Effluent Treatment plant	43	1.2
8	ETP Sludge Storage	50	1.4
9	Process waste Storage	100	2.9
10	Chlorine Storage Area	60	1.7
11	Green Belt Area	1156	33.0
12	Road & Open	923	26.4
	TOTAL	**3502**	100

Area adequacy

Sr No.	Description of Area	Criteria for Storage	Inventory Required (MT) (KL)	Area Required (m^2)	Area Proposed (m^2)
1	Finished Product Storage Area (1 Week inventory)	42 MT	10.5	15	100
2	Raw Material Store area (1 Week inventory)	1576 Bag	39.40	45.31	200
		35 Drum	7.35	15.75	
3	Chlorine Tonner Storage (1 Week inventory)	0.9 MT X 2	1.8 MT	10	60

4	Hazardous Waste Storage area (ETP) (90 Day Inventory)	5 MT/year	1.5 MT	5	43 50
	Effluent Treatment Plant	1.0 KLD	1.0 KLD	10	
5	Process waste storage (30 Day Inventory)	432 MT/Year	36 MT	50	100
6	Utility Area	-	Boiler – TFH	50	120
	Fuel Area (5 Day Inventory)	3.5 MT/Day	17.5 MT	30	
	Fly Ash Storage (1 Week Inventory)	21 MT/year	0.5 MT	5	
7	Manufacturing Plant	-	42 MT/Month	-	700
8	Occupation health center	-	-	-	15
90	Admin Office and Lab	-	-	-	35

Note: The unit is going to manufacture with a quantity of 42 MT/Month (06 Number of products) in total plot area of 3502 square meter. The unit has proposed dedicated raw material storage (200 square meter) and finish good storage area (100 square meter). The unit has proposed dedicated storage for Chlorine, ETP Waste, Process waste, ETP and utility which is adequate. The unit has proposed 33% of green belt area within plant premises. Looking to the plot area, number of products and its quantity, the area is adequate to handle this 42 MT/Month production.

- Hence, adequate area is available for proposed new Facility.

Comments:

B-3 **Green belt area**

	Total (Sq. meter)
Area in Sq. meter	1156
% of total area	33 %

Note: Unit has proposed to carry out 33% Greenbelt within premises.

Comments:

The condition shall be given that -

1.

C **Employment generation**

Total
25

-

D **WATER**

D-1 **Source of Water Supply**

- GIDC Water Supply

Comments:

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

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

-

Sr No	Category	Water Consumption KLD	Remark
1.	Domestic Purpose	1.0	
2.	**Other use(Gardening)**	**0.8**	**Reuse from STP**
3.	**INDUSTRIAL**		
	Process	0.65	
	Boiler	8.0	3 KLD Condensate + 5 KLD Fresh
	Cooling	5.0	2 KLD condensate + 3 KLD fresh
	Washing	0.5	
	Scrubber	0.03	
	Total water Consumption (Domestic)	**1.8**	
	Total water Consumption (Industrial)	**14.18**	
	Grand total(1+2+3)	**16.78**	
	Reuse	**5.8**	
	Total Fresh Water	**10.98**	

-

Comments:

3. .

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

-

Sr. No	Category	Waste Water Generation KLD	Remark
1.	Domestic Purpose	0.8	Send to STP
2.	INDUSTRIAL		
	Process	NIL	
	Boiler	0.2	
	Cooling	0.27	
	Washing	0.5	
	Scrubber*	0.2*	Spent HCL
	Total wastewater Generation (Domestic)	**0.8**	**Send to STP and reuse in gardening**
	Total wastewater generation	**1.0**	

	(Industrial)		

-

Sr. No.	Name of Product	Kl per MT of Product			KL Per Day			Remark
		Water Consumption	Scrubbing	Waste Water Generation	Water Consumption	Scrubbing	Waste Water Generation	
1.	Benzethonium Chloride	-	-	-	-	-	-	-
2.	Meta Chloroper Benzoic Acid	0.847	-	-	0.068	-	-	Liquid product (70 to 75 % Water)
3.	m-Chloro benzoyl Chloride	-	0.5	-	-	0.2	-	-
4.	N- Butyl Diethyl Malonate (NBDM)	0.6	-	-	0.240	-	-	NaBr Solution
5.	Chloro Acetyl Chloride	-	-	-	-	-	-	-
6.	m-Chloro Toluene	1.25	-	-	0.250	-	-	CuCl2 Solution
	Total in KL				**0.55**	**0.2**		

Note :
There will be no wastewater generation from the manufacturing process. The water is required in manufacturing of three product namely Meta Chloroper Benzoic Acid, N- Butyl Diethyl Malonate (NBDM) and m- Chloro Toluene.

- The Meta Chloroper Benzoic Acid is liquid product hence there will be no wastewater generation from this product.
- The water utilized in other two product will generate in the form of NaBr solution and CuCl2 solution which is considered in hazardous waste matrix and it will be disposed in line with HWM Rule.
- The water utilized in m- Chloro benzoyl Chloride for scrubbing purposed and scrubbing will disposed in line with HWM Rule

Comments:

	2.
D-4	Break-up of waste water disposal & facility (For Domestic)

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

Comments:

3. .

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

	Sr. no.	Quantity	Facility
	1	1.0	Common Spray drying Facility
	Total	1.0	

Comments:

7. .

E	**AIR**
E-1	Power (Electricity) requirement : 350 KW
E-2	**Flue gas emission details**

-

Sr. no	Stack attached to	Stack height and dia.	Fuel	Consumption	APCM	Types of Emission
1	Boiler (900 kg/hr)	30.0 m	Briquette of Agro west	1.5 MT/day	Multi Cyclone separator with bag filter followed by water scrubber	PM SOx NOX
2	TFH 5 lakh Kcal/hr	30.0 m	Briquette of Agro west	2 MT/day	Multi Cyclone separator with bag filter followed by water scrubber	PM SOx NOX

Note : The operation of boiler is considered at 4-6 hours/Day and TFH operation is considered as maximum 1.00-2.00 hour

E-3	**Process gas** i.e. Type of pollutant gases (SO_2, HCl, NH_3, Cl_2, NO_x etc.)

-

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 Vessels (Fro product M-chloro benzoyl chloride)	21	Two Stage Water Scrubber	HCl

-

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

- The entire manufacturing activities will be carried out in the closed reactors and regular checking and maintenance of reactors will be carried out to avoid any leakages.
- The tank vents will be equipped with either a carbon filter or an oil trap to prevent water vapor from entering the tank as it breathes.
- Control of all parameters on a continuous basis will be done by adequate control valves, pressure release valves and safety valves etc.
- All the flange joints of the pipe lines will be covered with flange guards.
- All the raw materials will be stored in isolated storage area and containers tightly closed.
- There will also be provision of adequate ventilation system in process plant and hazardous chemical storage area
- A regular preventive maintenance will be planned to replace or rectify all gaskets, joints etc.

Comments for E2, E3 & E4:

3.

F	**Hazardous waste**
F-1	**Hazardous waste management matrix**

-

Sr. No	Types of Hazardous Waste	Sources	Category	MT/Year Propose	Management of HW
1.	ETP Sludge/ Evaporation Salt	ETP area	35.3	1.0	Collection, Storage, transportation and disposal at any registered TSDF site
2.	Used Oil	Plant Machinery	5.1	0.05	Collection, Storage, Transportation, sell to MoEFCC approved recyclers OR Reused as Lubricant within premises
3.	Discarded Container/ Liner	Material Storage and Handling	33.3	3.0	Collection, storage, Transportation and Dispose to Registered Recycler
4.	Solvent residue	Distillation Unit	26.3	5.45	Collection, Storage, Transportation and disposal by co processing or by disposal to CHWIF
5.	Spent solvent	Benzethonium Chloride, Meta Chloroper Benzoic Acid	26.4	273	Recovered, storage and reused in the next batch of same product after Distillation
6.	Sodium Bromide Solution (42 -45 %)	N-Butyl Diethyl Malonate (NBDM)	28.4	174	Collection, Storage, and Sell as a product
7.	Cupric Chloride Solution	m- Chloro Toluene	28.5	258	Collection, Storage, and Sell as a product
8.	Spent HCl	Scrubbing	26.4	60.0	Collection, Storage, and

	(22- 30 %)	media of m-Chloro benzoyl Chloride			utilized in ETP area and evaporated

-

Comments:

2.

F-2	Non- Hazardous waste management matrix

- ✓ Fly Ash generation will be 21 MTPA.
- ✓ STP sludge generation will be 2.00 MTPA

Comments:

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

Solvent Name	Consumption	Generation	Recovery %	Loss %
	MT/Month	MT/Month		
Toulene	1.709	1.673	98	2.0
Ethyl Acetate	2.14	2.10	98	2.0
Tert Butanol	4.0	3.96	99	1.0

G-2	**VOC emission** sources and its mitigation measures

- Sources of fugitive emissions include storage of chemicals, solvents storage, loading and unloading section, raw material handling and, hazardous waste storage area.

Measures:

- The fugitive emissions in terms of handling losses will get reduced by proper storage and handling.
- Hazardous chemicals will be stored as per standard criteria.
- Periodically monitoring will be carried out as per the post project monitoring plan.
- Proper ventilation in storage & production area shall be ensured
- All materials must be stored in suitable packing to prevent contamination of air
- Enclosed system & efficient procedures for materials charging shall be ensured.
- Procedures for start-up shut down, operation & maintenance procedures shall be established & maintained.
- The coverage of greenbelt around the plant also acts as natural barrier to stop carrying of dust along with the wind current.

G-3	**LDAR proposed:**

- The industry is engaged in the manufacturing of bulk drugs and fine chemical, which require solvents during various unit processes. The unit uses solvent which is
- The spent solvent generated during the manufacturing process will be recovered by way of distillation and will be reused in the process. The process of the solvent recovery system is described hereunder;
- After completion of the reaction, the whole mass in the reactor will be pumped to SS reactor which is subjected to the distillation to separate finished product and recover solvent.
- Firstly, the mass will be distilled at required temperature and pressure where pure solvent will be distilled out depending on their boiling points and it will be collected in

the recovered solvent storage tank and reused in the process.

- Vacuum will also be applied as per requirement during distillation.
- The overall requirements and mass balance for the solvent based on mass balance of each product and summary has been worked out which is given in Table as above. The schematic diagram of the solvent recovery system is shown in the Figure
- Measures for achieving maximum solvent recovery:
- The entire manufacturing activities & distillation process will be carried out in totally closed system.
- Regular maintenance of the pipeline and valves & fittings will be carried out regularly to avoid any leakages.
- Distillation column will be connected with condenser where cooling water will be used as media and also equipped with vacuum system.
- The condenser will be provided with the sufficient HTA and residence time to achieve more than 98% recovery.
- During the manufacturing activity as well as during distillation process 2% of the total solvent will be lost; approx. 98 % of solvent will be recovered during the process. The fresh solvent requirement will depend on solvent loss during distillation as well as manufacturing activity.

-

Leakage/ Component	**Source of equipment leak**	**Detection Method**
Valves	Flange leakage	Visual Check
Pump	From pump seal	Visual Check
Open vents from the tank top	Overflow of tank	High level alarm
High pressure leak	-	Audible Method
Connectors	Gasket failure and improperly torqued bolts on flanges.	For welded flanges place the probe at the outer edge of the flange-gasket interface and sample the circumference of the flange. If the source is rotating shaft, position the probe within 1 cm of the shaft seal interface for the survey.
Open ended line	At the point of line Incorrect implementation of block and bleed procedure	Place the probe inlet at approximately the entry of the opening to the atmosphere.

-

Comments:

1.

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

-

Sr. no	Name of Chemical/Gas	Capacity of Tonner in MT	Number of Tonner	Hazardous Characteristics of Chemical
1	Chlorine Tonner	0.9 X 2	2	Toxic

-

Storage of Hazardous Gas in Tonner

- The charging of material will be carried out by PLC based SCADA System semi automization
- Valve, pipeline are checked and maintain, in good condition through preventive maintenance
- Joints are checked regularly to detect any Leakage.
- ISI Portable fire extinguisher & Fire Hydrant line is provided as per norms.
- Flame proof electrical fittings / installation provided.
- Proper Earthing, Bonding & flange-to-flange jump ring is provided.
- CCE approved Separate Storage area with door having locking arrangement.
- Auto & manual sprinkler provided.
- Spark arrester are installed on all vehicles inside the premises.
- Apron, Hand gloves, gumboot, goggles and helmet provided.
- Train operator employed.
- Eye washer & shower provided.
- Good ventilation in the area.
- Flame arrester with breather valve.
- Tonner will be kept under shed.

Sr No	Name of Raw Material	State	Drum/ bag Capacity (kg)	No. Of Drum /bag	Storage at time (MT)	Storage	MOC	Hazardous
1	2- Chloro Ethanol	Liquid	210	1	0.88	Drum	HDPE	Danger
2	Addition of NBB	solid	25	312	7.8	Bag	HDPE	Danger
3	Benzyl chloride	liquid	210	1	0.51	Drum	HDPE	Danger
4	Caustic Flakes	Solid	25	41	1.024	Bag	HDPE	Danger
5	Chlorine Gas	Gas	900	2	1.8	Tonner	MS	Toxic
6	Cucl	Solid	25	160	4	Bag	HDPE	Danger
7	DEM	liquid	210	4	9.4	Drum	HDPE	WARNING
8	Ethyl Acetate	liquid	210	5	9.545	Drum	HDPE	WARNING
9	Ethyl Acetate Wash	liquid	210	1	1.155	Drum	HDPE	WARNING
10	HCl	Liquid	210	15 KL	9.25	Tank	HDPE	Corrosive
11	hydrogen peroxide	liquid	210	1	0.9	Drum	HDPE	Danger
12	M-cl toluene	Solid	25	376	9.4	Bag	HDPE	Flammable
13	Meta chloro benzoyl chloride	Liquid	210	1	2.13	Drum	HDPE	Danger
14	Mono Chlono acetic acid(MCA)	Solid	25	416	10.4	Bag	HDPE	NA
15	M-Toluidine	liquid	210	2	4.25	Drum	HDPE	Danger

16	Na-metal slowly add	Solid	25	52	1.3	Bag	HDPE	Danger
17	P- tert-octyl Phenol	Solid	25	109	2.735	Bag	HDPE	Danger
18	Sodium nitrite	Solid	25	110	2.75	Bag	HDPE	Non Flammable
19	Tert-Butanol	liquid	210	4	8	Drum	HDPE	Danger
20	Toluene	Liquid	210	2	4.015	Drum	HDPE	Flammable
21	DMAEC	Liquid	210	3	5.895	Drum	HDPE	Flammable

Brief note on storage of Hazardous chemicals in Drums

Toluene/Ethyl Acetate/Butanol/Chlorine

- Tank, valve, pipeline are checked and maintain, in good condition through preventive maintenance
- Joints are checked regularly to detect any Leakage.
- ISI Portable fire extinguisher & Fire Hydrant line is provided as per TAC norms.
- Flame proof electrical fittings / installation provided.
- Proper Earthing, Bonding & flange-to-flange jump ring is provided.
- Flame arrester provided on vent line.
- CCE approved Separate Storage area with door having locking arrangement.
- Auto & manual sprinkler provided.
- Spark arrester are installed on all vehicles inside the premises.
- Apron, Hand gloves, gumboot, goggles and helmet provided.
- Train operator employed.
- Eye washer & shower provided.
- Good ventilation in the area.
- Flame arrester with breather valve.
- Perforated dip pipe in dyke wall will be provided to monitor & detect any leakage.
- Sump will be made under dyke to recover leakage material from dyke.
- Drums will be kept under RCC dyke.

Brief note on storage of Hazardous chemicals other than Drums i.e. Barrels, Carboys, Bags etc.

1. HCl
2. Sodium Nitrite
3. Benzyl Chloride
4. CuCl2

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
Raw material Storage	• Valve, pipeline are checked and maintain, in good condition through preventive maintenance • Joints are checked regularly to detect any Leakage. • ISI Portable fire extinguisher & Fire Hydrant line is provided as per TAC norms. • Flame proof electrical fittings / installation provided. • Proper Earthing, Bonding & flange-to-flange jump ring is provided. • Flame arrester provided on vent line. • CCE approved Separate Storage area with door having locking arrangement. • Auto & manual sprinkler provided. • Spark arrester are installed on all vehicles inside the premises. • Apron, Hand gloves, gumboot, goggles and helmet provided. • Train operator employed. • Eye washer & shower provided. • Tank's thickness measured on regular interval. • Good ventilation in the area. • Flame arrester with breather valve. • Perforated dip pipe in dyke wall will be provided to monitor & detect any leakage from drums . • Sump will be made under drain to recover leakage material from raw material storage.

- **Applicability of PESO:** Not Applicable .

Comments:

2.

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

- The Entire plant will be operated by PLC based SCADA System and semi atomization
- Flame proof light fittings will be installed in the plant.
- Safety measures will be adopted from the design stage.
- The solvent will be handle through receiver tank and recover solvent will be store in receiver tank
- Safety Valve and pressure gauge will be provided on reactor and its jacket.
- Utility like Chilling, cooling, vacuum, steaming and its alternative will be provided to control reaction parameters in a safe manner.
- Free Fall of any flammable material in the vessel will be avoided.
- Static earthing provision will be made at design stage to all solvent handling equipments, reactors, vessels & powder handling equipment.
- Any reaction upsets will be confined to the reaction vessel itself.
- All emergency valves and switches and emergency handling facilities will be easily assessable.
- Further all the vessels will be examined periodically by a recognized competent person under the Gujarat Factory Rules.
- All the vessels and equipment will be earthed appropriately and protected against Static Electricity. Also for draining in drums proper earthing facilities will be provided.
- Materials will be transferred by pumping through pipeline or by vacuum from drums.
- Caution note, safety posters, stickers, periodic training & Updation in safety and emergency preparedness plan will be displayed and conducted.
- As Per GFR 68-U Rules Prescribed Under Schedule 8A. Our total employ will be 15 nos. We will proposed to provide OHC in Admin building with full equipped first aid box Also
- we will appointment Medical Officer on retainer-ship basis and carry out the pre-employment and periodical medical examination as stipulated

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

Total Plot Area:	3502
Area utilized for plant activity:	1363
Area utilized for Hazardous Chemicals Storage:	60
Number of Floors:	GF
Water requirement for firefighting in KLD:	8.838 KL
Water storage tank provided for firefighting in KLD:	150 KL
Details of Hydrant Pumps:	6.0 Inch Diameter fire hydrant line will be provided connected to Jockey Pump having 07 bar pressure with sprinkler system. The jockey pump is placed with the fire water tank having capacity of 150 KL.
Nearest Fire Station :	Jashodhanagar Fire Station @ 1.50 KM
Applicability of Off Site Emergency Plan:	NO

Comments:

2.

H-4	Details of Fire NOC/Certificate:
We will obtained after getting NOC from GPCB	
H-5	Details of Occupational Health Centre (OHC):

-

Number of permanent Employee:	5
Number of Contractual person/Labour:	10
Area provided for OHC:	15 Sq. m
Number of First Aid Boxes:	At least one box containing such items and placed and maintained in accordance with the requirements of Sec. 45 is separately provided.
Nearest General Hospital:	Civil Hospital Ahmedabad @ 9.05 KM
Name of Antidotes to be store in plant:	Injection -morphia, pethidins, atropins, adrenaline, coramine, novocan

-

Comments

1.

- During the SEAC Video conference meeting dated 07.01.2022, Project Proponent (PP) and their technical expert and EIA consultant from M/s. Satva Environ Consultancy remains present and made technical presentation before the Committee.
- Deliberation of the Committee:
  - ✓ GIDC plot allotment letter for proposed project is reviewed.
  - ✓ Product profile with its end use discussed in depth and looking to product namely Benzethonium Chloride as API, Committee insisted for authenticated document regarding Benzethonium Chloride consider as API which document later on not submitted by PP through e-mail.
  - ✓ Site Plan/ layout with fire plan & floor plans and provision of separate entry & exits, 6 m wide peripheral road, distillation area, OHC, tank farm, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, fresh & spent solvent storage areas, hazardous waste storage area, 33% greenbelt within premises etc.
  - ✓ Source of water will be GIDC.
  - ✓ Domestic Waste water will be treated in STP.
  - ✓ Total waste water will be treated in primary ETP and then sent to Common facility of CMEE of M/s. Shree Shaktishool Environment Pvt. Ltd. Committee insisted for clarification regarding status of operation of CMEE facility for which technical expert of PP could not presented its CCA copy. Technical expert of PP later on submitted undertaking stating that if Common facility not obtained CCA then they will submit other operational facility membership certificate or if obtained then they

will start operation after CCA obtained by facility or install in-house spray dryer which is not adequate.

- ✓ Briquette of Agro waste is proposed as fuel in boiler and TFH.
- ✓ Two Stage Scrubber system is proposed for control of process gas emission.
- ✓ PP submitted hazardous waste matrix mentioning source of generation, quantity and Mode of disposal and committed to comply the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
- ✓ Fire hydrant plan, fire load calculation, Water balance diagram, storage of Hazardous chemicals and its safety and Area adequacy was discussed.
- ✓ CER fund allocation, EMP, Green belt area was discussed.

- PP submitted an undertaking ensuring proposed product profile is in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as category B2 projects. Undertaking as proposal of said product are eligible to consider under B2 category as per the notification of MoEF&CC dated 27.03.2020.

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

1. Submit authenticated documentary proof regarding Benzethonium Chloride consider as API and is in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as category B2 projects.
2. Submit concrete proposal of single disposal for either in-house facility or common spray dryer facility in place of multi disposal mentioning.

9.	SIA/GJ/IND2/236216/2021	**M/s. NIDL Surfactants Pvt. Ltd** Plot No. 3, 4 & 5, GGDC Industrial Estate Village: Mithirohar, Tehsil: Gandhidham, Dist.-Kutch, Gujarat – 370240.	Appraisal

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

Project status: **New**

- Project proponent (PP) has submitted online application vide no. SIA/GJ/IND2/236216/2021 on dated 07.12.2021 for obtaining Environmental Clearance.
- Project proponent has submitted Form – 1, Pre-Feasibility Report & Environment Management Plan as per Notification issued by MoEF&CC vide S.O. 1223(E) dated 27th March, 2020 regarding consideration of proposals or activities in respect of Active Pharmaceuticals Ingredients (API) as B2 category.

- This is a new unit and proposes for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below,

Sr. No.	Name of the Products	CAS no.	Quantity MT/Month	*End-use of products
1.	Linear Alkyl Benzene Sulphonic Acid 96 % (LABSA 96%)	27176-87-0	1400.00	Household detergents including laundry powders, laundry liquids, dishwashing liquids, Dishwash Bars & Detergent Bars and other household cleaners. Industrial applications of wetting agent, emulsifier for agricultural herbicides and in polymerization.
	Sub-total of products requiring prior EC		**1400.00**	--
Products which does not require prior EC:				
2.	Linear Alkyl Benzene Sulphonic Acid 90 % (LABSA 90%) (By mixing and blending Process)	27176-87-0	1600.00	Household detergents including laundry powders, laundry liquids, dishwashing liquids, Dishwash Bars & Detergent Bars and other household cleaners. Industrial applications of wetting agent, emulsifier for agricultural herbicides and in polymerization.
		Total:	**1600.00**	--
Note: It is a continuous process plant. No of Manufacturing Plants: 1 no. s				

- PP was called for Video conference meeting for presentation on dated 07.01.2022.
- Since the proposed project is falls in GIDC, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
- During the SEAC Video conference meeting dated 07.01.2022, Project Proponent (PP) and their technical expert and EIA consultant from M/s. Unistar Environment & Research Labs Pvt. Ltd remains present and made technical presentation before the Committee.
- During meeting, Committee noted that PP submitted proposal of Linear Alkyl Benzene Sulphonic Acid 96 % (LABSA 96%) as B2 category project. Hence Committee asked for clarification regarding it. Technical expert of PP submitted other State EC order regarding it for which Committee disagree with proposal and asked for submit authenticated document from MoEF & CC for proposed products consider as B2 category project with technical details of proposed products.
- Also looking to plot allotment letter which is in name of other unit, Committee asked for submission of plot allotment letter in name of proposed project and also clarified for proposal is a Greenfield project or existing unit.

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

1. Authenticated document from MoEF & CC for proposed product consider as B2 category project

with technical details of proposed product like chemical reaction and raw material for it.

2. Revised plot allotment letter from GIDC with mentioning name of proposed project and also clarified for proposal is a Greenfield project or existing unit.

10.	SIA/GJ/IND2/236834/2021	**M/s. Intas Pharmaceuticals Ltd** Survey No. 66, 68, 69 & 70 Village: Naldhari, Survey No. 205, 206, 207, 864, 870, 871, 872, 873, 874, 875 & 876, Village: Valia & Plot No. 7/1 & 7/2, GIDC Valia, Siludi-Valia Road, Tal.: Valia, Dist.: Bharuch	Appraisal

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

Project status: **Expansion**

- Project proponent (PP) has submitted online application vide no. SIA/GJ/IND2/236834/2021 on dated 07.12.2021 for obtaining Environmental Clearance.
- Project proponent has submitted Form – 1, Pre-Feasibility Report & Environment Management Plan as per Notification issued by MoEF& CC vide S.O. 1223(E) dated 27th March, 2020 regarding consideration of proposals or activities in respect of Active Pharmaceuticals Ingredients (API) as B2 category.
- This is an existing unit and proposes for expansion in manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below,

Sr. No.	**Name of Products**	**Quantity MT/Month**			
		Existing as per CC&A	**As per last Granted EC**	**Proposed Additional**	**Total after Proposed Expansion**
A.	API & Intermediate	240.10	399.00	27.00	426.00
B.	R&D Product (Pilot Trial & Scale up of Product)	0.15	1.00	0.00	1.00

Sr.No.	**Name of Products**	**CAS No.**	**Quantity MT/Month**				**End Use**
			Existing as per CC&A	**As per last Granted EC**	**Proposed Additional**	**Total after Proposed Expansion**	
1.	Hexa methyl di Silazane	999-97-3	--	--	--	--	Drug Intermediate used in manu. of API
2.	Fluroquinolonic acid	86393-33-1	--	--	--	--	Drug Intermediate used in manu. of API

3.	Crotonic Acid (OR)	107-93-7	--	--	--	-- --	Drug Intermediate used in manu. of API
	1:3 Butandiol	107-88-0		--	--		Drug Intermediate used in manu. of API
4.	R(+/-) 3 Carboxymethyl-5-methyl hexanoic acid	181289-15-6	4.00	--	--	--	Drug Intermediate used in manu. of API
5.	R-(-) 3 Carboxymethyl-5-methyl hexanoic acid	181289-33-8	4.00	--	--	--	Drug Intermediate used in manu. of API
6.	R(+) Methyl Benzyl Amine	3886-69-9	0.50	--	--	--	Drug Intermediate used in manu. of API
7.	Chloroform	67-66-3	100.00	--	--	--	Drug Intermediate used in manu. of API
8.	5-(4-(4-(5-Cyano-1H-indol-3-yl)-butyl)-piperazin-1-yl) benzofuran-2-carboxamide	165321-12-8	0.30	0.05	--	0.05	Drug Intermediate used in manu. of Vilazodone HCl API used for dipressive disorder
9.	Lacosamide Stage-III	175481-36-4	0.75	--	--	--	Drug Intermediate used in manu. of API
	1-o-Acetyl-2,3,5-trio-o-Benzoyl-β-D-Ribosuranose AND/OR	6974-32-9					
	1-[4-(2-chloroethoxy)phenyl] 2-phenyl-butanol	--					
10.	Sodium Methoxide Solution (100%)	124-41-4	75.00	345.00	--	345.00	Drug Intermediate used in Various applications in pharmaceutical, dyes, nylon, rubber & fragrance industries.

11.	1,5-bis[di isopropyl]-(+)-(3'R,4'S)-1'-benzoyl-4'-phenyl-2'-azetidinone –3'-hydroxyl -silyl] pentane/ (3R,4S)-1-benzoyl-4-Phenyl-3-{(triethylsilyl)oxy} azetindin-2-one/NBZ-azetidinone OR	146924-93-8	0.08	0.05	--	0.05	Drug Intermediate Used in manu. of Paclitaxel API used for cancer treatement
	1,5-bis[di isopropyl-(+)-(3'R,4'S)-1'-tert butoxycarbonyl-4'-phenyl-2' azetidinone – 3'-hydroxyl -silyl] pentane	146924-93-8		0.05	--	0.05	Drug Intermediate Used in manu. of Cabazitaxel API used for cancer treatement
12.	Thymoquinone[Kalonji Active Ingredient	490-91-5	0.28	--	--	-	General API used as antiinframation
13.	Dabigatran Etexilate Mesylate	872728-81-9	--	0.80	--	0.80	General API used as Anticoagulant Medication
14.	Lurasidone HCl	367514-88-3	--	0.10	--	0.10	General API used as Antisychotic
15.	Lacosamide	175481-36-4	--	0.50	--	0.50	General API used as Antiepileptic
16.	Bendamustine HCl	3543-75-7	--	0.01	--	0.01	General API Used in combination with other antineoplastic agents
17.	Trazodone HCl	25332-39-2	--	4.00	--	4.00	General API used as Anti-depressant
18.	Gemcitabine HCl	12211-03-9	--	0.20	--	0.20	Oncology API used as Chemotherapy medication
19.	Capecitabine	154361-50-9	--	6.00	--	6.00	Oncology API used as Chemotherapy medication

20.	Erlotinib HCl	183319-69-9	--	0.10	--	0.10	Oncology API used as Medication for several other types of cancer
21.	Imatinib Mesylate Alpha	220127-57-1	--	0.50	--	0.50	Oncology API used as Medication for multiple cancer
22.	Nilotinib	641571-10-0	--	0.15	--	0.15	Oncology API used as Medication for chronic myelogenous leukemia (CML)
23.	Dasatinib	302962-49-8	--	0.05	--	0.05	Oncology API used as Medication for multiple cancer
24.	Pazopanib HCl	635702-64-6	--	0.06	--	0.06	Oncology API used as Medication for carcinoma
25.	Sorafenib	475207-59-1	--	0.10	--	0.10	Oncology API used as Medication for kidney cancer
26.	2-acetamido-2-phenethylpropane-1,3-diyldiacetate	--	--	0.05	--	0.05	Drug Intermediate Used in manu. of Fingolimod HCl API
27.	Mycophenolate mofetil / sodium	128794-94-5	--	15.00	--	15.00	API used in medication of Disease-modifying antirheumatic drugs
28.	Tacrolimus	104987-11-3	--	0.04	--	0.04	API used in medication of eczema
29.	Pregabalin	148553-50-8	--	10.00	--	10.00	API used in medication of pain
30.	Dapagliflazone	461432-26-8	--	2.00	--	2.00	API used in medication of diabetes
31.	5-Fluorouracil	51-21-8	--	2.00	--	2.00	API used in medication of cancer

32.	Thymoquinone	490-91-5	--	1.00	--	1.00	API used in medication of cancer & diabetes
33.	Quinine Sulphate	549-56-4	2.20	2.00	--	2.00	API used in medication of malaria
34.	Levothyroxine Sodium	51-48-9	--	2.00	--	2.00	API used in medication of hypothyroidism
35.	Pilot trial & Scale-up of product	--	0.15	1.00	--	1.00	--
36.	Telmisartan	144701-48-4	--	3.00	--	3.00	API used in medication of high BP
37.	Aspirin	50-78-2	--	4.19	--	4.19	API used in medication of fever & pain
38.	Progesterone	57-83-0	--	--	8.50	8.50	API used in Hormone therapy in female
39.	Daunomycin / Daunorubicine Hydrochloride	20830-81-3	--	--	0.25	0.25	API used in Anti-cancer
40.	Doxorubicine Hydrochloride	23214-92-8	--	--			API used in Anti-cancer
41.	Epirubicin Hydrochloride	56390-09-1	--	--	0.01	0.01	API used in Anti-cancer
42.	Allopurinol	315-30-0	--	--	7.88	7.88	API used to treat gout and kidney stones.
43.	Rosuvastatin	287714-41-4	--	--	0.15	0.15	API used in Anti-cholesterol
44.	Bupropion	34841-39-9	--	--	4.17	4.17	API used in Anti-depression
45.	Buspirone	36505-84-7	--	--	0.25	0.25	API used in Anti-depression
46.	Montelukast	158966-92-8	--	--	0.25	0.25	API used in Anti allergic
47.	Escitalopram	128196-01-0	--	--	1.34	1.34	API used inAnti depression
48.	Rivaroxaban	366789-02-8	--	--	0.20	0.20	API used intreat deep vein thrombosis
49.	Metoprolol Succinate	98418-47-4	--	--	4.00	4.00	API used in Cardio vascular
		Total	**240.25**	**400.00**	**27.00**	**427.00**	

Note- PP requested State Level Environmental Impact Assessment Authority & committee, Gujarat to issue us permission to manufacture product u/head of API & Intermediates as per O. M. vide file no. 22-33/2019-IA.III dated 28th January 2021 and for that PP have submitted undertaking.

 # Brief Note of Product Profile:

1. **No of Manufacturing Plants: 1 no.s**
2. **Brief Note regarding number of Products to be manufactured considering plant capacity:**
    - **Products will be manufactured as per demand on campaign base.**

ENDUSE OF PRODUCTS

Sr. No.	Name of the Product	CAS No. (Product)	Type/ Category of Product (API/ Intermediate)	In case of Intermediate stage of API			Said API is used for/End Use of said API
				Stage i.e. n-1, n-2, etc.	Name of API in which Intermediate Used/ End use of said Intermediate	CAS no. (API)	
1	Hexa methyl di Silazane	999-97-3	Intermediate	--	Various antibiotic	--	Various antibiotic
2	Fluroquinolonic acid	86393-33-1	Intermediate	--	Ciprofloxacine	85721-33-1	Used in treat or prevent certain infections caused by bacteria such as pneumonia
3	Crotonic Acid (OR)	107-93-7	Intermediate	--	Fine chemicals	--	Drug Intermediate used in Fine chemicals
	1:3 Butandiol	107-88-0	Intermediate	--	Drug Intermediate used in manu. of API, cosmetic product	--	Drug Intermediate used in manu. of API, cosmetic product,
4	R(+/-) 3 Carboxymethyl-5-methyl hexanoic acid	181289-15-6	Intermediate	n-1	Pregabaline	148553-50-8	API used in medication of pain
5	R-(-) 3 Carboxymethyl-5-methyl hexanoic acid	181289-33-8	Intermediate	n-1	Pregabaline	148553-50-8	API used in medication of pain
6	R(+) Methyl Benzyl Amine	3886-69-9	Intermediate	n-1	Pregabaline	148553-50-8	API used in medication of pain
7	Chloroform	67-66-3	Intermediate	n-1	Pregabaline(General chemical)	148553-50-8	API used in medication of pain
8	5-(4-(4-(5-Cyano-1H-indol-3-yl)-butyl)-piperazin-1-yl) benzofuran-2-carboxamide	165321-12-8	Intermediate	n-2	Vilazodone HCl	163521-08-2	Vilazodone HCl API used for depressive disorder

9	Lacosamide Stage-III	175481-36-4	Intermediate	--	Lacosamide	175481-36-4	General API used as Antiepileptic
	1-o-Acetyl-2,3,5-trio-o-Benzoyl-β-D-Ribosuranose AND/OR	6974-32-9					
	1-[4-(2-chloroethoxy)phenyl] 2-phenyl-butanol	--					
10	Sodium Methoxide Solution (100%)	124-41-4	Intermediate	--	Diclofenac Sodium Analgesic	15307-86-5	Dicloflanic
11	1,5-bis[di isopropyl-(+)-(3'R,4'S)-1'-benzoyl-4'-phenyl-2'-azetidinone –3'-hydroxyl -silyl] pentane	146924-93-8	Intermediate	--	Paclitaxel	33069-62-4	Paclitaxel API used for cancer treatment
	1,5-bis[di isopropyl-(+)-(3'R,4'S)-1'-tert butoxycarbonyl-4'-phenyl-2' azetidinone – 3'-hydroxyl -silyl] pentane	146924-93-8	Intermediate	--	Cabazitaxel	183133-96-2	Cabazitaxel API used for cancer treatment
12	Thymoquinone[Kalonji Active Ingredient	490-91-5	API	--	--	--	General API used as antiinframation
13	Dabigatran Etexilate Mesylate	872728-81-9	API	--	--	--	General API used as Anticoagulant Medication
14	Lurasidone HCl	367514-88-3	API	--	--	--	General API used as Antisychotic
15	Lacosamide	175481-36-4	API	--	--	--	General API used as Antiepileptic
16	Bendamustine HCl	3543-75-7	API	--	--	--	General API Used in combination with other antineoplastic agents
17	Trazodone HCl	25332-39-2	API	--	--	--	General API used as Anti-depressant
18	Gemcitabine HCl	12211-03-9	API	--	--	--	Oncology API used as Chemotherapy medication
19	Capecitabine	154361-50-9	API	--	--	--	Oncology API used as Chemotherapy

							medication
20	Erlotinib HCl	183319-69-9	API	--	--	--	Oncology API used as Medication for several other types of cancer
21	Imatinib Mesylate Alpha	220127-57-1	API	--	--	--	Oncology API used as Medication for multiple cancer
22	Nilotinib	641571-10-0	API	--	--	--	Oncology API used as Medication for chronic myelogenous leukemia (CML)
23	Dasatinib	302962-49-8	API	--	--	--	Oncology API used as Medication for multiple cancer
24	Pazopanib HCl	635702-64-6	API	--	--	--	Oncology API used as Medication for carcinoma
25	Sorafenib	475207-59-1	API	--	--	--	Oncology API used as Medication for kidney cancer
26	2-acetamido-2-phenethylpropane-1,3-diyldiacetate	--	Intermediate	--	Fingolimod HCl	162359-56-0	Drug Intermediate Used in manu. of Fingolimod HCl API
27	Mycophenolate mofetil / sodium	128794-94-5	API	--	--	--	API used in medication of Disease-modifying antirheumatic drugs
28	Tacrolimus	104987-11-3	API	--	--	--	API used in medication of eczema
29	Pregabalin	148553-50-8	API	--	--	--	API used in medication of pain
30	Dapagliflazone	461432-26-8	API	--	--	--	API used in medication of diabetes
31	5-Fluorouracil	51-21-8	API	--	--	--	API used in

							medication of cancer
32	Thymoquinone	490-91-5	API	--	--	--	API used in medication of cancer & diabetes
33	Quinine Sulphate	549-56-4	API	--	--	--	API used in medication of malaria
34	Levothyroxine Sodium	51-48-9	API	--	--	--	API used in medication of hypothyroidism
35	Pilot trial & Scale-up of product	--	--	--	--	--	--
36	Telmisartan	144701-48-4	API	--	--	--	API used in medication of high BP
37	Aspirin	50-78-2	API	--	--	--	API used in medication of fever & pain
38	Progesterone	57-83-0	API	--	--	--	API used in Hormone therapy in female
39	Daunomycin / Daunorubicine Hydrochloride	20830-81-3	API	--	--	--	API used in Anti-cancer
40	Doxorubicine Hydrochloride	23214-92-8	API	--	--	--	API used in Anti-cancer
41	Epirubicin Hydrochloride	56390-09-1	API	--	--	--	API used in Anti-cancer
42	Allopurinol	315-30-0	API	--	--	--	API used to treat gout and kidney stones.
43	Rosuvastatin	287714-41-4	API	--	--	--	API used in Anti-cholesterol
44	Bupropion	34841-39-9	API	--	--	--	API used in Anti-depression
45	Buspirone	36505-84-7	API	--	--	--	API used in Anti-depression
46	Montelukast	158966-92-8	API	--	--	--	API used in Anti allergic
47	Escitalopram	128196-01-0	API	--	--	--	API used inAnti depression
48	Rivaroxaban	366789-02-8	API	--	--	--	API used intreat deep vein thrombosis

49	Metoprolol Succinate	98418-47-4	API	--	--	--	API used in Cardio vascular

- The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020.
- PP was called for Video conference meeting for presentation on dated 07.01.2022.
- Since the proposed project is B2 category project, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
- PP submitted salient features of water, air and Hazardous waste management are as under,

Sr. no. | **Particulars** | **Details**

A-1 Total **cost of Proposed** Project (Rs. in Crores):

Existing	**Granted in EC**	**Proposed investment**	**Total investment**
29.2595 Crores	322.6946 Crores	54.3616 Crores	377.05 Crores

Break-up of proposed project Cost:

Purpose	**Existing (Rs. In Lacs)**	**Granted in EC (Rs. In Lacs)**	**Proposed investment (Rs. In Lacs)**	**Total investment (Rs. In Lacs)**
Land & Site Development	49.83	915.03	900.00	1815.03
Building	589.26	8,589.26	1288.39	9877.65
Environmental Protection Measure	57.17	1,670.00	83.50	1753.50
Plant & Machineries	2,229.69	21,095.17	3164.28	24259.45
Total	**2,925.95**	**32,269.46**	**5436.16**	**37705.62**

A-2 **Details of Environmental Management Plan (EMP)** As below:

Sr. No	**Unit**	**Detail**	**Capital Cost (Rs. In Crores)**	**Operating Cost (Rs. In Crores)**	**Maintenance Cost (Rs. In Crores)**	**Total Recurring Cost (Rs. In Crores)**
1	Waste Water	Capital cost of STP, ETP, RO & Evaporator	13.99	7.6814	0.8535	8.5349
2	Air	Capital Cost of Stack & APCM installation	1.1	0.0826	0.0044	0.087
3	Hazardous Management	Membership Charges	0.25	0.6048	0.0672	0.672
4	Fire & Safety	Safety instruments & PPE	0.1	0.0665	0.0035	0.07
5	Regulatory Compliance	ISO, Water audit, safety	0.3	0.055	-	0.055

		audit, Env. Audit, Env. Consultant fee				
6	Green Belt Development	GB development in site, local forest & nearest Village	0.25	--	0.1	0.1
7	Occupational Health	Antidotes, medical facility @ site	0.25	0.01425	0.00075	0.015
8	Rainwater Harvesting	Installation Cost	0.5	0.005	-	0.005
9	Noise	Enclosure to sound generating machine & Safety PPE	0.8	0.004	-	0.004
Total			**17.54**	**8.51355**	**1.02935**	**9.5429**

Summary

Cost of Project in Crores per Annum:	377.0562
EMP Capital Cost in Crores per Annum and Percentage:	17.54Crores &4%
EMP Recurring Cost in Crores per Annum and Percentage:	9.5429Crores &2%

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.

A-3 | **Details of CER** -

PP shall carry out CER activities as below:

% as per the OM	Rs. in Crores
1%	0.543615

Brief note on proposed activities:

Type of CER Activity	Activity Description	Location	Total Amt.(Rs. lakh)
Smokeless Stoves	Energy Saving cook stoves	Valia & surrounding other villages area.	10.00
Solar Power generation system	Provide the solar base power generation system/street light to various school & Panchayat office.	Valia & surrounding other villages area.	30.00
Rain Water Harvesting	Construction of recharge wells/ roof-top harvesting	Valia & surrounding other villages area.	14.3615
Total			**54.3615**

B **Land / Plot ownership details:**

B-1 **Plot area**

Existing	Proposed	Total
133166 Sq. m.	112412 Sq. m.	245578 Sq. m.

-

B-2

Area adequacy

- The existing built-up area of the unit is 16070 m^2, as per granted EC additional built up area of unit is 4200 m^2 area. Proposed additional built-up area of the unit is 20,235 m^2. Hence, total built up area will be 40,505 m^2 after the proposed project. The greenbelt area will be 90,150 m^2.

Sr. No.	Particular	Existing (As Submitted in EC)	Proposed Additional	Total after Proposed Expansion
1	Process Plant	10,320.00	8,154.29	18,474.29
2	RM & Prod. Storage	1,910.00	322.00	2,232.00
3	Utility	1,100.00	7,293.76	8,393.76
4	Storage (Haz. Chem)	1,545.00	2,317.50	3,862.50
5	HW storage Area	530.00	-130.00	400.00
6	ETP	880.00	1,055.00	1,935.00
7	Green Belt	43,945.00	46,205.00	90,150.00
8	Roads	12,765.00	4,685.40	17,450.40
9	Parking Area	3,880.00	2,178.05	6,058.05
10	Admn. Building	1,300.00	275.00	1,575.00
11	Other area	2,685.00	947.74	3,632.74
12	Undeveloped Area	52,306.00	39,108.26	91,414.26
	Total	**133,166.00**	**112,412.00**	**245,578.00**

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 (As Submitted in EC)	Proposed (Sq. meter)	Total (Sq. meter)
Area in Sq. meter	43945	46205	90150
% of total area	33	41.10	36.71

Comments:

The condition shall be given that -

The PP shall develop green belt (90150 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	As per granted in EC	Proposed	Total
168	815	182	997

D **WATER**

D-1 **Source of Water Supply**

- GIDC Water Supply

Comments:

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

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

Particular	**Type of Water**	**Water Requirement (KLD)**			
		Existing as per CC&A	**As per Granted EC**	**Proposed Additional**	**Total after Proposed Expansion**
(A) Domestic	F	6.00	65.00	--	65.00
	R	--	--	**--**	**--**
(B) Gardening	F	--	3.00	--	3.00
	R	29.74	57.00	**--**	57.00
Process & APCM	F	25.70	318.00	41.00	359
	R	--	--	--	--
Washing	F	2.20	104.0	-41.00	63.00
	R	--	--	41.00	41.00
Boiler	F	6.98	0.00	--	--
	R	--	141.00	**--**	141.00
Cooling	F	4.02	0.00	--	--
	R	--	288.00	**--**	288.00
Others (Reject of RO for Pretreatment (RO-1)	F	--	10.00	--	10.00
	R	--	--	**--**	**--**
Industrial Total	**F**	**38.90**	**432.00**	**41.00**	**432.00**
	R	**--**	**429.00**	**--**	**470.00**
Grand Total (A+B+C)	**F**	**44.90**	**500.00**	**--**	**500.00**
	R	**29.74**	**486.00**	**41.00**	**527.00**

Comments:

1. 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	Wastewater Generation (KLD)			
	Existing as per CC&A	As per Granted EC	Proposed Additional	Total after Proposed Expansion
(A)Domestic	6.00	57.00	--	57.00
Process & APCM	19.14	318.00	54.00	372.00
Cooling blow down	2.50	44.00	--	44
Boiler blow down				
Others (Reject of RO for Pretreatment (RO-1))				
Washing	2.10	95.00	--	95.00
Total Industrial wastewater	23.74	457.00	54.00	511.00
Total wastewater	29.74	514.00	54.00	568.00

Comments:

1. 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 after proposed expansion)

Domestic:	• **Existing as per CC&A:** 6 KLD Treated in ETP, treated wastewater is re-used for greenbelt development. • **As per Granted EC:** 65 KLD Treated in STP and treated wastewater will be re-used for greenbelt development. • **Total after Proposed Expansion:** 65 KLD Treated in STP and treated wastewater will be re-used for greenbelt development.

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

Comments:

1. Domestic wastewater generation shall not exceed 65 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
2. Unit shall provide STP with adequate capacity.

D-5 **Break-up of waste water disposal & facility (For Industrialafter proposed expansion)**

Industrial:	• **Existing as per CC&A:** 29.74 KLD Treated in ETP, treated wastewater is re-used for greenbelt development.

	• **As per Granted EC:** 437 KLD treated in ETP followed by 432 KLD treated in RO & 87 KLD Treated in MEE, permeate 345 KLD from RO & Condensate 84 KLD from MEE will be reused in cooling tower make-up. • **Total after Proposed Expansion: :** 480 KLD treated in ETP after treatment 475 KLD treated in RO after treatment 95 KLD Treated in MEE, permeate 380 KLD from RO & Condensate 90 KLD from MEE will be reused in industrial activity.

Comments:

1. Total Industrial effluent shall be segregated in high COD and low COD stream as follows

   - **High COD and TDS stream(92 KLD)**

     - 91 KLD high COD stream from process shall be passed through solvent stripper and then78 KLD treated effluent from solvent stripper and 1 KLD from scrubber shall be evaporated in in-house MEE -1while 62 KLD, MEE condensate shall be further treated in Low COD stream ETP units.

   - **Low COD and TDS stream(279 + 95 +44 KLD)**

     - 279 KLD low COD stream from process,95 KLD from washing and 44 KLD from utility along with 62 KLD, MEE condensate shall be treated in ETP followed by RO plant and then 380 KLD, RO permeate shall be reused back in process while 95 KLD, RO reject shall be evaporated in in-house MEE-2.

     - 90 KLD, MEE-2 condensate shall be reused back in process within plant.

2. Project proponent (PP) shall maintain complete ZLD all the time and there shall be no drainage connection within premises and no waste water discharge outside premises by any means.

3. 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.

4. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during any shut down of in-house MEE.

5. Unit shall provide ETP, RO and MEE with adequate capacity.

E	**AIR**

E-1	Power (Electricity) requirement : 7525 KVA
E-2	**Flue gas emission details**

- **Existing & Proposed**

Sr. no.	Source of emission With Capacity	Stack Details (meter)	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
Existing as per CC&A						
1.	Boiler - 3 TPH - Standby	H: 31 D: 0.6	FO/LDO	40 L/hr	PM, SO2, NOx	Adequate stack height
2.	Boiler - 4 TPH		Agrowaste/ Briquettes	6 T/day	PM, SO2, NOx	Multi Cyclone Separator followed by Bag filter
3.	Thermic Fluid Heater -1 Lac Kcal/Hr	H: 11 D: 0.3	FO/LDO	20 L/hr	PM, SO2, NOx	Adequate stack height
4.	DG Set - 500 kVA	H: 9 D: 0.2	Diesel	80 L/hr	PM, SO2, NOx	Adequate stack height
5.	DG Set - 125 kVA					
As per Granted EC						
1.	Boiler - 3 TPH –(not in use)	H: 31 D: 0.6	FO/LDO	40 L/hr	PM, SO2, NOx	Adequate stack height
2.	Boiler - 4 TPH	H: 12 D: 0.3	Agrowaste/ Briquettes	6 T/day	PM, SO2, NOx	Multi Cyclone Separator followed by Bag filter
3	Boiler - 6 TPH	H: 31 D: 1	Agrowaste Briquettes	12 T/day	PM, SO2, NOx	Multi Cyclone Separator followed by Bag filter
4	Boiler - 12 TPH x 2 Nos.	H: 31 D: 1 (each)	Agrowaste/ Briquettes	34.8 T/day (each)	PM, SO2, NOx	Multi Cyclone Separator followed by Bag filter
5.	Thermic Fluid Heater -1 Lac Kcal/Hr	H: 11 D: 0.3	FO/LDO	0.48 KLD	PM, SO2, NOx	Adequate stack height
6.	DG Set - 125 kVA	H: 30 D: 1 (each)	Diesel	20 L/hr	PM, SO2, NOx	Adequate stack height
7.	DG Set - 500 kVA X3 nos.			180 L/hr (each)		
8.	DG Set –2000 kVA x 3 Nos.			320 L/hr (each)		
Proposed Additional						
There will be no fuel consuming utility installation for proposed project.						
Total After Proposed Expansion						
1.	Boiler - 3 TPH –(not in use)	H: 31 D: 0.6	FO/LDO	40 L/hr	PM, SO2, NOx	Adequate stack height
2.	Boiler - 4 TPH		Agrowaste/ Briquettes	6 T/day	PM, SO2, NOx	Multi Cyclone Separator followed by

						Bag filter
3	Boiler - 6 TPH	H: 31 D: 1	Agrowaste Briquettes	12 T/day	PM, SO2, NOx	Multi Cyclone Separator followed by Bag filter
4	Boiler - 12 TPH x 2 Nos.	H: 31 D: 1 (each)	Agrowaste/ Briquettes	34.8T/day (each)	PM, SO2, NOx	Multi Cyclone Separator followed by Bag filter
5.	Thermic Fluid Heater -1 Lac Kcal/Hr	H: 11 D: 0.3	FO/LDO	0.48 KLD	PM, SO2, NOx	Adequate stack height
6.	DG Set - 125 kVA	H: 30 D: 1 (each)	Diesel	20 L/hr	PM, SO2, NOx	Adequate stack height
7.	DG Set - 500 kVA X3 nos.			180 L/hr (each)		
8.	DG Set –2000 kVA x 3 Nos.			320 L/hr (each)		

E-3 Process gas

- Existing & Proposed

Sr. No.	Specific Source of emission (Name of the Product & Process)	Type of emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
As per Existing CC&A				
1.	There is no process gas generation from the manufacturing of products given in existing CC&A.			
After Granted EC				
1.	Product No. – 22 & 35	HCl	H: 10 m D: 0.3 m	Two stage scrubber (Alkali-Water)
2.	Product No. -16, 30, 33 & 35	SO_2	H: 10 m D: 0.3 m	Two stage scrubber (Alkali-Water)
3.	Product No. -14, 19, 23 & 35	NH_3	H: 10 m D: 0.3 m	Two stage scrubber (Acidic-Water)
4.	Product No. - 32 & 35	NO_2	H: 10 m D: 0.3 m	Two stage scrubber (Alkali-Water)
Proposed Additional				
1.	There is no process gas generation from the manufacturing of proposed products.			
After Proposed Expansion Project				
1.	Product No. – 22 & 35	HCl	H: 10 m D: 0.3 m	Two stage scrubber (Alkali-Water)
2.	Product No. -16, 30, 33 & 35	SO_2	H: 10 m D: 0.3 m	Two stage scrubber (Alkali-Water)
3.	Product No. -14, 19, 23 & 35	NH_3	H: 10 m D: 0.3 m	Two stage scrubber (Acidic-Water)

4.	Product No. - 32 & 35	NO_2	H: 10 m D: 0.3 m	Two stage scrubber (Alkali-Water)

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

Sr. No	Source	Probable pollutant parameter	Control measures
1.	Manufacturing activities during charging into reactors	VOC and PM	• Liquid raw materials are charged by pumping & closed loops. • Dosing is done by metering system to avoid fugitive emissions. • Dedicated measuring tanks are provided to each reactor. • Usage of closed handling system for odorous chemicals /solvents as far as possible.
2.	Emission from bulk storage tanks during storage, loading, unloading	VOC	• Bulk storage of odorous chemicals / solvents is adopted and usage of drums/Carboys for such materials is avoided as far as possible. • Solvent storage tanks are equipped with vent condensers to control loss of VOCs. • Breather valves, PSVs, Rupture disc, Vapor recovery system is installed for process/storage tank vents.
3.	Hazardous chemical storage area	VOC & PM	• Dedicated storage area is provided. • Adequate ventilation systems is provided. • All the containers is kept tightly closed. • Trolley/Forklift is used for transfer of drums and Containers. • Transfers of odorous waste are carried out preferably during day time. Transfers during odd hours are avoided.
4.	Chemical vapor from wet cake in filtration and drying area	PM	• Covered transfer systems are adopted, workers are provided with PPE. • Fume extraction systems is provided, wherever required.
5.	Pump and compressor Emissions	VOC	• Mechanical seals are provided in pumps and agitators • Standby arrangement for critical equipment and parts is ensured. • Drip trays are placed for each pump to collect leakages and spillages.
6.	Pressure relief valve emission from pipelines	VOC	• For highly pressurized lines, vent pipes of PRVs are connected in case of toxic gases.
7.	Valves, Flanges, plugs and instrument connections	VOC	• Welded pipes are used wherever feasible. • Suitable gasket materials are used. • Suitable glad packing are used in valves. • Periodic inspection and maintenance of pipes and pipe fittings are carried out.
8.	Release from	VOC	• Closed loop system is used.

	sampling lines		

Comments for E2, E3 & E4:

1. 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.
2. 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	**Hazardous waste**
F-1	**Hazardous waste management matrix**

Sr. no.	**Type/ Name of Hazardous waste**	**Hazardous Waste (T/annum)**				**Management of HW**
		Existing as per CC&A	**As per Granted EC**	**Proposed Additional**	**Total after Proposed Expansion**	
1	Used or Spent Oil	0.04	12.60	2.40	15.00	Reuse in plant & machinery as lubricant or sell it to authorized re-finers / recyclers
2	Oil Filter	--	0.40	0.00	0.40	Incineration at common Incineration facility (CHWIF) of M/s BEIL / M/s SEPPL.
3	Distillation Residue	6.00	190.00	86.00	276.00	Disposal by co-processing at Cement Manufacturer **OR** Incineration at common Incineration facility (CHWIF) of M/s BEIL / M/s SEPPL
4	Solid waste from surface preparation from painting	0	2.50	0.00	2.50	Collection, Storage, Transportation, Disposal at common TSDF facility of M/s BEIL / M/s DIPL, Kutch.
5	Inorganic Process Waste (Sodium Sulphate / Sodium Bicabonate)	--	312.00	68.00	380.00	Disposal at common TSDF facility of M/s BEIL / M/s DIPL, Kutch.
6	Process	--	2565.0	515.00	3988.32	

	Waste (Dead Biomass					
7	Spent Hyflow	--	5.00	15.00	20.00	Disposal at common TSDF facility of M/s BEIL / M/s DIPL, Kutch.
8	Spent Carbon	3.00	45.00	5.00	50.00	Disposal by Incineration at common Incineration facility (CHWIF) of M/s BEIL / M/s SEPPL
9	Date Expired & Off Specification product	--	5.50	1.50	7.00	Disposal by Incineration at common Incineration facility (CHWIF) of M/s BEIL / M/s SEPPL
10	Spent / Mix Solvent	900	22970	365.00	23335.00	Sale to GPCB authorized end-users having valid CC&A & permission u/Rule 9 OR Disposal by co-processing at Cement Industries OR Disposal at common incineration facility (CHWIF) of M/s BEIL / M/s SEPPL
11	Discarded Containers/ Bags / liners	12 (48000 Nos.)	22 (88000 Nos.)	0.5 (2000)	22.5 (90000)	Disposal by send to authorized decontamination facility / recycler OR reuse OR send back to supplier.
12	Contaminated cotton waste	--	10.00	0.00	10.00	Disposal at common incineration facility (CHWIF) of M/s BEIL / M/s SEPPL.
13	Used PPEs	--	30.00	2.00	32.00	Decontamination and Disposal by send to authorized scrap vendor / recycler.
14	ETP Sludge	6.00	250.00	25.00	275.00	Disposal at common TSDF facility of M/s BEIL/ M/s DIPL, Kutch.
15	MEE Salt	--	1765.00	235.00	2000.00	
16	Process Waste (Spent Filter & Filter Materials)	--	1.00	0.00	1.00	Disposal by Incineration at common Incineration facility (CHWIF) of M/s BEIL / M/s SEPPL
17	Incinerable Aqueous Waste (stripper Distillate)	--	2880.0	150.00	3030.00	Disposal by co-processing at Cement manufactur. **OR** Incineration at comon Incineration facility (CHWIF) of M/s BEIL/ M/s SEPPL
18	Bleed Liquor	0.00	320.00	30.00	350.00	Treatment within industrial unit
19	Spent Catalyst	0.00	60.00	0.00	60.00	Sent back to party for reactivation

Comments:

1. 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.
2. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.

F-2	Non- Hazardous waste management matrix

3. Fly Ash generation will be 300 MTPA
4. STP sludge generation will be 62MTPA

Comments:

1. 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.
2. STP sludge shall be collected and used as manure in gardening activity.

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

Solvent recovery will be done through series of condensers having cooling water & chilled water. Solvent will be stored properly with jacketed receiver having chilled water and transferred by pumps. Atmospheric loses will be kept less than 5%. Recovered solvents will be reused back in the process within premises. The Spent/ mix solvent generated during the manufacturing process will be sent for offsite distillation to authorize recyclers.

Solvent Recovery details for proposed additional product as below:

Product No	Name of product	Name of solvent	Input (kg/kg)	Recovery (kg/kg)	Recovery (%)	Solvent with waste water/ Residue etc (%)	Spent Solvent for Sell (%)	Atmospheric Losses (%)
38	Progesterone	Methanol	137	130.15	95.00	0.62	-	4.38
		Ethyl Acetate	41	38.88	94.83	1.51	-	3.66
		Hexane	1.52	1.45	95.39	1.32	-	3.29
		Dichloromethane	7.61	7.23	95.01	4.34	-	0.66
		Methylbenzene	14.31	13.59	94.97	4.68	-	0.35
		Pyridine	2.44	2.43	99.59	-	-	0.41
		N-heptane	9.44	8.97	95.02	4.87	-	0.11
39	Daunomycin / Daunorubicine Hydrochloride	MDC	3369.57	3152.17	93.55	0.89	4	1.55

40	Doxorubicine Hydrochloride	Chloroform	266.67	250.00	93.75	0.38	4	2.13
43	Rosuvastatin	Acetone	7.5	7.2	96.00	3.20	-	0.80
		Ethyl acetate	10	9.8	98.00	1.20	-	0.80
		Ethanol	8	7.68	96.00	3.25	-	0.80
44	Bupropion HCl	Dichloromethane	2.28	2.2	96.49	2.63	-	0.88
45	Buspirone	Dimethyl Formamide	0.83	0.78	93.98	3.61	-	2.41
		Isopropyl alcohol	0.4	0.37	92.50	5.00	-	2.50
46	Montelukast	Methanol	3.59	3.41	94.99	3.90	-	1.11
		Toluene	52.69	50.06	95.01	3.99	-	1.01
		THF	25.47	23.32	91.56	4.00	3.46	0.98
		Acetonitrile	10.78	10.24	94.99	3.99	-	1.02
		t-Butanol	1.8	1.71	95.00	3.89	-	1.11
		IPE	2.99	2.84	94.98	4.01	-	1.00
		Ethyl Acetate	26.95	25.84	95.88	4.01	-	0.11
		n-Hexane	38.32	36.41	95.02	3.99	0.63	0.37
47	Escitalopram	MDC	25.2	23.8	94.44	0.08	6	0.08
		IPA	8.05	7.64	94.91	4.84	-	0.25
		Acetone	7	6.6	94.29	5.00	-	0.71
48	Rivaroxaban	Acetic Acid	27.27	27.09	99.33	10.60	-	0.66
49	Metoprolol Succinate	Ethyl Acetate	2.93	2.77	94.54	98.63	5	-
		IPA	2.04	1.94	95.10	141.67	5	-
		Acetone	2.78	2.64	94.96	103.96	5	-

G-2 **LDAR proposed:**

- For detection of fugitive emission, VOC detector will be provided at process plant and raw material storage area
- The VOC concentration of various places will be recorded.
- Once leak will be detected, the source of leak needs to be identified using the VOC meter.
- VOC percentage of more than 10 ppm in atmosphere indicates a major leakage.
- The leaking point to be marked using the red tag for the purpose
- Once a leakage is identified, job order for correction will be raised by the concerned area in charge.
- The maintenance team evaluate the leakage and then the same is attended according to the priority.
- Once the job will be completed, the leakage area will be inspected again using VOC meter. Only if the VOC readings show no leakage, the job order will be considered complete.

G-3 **VOC emission** sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

As mentioned in G-2

Comments:

1. 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.
2. 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).

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

-

Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
1	Methanol	20 kl	4 Nos.	Toxic, Flammable
2	Methylene Chloride	20 kl	5 Nos.	Toxic, Flammable
3	Toluene	15 kl	1 Nos.	Toxic, Flammable
4	Hexane	15 kl	1 Nos.	Toxic, Flammable
5	HCl	10 kl	1 Nos.	Toxic
6	Liq. NH3	5 kl	2 Nos.	Toxic, Flammable

Storage of Hazardous chemicals in Tanks

Brief note on storage of Hazardous chemicals in Tanks

- All transfer pumps are centrifugal with mechanical seal & emergency push button to stop the pump in case of emergency.
- Deep pipe / splash leg provided to charging line.
- Flange guard provided to all flange joint.
- Tanker unloading point with online sampling mechanism arrangement.
- Level switch & level indicator to all tank
- Breather valve with flame arrester to all storage tanks.
- Level sensor for high-high level & annunciation of alarm same will be interlock with unloading pump.
- Solvent transferring provided with metering system.
- Dedicated piping for unloading & transferring mechanism.
- Double bottom valve at bottom with remote operated solenoid valve (ROSV)
- Earth fault detector at unloading pump of tanker as well as transferring pump.
- Earthing provided to all the transferring line and other associated piping with jumper at flange joint.
- Double earthing arrangement to all storage tank.

- Device to dissipating static charge accumulated on human provided at the entry point of tank farm.
- Flame proof electrification as per the ATEX requirements.
- Adequate size of dyke to storage tank to retain spill / leak in case of emergency.
- Hydrocarbon sensors for early detection of leakage / spillage.
- Nitrogen blanketing in storage tank.
- Wet Pipe Sprinkler (Auto) system around the tank and Hazmat Foam generator are provided on each tank.
- Water monitor & AFFF foam monitor are provided outside the Fence.
- Sluice valve in storm drain in & near tank farm area.
- Eye washer & safety shower in tank farm area.
- Labeling like tank No., tank capacity type of MOC, type of material stored, & NFPA symbol.
- Overall tank farm design & safety system as per the PESO guideline (The Petroleum Rules 2002).
- SOP / work instruction with check list for unloading & transferring operation.
- Board at tank farm entrance including compatibility chart & type of hazards associated with material & detail of license i.e. license No & validity.
- Training to operation staff w.r.t. safe operation & hazardous property of material & its control measure.

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

- Design of drum storage area as per the PESO guideline(The Petroleum Rules 2002).
- Adequate ventilation / exhaust system to storage area.
- Storage of different chemicals as per the compatibility matrix / chart i.e. dedicated area / space for dedicated material with proper distance between two different material.
- Separate storage area for water reactive & other non-compatible & oxidizer material
- Hydrocarbon sensor provided to the storage area.
- Auto sprinkler system with smoke detector provided in storage area.
- Separate dispensing booth with LEV (Local Exhaust Ventilation), AOD / NOD pump & proper earthing arrangement.
- Adequate ventilation
- Proper arrangement for loading & dispensing of drum.
- All drums are properly labeled with all the relevant safety details
- Stacker mechanism to stake the drum.
- Drum pallet i.e. HDPE pallet with
- Secondary containment facility to all the drum. Separate secondary containment to retain

spillage / leakage for each type of material.

- Separate drainage channel with fire water retention / holding tank & pumping mechanism.
- Sign board as well as DO & DON'T instruction board at the entrance of storage area.
- Training to staff / operating personal w.r.t. safety precaution in handling & incase of emergency.
- Provision to maintain storage condition as per the chemical characteristics.
- Separate drum decontamination facility for used & empty drums.
- Spill control kit provided at storage area.
- Eye washer & safety shower in tank farm area.
- Flexible blower provided to storage area.
- MSDS displayed at storage area.

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	• Materials will be stored as per its compatibility study and separate area will be available for flammable, corrosive and toxic chemical drums storage. • Smoking and other spark, flame generating item will be banned from this area. • NFPA labels will be provided on drums for hazard identification of the chemicals • Safety shower and eye wash shower will be provided near storage area and plant area. • Flame proof electrical equipment's provided in process and storage area. • Onsite emergency will be prepared as per GJR 68 J (9) and train all team members for emergency situation as per risk assessment scenarios outcome.
CORROSIVE& CHEMICALS	• Spill control kit will be provided near drum storage Area. • SCBA set will be provided and trained staff will be available for spillage and leakage of Toxic chemical. • Proper ventilation will be available which help to remove any fumes. • Toxic will be stored as per its compatibility study and separate area will be available toxic chemical drums storage. • OHC facility with part time Doctor and male nurse is prepared and maintained. • Exhaust will be provided at ground level in drum storage area.
TOXIC CHEMICALS	• All flooring, walls and shelving should resist corrosive attacks, and flooring should be impenetrable. • Proper ventilation will be available which help to remove any fumes. • Store corrosive chemicals below eye level to reduce the hazards should a vessel spill, leak or rupture • Fitted with suitable equipment and protection for the clean-up of spills. • Only trained personnel can carry out the venting of a liquid and they must wear the appropriate PPE while undertaking the task • Properly labelled with warning signs
REACTIVE CHEMICALS	• Store reactive materials as recommended in the MSDS. • In case of a chemical spill, alert others in the immediate vicinity and notify

	your supervisor. • Material will be handled in close loop. • Level gauge will be provided with low level high level. • Dyke wall will be provided to storage tank. • PPEs will be provided.

➢ **Applicability of PESO :** Will obtain PESO permission for relevant chemicals

Comments:

1. 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:**

Name of the hazardous process	**Control measures provided**
Hydrogenation	• Hydrogenation will be standalone facility and away from other process area • PLC base process controls and operation of plant will be installed. • Hydrogen Cylinder bank away from the reactor. • Hydrogen gas detector will be installed for early detection of gas leak.
Reaction of Methanol & Sodium Hydroxide solution	• Double earthing to reaction vessel, distillation vessel, and column & associated pipelines. • Close charging system for caustic & methanol charging in reaction vessel. • Entire operation control through PLC system. • Temperature & level interlock with methanol feeding pump in reaction vessel.
Reaction with HCl gas	• HCl Cylinder bank outside of the process plant. • Reactor will be use suitable MOC i.e. glass lined reactor. • HCl gas supply pipeline will be of PPFRP or suitable corrosion resistant material.

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

Total Plot Area:	245578 m^2
Area utilized for plant activity:	8393.7645 m^2
Area utilized for Hazardous Chemicals Storage:	3862.5 m^2
Number of Floors:	G+2
Water requirement for firefighting in KLD :	198
Water storage tank provided for firefighting in KLD:	1500
Details of Hydrant Pumps:	Main pump (capacity: 60 HP, 171 m^3/hr) and Jockey Pump(capacity:15 HP, 20 m^3/hr).

Nearest Fire Station :	DPMC Ankleshwar
Applicability of Off Site Emergency Plan:	--

Comments:

1. 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 1500 KL. SEAC found it as per the requirement.

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

Fire NOC will be obtained once up gradation of fire hydrant system will be done.

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

Number of permanent Employee :	546
Number of Contractual person/Labour :	451
Area provided for OHC:	Yes (25 m^2)
Number of First Aid Boxes :	More than 30
Nearest General Hospital :	Shri Jayaben Modi Hospital Ankleshwar
Name of Antidotes to be store in plant :	Methylene blue, Sodium Bicarbonate, Milk, Gluconate Solution (10%), Antivenom for snake bite, Aspirin, Soframycine, etc.…

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.

- During the SEAC Video conference meeting dated 07.01.2022, Project Proponent (PP) and their technical expert and EIA consultant from M/s. Precitech Laboratories Pvt. Ltd remains present and made technical presentation before the Committee.
- PP submitted satellite map showing that there is no any water bodies, villages, School, monuments etc. within 500 m radius of the project site. PP also submitted that there are no Eco sensitive zones, wild life sanctuaries within the 10 km area from the boundary of the project site.

  Committee noted that this is an expansion project for manufacturing of API and API intermediates located outside Notified area at Survey No. 66, 68, 69 & 70 Village: Naldhari, Survey No. 205, 206, 207, 864, 870, 871, 872, 873, 874, 875 & 876, Village: Valia & Plot No. 7/1 & 7/2, GIDC Valia Siludi-Valia Road, Tal.: Valia, Dist.: Bharuch. Unit is having valid EC and CCA for existing plant and self certified EC and CCA compliance report presented by PP. PP submitted undertaking regarding there is no legal court case, legal action taken by Board in last three year and public complaint against unit.

- Deliberation of the Committee:
  - ✓ NA permission letter and GIDC plot allotment for proposed project are reviewed.
  - ✓ Product profile with its end use discussed in depth and products will be manufactures as per market demand on campaign base, considering area adequacy of proposed plot area. Looking to product proposal , Committee asked for clarification regarding whether there is change in water consumption, waste water generation, fuel consumption and hazardous waste generation due to taking benefit of *permission to manufacture product u/head of API & Intermediates as per O. M. vide file no. 22-33/2019-IA.III dated 28th January 2021, technical expert of PP mentioned that there is no change in* water consumption, waste water generation, fuel consumption and hazardous waste generation and remain same as mentioned for expansion proposal. Later on PP submitted undertaking, through e-mail stating that the list of products given is indicative and company undertakes that out of listed and/or new products will be manufactured in permitted threshold limits of production and air/water/hazardous waste pollution load with all required compliances. Company already has spare manufacturing facility available. Hence, there will not be any addition of manufacturing equipments. However, additional cost mentioned is for ancillary activities.
  - ✓ Also PP committed that they will not exceed the permissible pollution load i.e. Quantity and quality, including composition, of emissions, discharges, and solid waste generation from such activity for inclusion in the Prior Environmental Clearance as per the MoEF&CC's OM dated 28.01.2021.Any change/ alteration in said product profile (submitted herewith application) will be immediately intimated to the Gujarat Pollution Control Board.
  - ✓ Site Plan/ layout with fire plan & floor plans and provision of separate entry & exits, 6 m wide peripheral road, distillation area, OHC, tank farm, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, fresh & spent solvent storage areas, hazardous waste storage area, 33% greenbelt within premises etc.
  - ✓ Source of water will be GIDC water supply.
  - ✓ Domestic Waste water will be treated in STP.
  - ✓ Total waste water will be segregated and high COD stream will be evaporated in in-house MEE and low COD stream along with MEE condensate will be treated in ETP and then further treated in RO and MEE and maintain complete ZLD.
  - ✓ Agrowaste/ Briquettes are proposed as fuel in boiler and TFH.
  - ✓ Two Stage Scrubber systems are proposed for control of process gas emission.
  - ✓ PP submitted hazardous waste matrix mentioning source of generation, quantity and Mode of

disposal and committed to comply the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.

- ✓ Fire hydrant plan, fire load calculation, Water balance diagram, Risk assessment, storage of Hazardous chemicals and its safety and Area adequacy was discussed.
- ✓ CER fund allocation, EMP, Green belt area, LDAR and solvent recovery was discussed.Looking to CER activity, Committee insisted for revised CER activity with focusing on environment field for which PP is agreed upon and later on submitted

- Looking to expansion proposal presented by technical expert of PP and showing NA document of proposed site, Committee insisted for NA letter with mentioning each survey number details of old survey number and revised survey number of proposed project and GIDC plot allotment letter details for which PP is agreed upon and later on submitted land document with each surven and plot allotment letter details, through e-mail.
- PP submitted an undertaking ensuring proposed product profile is in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as category B2 projects. Undertaking as proposal of said product are eligible to consider under B2 category as per the notification of MoEF&CC dated 27.03.2020.

After detailed discussion, Committee unanimously decided to recommend the project to SEIAA, Gujarat for grant of Environment Clearance with the following specific condition:

SPECIFIC CONDITIONS:

1. The Environment Clearance is recommended for the API and Intermediates as a single category instead of an individual category, in line to the MoEF&CC's OM vide file no. 22-33/2019-IA.III dated 28th January 2021 as requested by the Project proponent (PP). However, PP shall not exceed the permissible pollution load i.e. Quantity and quality, including composition, of emissions, discharges, and solid waste generation from such activity for inclusion in the Prior Environmental Clearance as submitted and committed during presentation.

2. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after the 30th September 2020, considered as per the provisions in force at that time as mentioned in the Notification vide S.O. 1223 (E) dated 27/03/2020.

3. PP shall carry out proposed project/activities in respect of Active Pharmaceutical Ingredients (API) as per the amended EIA Notification vide S.O. 1223 (E) dated 27/03/2020 and any subsequent amendments.

4. PP shall strictly adhere with commitment made for compliance of MoEF&CC's OM vide file no. 22-

33/2019-IA.III dated 28th January 2021, as per undertaking submitted by PP mentioning regarding prior informed GPCB, if any change/ alteration in said product profile (submitted herewith application) will be immediately intimated to the Gujarat Pollution Control Board.

5. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.

6. (a) R & D products shall be of similar chemistry in line with the EIA Notification vide S.O. 1223 (E) dated 27/03/2020 and the pollution load shall remain the same as committed. (b) Project proponent shall not take continuous/commercial production of the R & D materials. Necessary approvals shall be obtained from the concern authorities prior to commercial production of R & D materials. (c) Unit shall submit relevant details of R & D products like raw materials, its safety measures to the regulatory authority well before R & D activity. (d) Unit shall submit relevant details of R & D products like different wastes generated (Quantity & Quality) and its management to the regulatory authority within a month of R & D activity.

7. 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].

8. 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.

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

10. All measure shall be taken to avoid soil and ground water contamination within premises.

11. PP shall not dig bore well within premises without permission from CGWA for proposed expansion project water source.

WATER

12. Total water requirement for the project shall not exceed 1027 KLD. Unit shall reuse 527 KLD of boiler condensate and treated waste water within premises. Hence, fresh water requirement shall not exceed 500 KLD and it shall be met through GIDC supply only. Prior permission from concerned authority shall be obtained for withdrawal of water.

13. The industrial effluent generation from the project shall not exceed 511 KLD after expansion.

14. Total Industrial effluent shall be segregated in high COD and low COD stream as follows

- **<u>High COD and TDS stream(92 KLD)</u>**

  - 91 KLD high COD stream from process shall be passed through solvent stripper and then78 KLD treated effluent from solvent stripper and 1 KLD from scrubber shall be evaporated in in-house MEE -1while 62 KLD, MEE condensate shall be further treated in Low COD stream ETP units.

- **<u>Low COD and TDS stream(279 + 95 +44 KLD)</u>**

  - 279 KLD low COD stream from process,95 KLD from washing and 44 KLD from utility along with 62 KLD, MEE condensate shall be treated in ETP followed by RO plant and then 380 KLD, RO permeate shall be reused back in process while 95 KLD, RO reject shall be evaporated in in-house MEE-2.

  - 90 KLD, MEE-2 condensate shall be reused back in process within plant.

15. Project proponent (PP) shall maintain complete ZLD all the time and there shall be no drainage connection within premises and no waste water discharge outside premises by any means.

16. Unit shall feed wastewater to in-house MEE only after ensuring content of effluent for COD/VOC so as not to get air borne during evaporation in order to achieve no adverse impacts on Environment and Human Health.

17. Domestic wastewater generation shall not exceed 65 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank.

18. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during any shut down of in-house MEE.

19. Unit shall provide ETP, RO and MEE with adequate capacity.

<u>AIR</u>

20. Unit shall not exceed fuel consumption and provide APCM and Stack height as mentioned in flue gas matrix.

21. Unit shall provide APCM and stack height as mentioned in process gas matrix.

<u>HAZARDOUS & SOLID WASTE</u>

22. All hazardous solid waste shall be managed as mentioned in hazardous waste matrix.

23. 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

24. The PP shall develop green belt within premises (90150 Sq. m i.e. 36 % of total 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.

25. 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 within premises and separate storage of water for the same shall be ensured by PP.

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

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

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

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

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

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

m) Unit shall provide water sprinkler to the ammonia storage tank and HCl gas tank area.

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

11.	SIA/GJ/IND2/240406/2021	**M/s. Chem Star Crop Science Unit -II** Plot No. 2925-2929, 3031-3042, 3127-3132/6, G.I.D.C. Estate, Panoli-394 116, Ta. – Ankleshwar, Dist. – Bharuch.	Appraisal

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

Project status: **New**

- Project proponent (PP) has submitted online application vide no. SIA/GJ/IND2/240406/2021 on dated 13.11.2021 for obtaining Environmental Clearance.
- Project proponent has submitted Form – 1, Pre-Feasibility Report & Environment Management Plan as per Notification issued by MoEF&CC vide S.O. 1223(E) dated 27th March, 2020 regarding consideration of proposals or activities in respect of Active Pharmaceuticals Ingredients (API) as B2 category.
- This is a new unit and proposes for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below,

SR No.	Name of Product		API OR INTERMEDIATE	CAS No. / CI No.	Quantity MT/Month	*End-Use of Products
1.	Adefovir	AND/OR	API	142340-99-6	50	Hepatitis B Virus
2.	Amisulpiride	AND/OR	API	53583-79-2		Treatment of delusions, hallucinations, thought disorders
3.	Asenapine Maleate	AND/OR	API	85650-56-2		Mental / Mood Disorders
4.	Azithromycin Dihydrate	AND/OR	API	117772-70-0		Antibacterial
5.	BalofloxacinDihydrate	AND/OR	API	151060-21-8		Abdominal Pain
6.	Butoconazole	AND/OR	API	64872-77-1		Reduces vaginal burning, itching, and discharge that may occur with this condition
7.	Clinidipine	AND/OR	API	132203		Hypertension and Its

				-70-4		Comorbidities
8.	Didanosine	AND/OR	API	69655-05-6		HIV / Aids
9.	Doxepin HCL	AND/OR	API	1668-19-5		Antidepressant (Brain)
10.	Esomeprazole Magnesium Trihydrate	AND/OR	API	217087-09-7		Gastric
11.	Lidocane HCL	AND/OR	API	73-78-9		Relieve pain during certain medical procedures
12.	Metoprolol Succinate	AND/OR	API	98418-47-4		To treat high blood pressure
13.	Pitavastatin Calcium	AND/OR	API	147526-32-7		Cholesterol and Fats
14.	Prasugrel Hydrochloride	AND/OR	API	389574-19-0		Thrombosis In Patients with Acute Coronary Syndrome; Unstable Angina and Myocardial Infarction
15.	Risedronate Sodium	AND/OR	API	105462-24-6		Strengthen Bone, Treat or Prevent Osteoporosis and Treat Paget's Disease of Bone
16.	Tamsulosin Hydrochloride	AND/OR	API	106463-17-6		Enlarged Prostate
17.	Torsemide	AND/OR	API	56211-40-6		High Blood Pressure
18.	5-Chloro Salicylic acid	AND/OR	API	321-14-2		Glibenclamide – It is also known as glyburide, is a medication used to treat diabetes mellitus type 2. It is recommended that it be taken together with diet and exercise. It may be used with other antidiabetic medication.
19.	Isopropyl 2-bromoisobutyrate	AND/OR	Intermediate	51368-55-9		Fenofibrate - It is a medication of the fibrate class used to treatabnormal blood lipidlevels.
20.	Methyl -2-bromohexanote	AND/OR	Intermediate	5445-19-2		Amiodarone HCl – It is used to treat certain types of serious (possibly fatal) irregular heartbeat (such as persistent ventricularfibrillation/

						tachycardia). It is used to restore normal heart rhythm and maintain a regular, steady heartbeat.
21.	QuetiapineFumarate	AND/OR	API	111974-72-2		Schizophrenia, bipolar disorder and major depressive disorder.
22.	Benfotiamine	AND/OR	API	22457-89-2		It is used as a medication or dietary supplement to diabetes-related nerve damage, Alzheimer's disease and alcohol dependence
23.	1,3-Cyclohexanedione	AND/OR	Intermediate	504-02-9		Carvedilol – It is used to treat heart failure and hypertension High Blood Pressure
24.	4-Chloro-2-Amino Phenol	AND/OR	Intermediate	95-85-2		Chlorzoxazone –It is used together with rest and physical therapy to treat skeletal muscle conditions such as pain or injury.
25.	Venlafaxine hydrochloride	AND/OR	API	99300-78-4		To treat depression
26.	Atorvastatin Calcium Trihydrate	AND/OR	API	134523-03-8		Beta Blockers & Cholesterol reduction
27.	Ezogabine	AND/OR	API	202409-33-4		To control partial onset seizures
28.	Tapentadol hydrochloride	AND/OR	API	175591-09-0		Acute pain
29.	Sildosin	AND/OR	API	160970-54-7		Enlarged prostate
30.	4-(2-methoxy ethyl) phenol		API	56718-71-9		Anti allergy
31.	R & D Products (Sulphonation, Nitration, Amination, Chlorination, Bromination, hydrogenation etc…)			--	0.10	API/ API Intermediate
Total(Maximum)					**50.10**	-

- The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020.
- **Due to time constraint on SEAC Video conference meeting dated 07.01.2022, this case was postponed on SEAC VC meetin dated 10.0.2022.**
- **PP was called for Video conference meeting for presentation on dated 07.01.2022.**
- Since the proposed project is falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020, public consultation is not required as per

paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.

- During the SEAC Video conference meeting dated 07.01.2022, Project Proponent (PP) and their technical expert and EIA consultant from M/s. Envirocare Technocrats Pvt. Ltd remains present and made technical presentation before the Committee.
- During meeting, Committee noted that PP submitted GIDC plot allotment letter pupose for proposed plot showing corrugated boxes and also PP requested GIDC for change of purpose of plot on dated 01/01/2022 which is hust one week before meeting. Hence Committee disagrees with proposal.

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

1. GIDC plot allotment letter for proposed project with mentioning its purpose for API and intermediate manufacturing along with revised water supply permission letter from GIDC for proposed project.

12.	SIA/GJ/IND2/240642/2021	**M/s. Cropel Lifesciences Private Limited** Plot No. D-2/CH/365+366+367, Dahej 2 GIDC Industrial Estate, Ta- Vagra, Dist-Bharuch.	Appraisal

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

Project status: **New**

- Project proponent (PP) has submitted online application vide no. SIA/GJ/IND2/240642/2021 on dated 13.11.2021 for obtaining Environmental Clearance.
- Project proponent has submitted Form – 1, Pre-Feasibility Report & Environment Management Plan as per Notification issued by MoEF&CC vide S.O. 1223(E) dated 27th March, 2020 regarding consideration of proposals or activities in respect of Active Pharmaceuticals Ingredients (API) as B2 category.
- This is a new unit and proposes for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below,

Sr. No.	Name of Products	Quantity (MT/Month)
1	**API & Intermediates**	**150.0**
2	**R & D**	**0.1**

SR. No.	NAME OF PRODUCT	API OR INTERMEDIATE	CAS No.	Quantity MT/Month	End-use of the Products
1	Adapalene	**API**	106685-40-9		This medication is used to treat acne. It may decrease the number and severity of acne pimples and promote

				50 TPM (Sr. no. 1 to 50)	quick healing of pimples that do develop.
2	Alpha Lipoic Acid	**API**	1077-28-7		Alpha-lipoic acid is an antioxidant that is made naturally in the body and also found in foods. It is used to break down carbohydrates and to make energy.
3	Atovaquone	**API**	95233-18-4		Atovaquone is used to treat or prevent pneumonia
4	Bronopol	**API**	52-51-7		Bronopol is Used as an antimicrobial
5	BenidipineHCl	**API**	91599-74-5		BenidipineHCl is usually used for the treatment of hypertension, renal parenchymal hypertension, and angina pectoris.
6	Cetirizine hydrochloride	**API**	83881-52-1		Cetirizine Hydrochloride are used for the relief of symptoms of hayfever and other allergic conditions (e.g. sneezing, runny or itchy nose) or for skin rashes (chronic nettle rash, idiopathic urticaria) in adults and children over 6 years of age.
7	Clotrimazole	**API**	23593-75-1		Clotrimazole is used to treat vaginal yeast infections, oral thrush, diaper rash, pityriasis versicolor, and types of ringworm including athlete's foot.
8	Dapagliflozin	**API**	461432-26-8		This medication used to treat type 2 diabetes. It is also used to treat adults with certain kinds of heart failure.
9	Desloratidine	**API**	100643-71-8		It is used in adults and children to relieve hay fever and allergy symptoms, including sneezing; runny nose; red, itchy, tearing eyes.
10	Diacereine	**API**	13739-02-1		Diacereine is used to treat joint diseases such as osteoarthritis
11	Diclofenac Sodium	**API**	15307-79-6		Diclofenac Sodium is used to relieve joint pain from arthritis

12	Ethopabate	**API**	59-06-3		Ethopabate is used to treat infections caused by protozoa, which are single cell organisms that belong to the type of parasites.	
13	Etoricoxib	**API**	202409-33-4		Etoricoxib is indicated for the treatment of rheumatoid arthritis, psoriatic arthritis, osteoarthritis, ankylosing spondylitis, chronic low back pain, acute pain, and gout.	
14	Felbinac	**API**	5728-52-9		Felbinac helps to provide relief from painful joint and muscular inflammations caused due to sprains or strains.	
15	Fluconazole	**API**	86386-73-4		Fluconazole is used to treat vaginal yeast infections. It works by stopping the growth of common types of vaginal yeast (fungus).	
16	Glimepiride	**API**	93479-97-1		Glimepiride used with a proper diet and exercise program to control high blood	
17	Lercanidipine	**API**	100427-26-7		Lercanidipine is used in the treatment of high blood pressure.	
18	Levocetirizine Hydrochloride	**API**	130018-87-0		Levocetirizine is an antihistamine used to relieve allergy symptoms such as watery eyes, runny nose, itching eyes/nose, and sneezing.	
19	Lidocaine	**API**	137-58-6		Lidocaine is a local anesthetic agent that is commonly used for local and topic anesthesia, It can be used as an adjunct to tracheal intubation.	
20	Linezolid	**API**	165800-03-3		Linezolid is used to treat different types of bacterial infections, such as pneumonia, skin infections, and infections that are resistant to other antibiotics.	
21	Lornoxicam	**API**	70374-39-9		Lornoxicam is an NSAID indicated in the treatment of mild to moderate pain, as well as rheumatoid arthritis and osteoarthritis.	

22	Losartan Potassium	**API**	124750-99-8		Losartan is an angiotensin II receptor blocker used to treat hypertension, diabetic nephropathy, and to reduce the risk of stroke.	
23	Luliconazole	**API**	105816-04-4		Luliconazole is used to treat diabetes mellitus type 2.	
24	Meloxicam	**API**	71125-38-7		Meloxicam is used to treat arthritis. It reduces pain, swelling, and stiffness of the joints. Meloxicam is known as a nonsteroidal anti-inflammatory drug (NSAID).	
25	Metoclopramide base	**API**	364-62-5		Metoclopramide base is used mostly for heartburn that occurs after a meal or during the daytime.	
26	Metoclopramide hydrochloride	**API**	7232-21-5		Metoclopramide hydrochloride is used to treat certain conditions of the stomach and intestines.	
27	Metoprolol succinate	**API**	98418-47-4		Metoprolol succinate is used to treat chest pain and hypertension (high blood pressure). It is also used to lower your risk of death or needing to be hospitalized for heart failure.	
28	Metoprolol tartarate	**API**	56392-17-7		Metoprolol tartarate is used to treat High blood pressure (hypertension).	
29	Metoprolol hydrochloride	**API**	56392-18-8		Metoprolol hydrochloride is used to treat chest pain (angina), heart failure, and high blood pressure. Lowering high blood pressure helps prevent strokes, heart attacks, and kidney problems.	
30	Nebivolol hydrochloride	**API**	152520-56-4		Nebivolol hydrochloride is highly cardio selective under certain circumstances	
31	Ondansetron hydrochloride	**API**	103639-04-9		Ondansetron hydrochloride is used to prevent nausea and vomiting caused by cancer chemotherapy, radiation therapy, and surgery.	
32	Oxcarbazepine	**API**	28721-07-		Oxcarbazepine is used	

			5		either alone or with other medicines to treat partial seizures	
33	Palenesetron hydrochloride	**API**	135729-62-3		Palenesetron hydrochloride is prescription medicine used in adults to help prevent the nausea and vomiting that happens with certain anticancer medicines.	
34	Pantoprazole Sodium	**API**	138786-67-1		Pantoprazole Sodium is used to treat erosive esophagitis (damage to the esophagus from stomach acid caused by gastroesophageal reflux disease, or GERD) in adults and children who are at least 5 years old.	
35	PerindropilErbumine	**API**	107133-36-8		Perindopril is a medicine used to treat high blood pressure and heart failure. It's also prescribed after a heart attack.	
36	Phenylephrine Hydrochloride	**API**	61-76-7		Phenylephrine is used to relieve nasal discomfort caused by colds, allergies, and hay fever.	
37	Pregabaline	**API**	148553-50-8		Pregabalin capsules and oral solution are used along with other medications to treat certain types of seizures in adults and children 1 month of age and older.	
38	Prilocaine	**API**	721-50-6		Prilocaine is Anaesthetic agent- used to prevent pain caused by an injection.	
39	Prochlorperazine Maleate	**API**	84-02-6		Prochlorperazine Maleate Tablets is an antipsychotic used to treat schizophrenia, and is also an antiemetic used to control severe nausea and vomiting.	
40	Rabeprazole Sodium	**API**	117976-90-6		Rabeprazole Sodium is used to treat certain stomach and esophagus problems (such as acid reflux, ulcers).	
41	Rivaroxaban	**API**	366789-02-8		Rivaroxaban is used to prevent or treat a type of blood clot called deep vein thrombosis (DVT), which	

					can lead to blood clots in the lungs (pulmonary embolism	
42	Sevelamer	**API**	52757-95-6		Sevelamer is a phosphate binding medication used to treat hyperphosphatemia in patients with chronic kidney disease	
43	Tadalafil	**API**	171596-29-5		Tadalafil is used to treat erectile dysfunction (ED, impotence; inability to get or keep an erection), and the symptoms of benign prostatic hyperplasia.	
44	Tamsulosine hydrochloride	**API**	106463-17-6		Tamsulosin is used by men to treat the symptoms of an enlarged prostate (benign prostatic hyperplasia-BPH).	
45	Terbinafine HCL	**API**	78628-80-5		Terbinafine HCL is used to treat a variety of fungal skin infections such as ringworm, athlete's foot, and jock itch.	
46	Tolperisone Hydrochloride	**API**	3644-61-9		Tolperisone Hydrochloride is a muscle relaxant used to relieve spasticity after stroke in adults.	
47	Topiramate	Interme diate	97240-79-4		Topiramate is used to prevent migraine headaches	
48	Trifluoperazine hydrochloride	Interme diate	440-17-5		Trifluoperazine hydrochloride is used to treat certain mental/mood disorders (such as schizophrenia, psychotic disorders).	
49	Voriconazole	Interme diate	137234-62-9		Voriconazole medicine used to treat Invasive Aspergillosis, Candidemia, Esophageal Candidiasis and Serious Fungal Infections.	
50	Vildagliptin	Interme diate	274901-16-5		Vildagliptin is used to treat diabetes mellitus type 2.	
51	(+/-)-trans-4-(4-Fluorophenyl)-3-(hydroxymethyl)-1-methylpiperidine	Interme diate	318279-38-8	**100 TPM (Sr. no. 51 to 75)**	Paroxetine is used to treat depression, panic attacks, obsessive-compulsive disorder (OCD), anxiety disorders, and post-traumatic stress disorder.	
52	±3-(Carbamoyl	Interme	181289-		Pregabalin capsules and	

	Methyl Hexanoic Acid	diate	15-6		oral solution are used along with other medications to treat certain types of seizures in adults and children 1 month of age and older.	
53	2,2-Dimethoxyethanamine	Intermediate	22483-09-6		Dolutegravir is an antiviral medicine that is used with other medications to treat HIV, the virus that can cause the acquired immunodeficiency syndrome (AIDS).	
54	2-(2 chloroEthoxy)Ethanol	Intermediate	628-89-7		Quetiapine is an atypical antipsychotic medication used for the treatment of schizophrenia, bipolar disorder, and major depressive disorder.	
55	2-n-Butyl Benzofuran	Intermediate	4265-27-4		Amiodarone Hydrochloride is an antiarrhythmic medication used to treat and prevent a number of types of irregular heartbeats.	
56	2-n-Butyl-3(4-Hydroxy Benzoyl) Benzofuran	Intermediate	52490-15-0		Pantoprazole is used to treat certain stomach and esophagus problems (such as acid reflux). It works by decreasing the amount of acid your stomach makes.	
57	3-(3-chloropropyl)-7,8-dimethoxy-1,3-dihydro-2H-3-benzazepin-2-one	Intermediate	85175-59-3		Ivabradine is used to treat heart failure.	
58	4-(2-Methoxy ethyl) Phenol	Intermediate	56718-71-9		Metoprolol is a beta-blocker used to treat chest pain (angina), heart failure, and high blood pressure. Lowering high blood pressure helps prevent strokes, heart attacks, and kidney problems.	
59	Bis-(2-chloroethyl amine)hydrochloride	Intermediate	821-48-7		Cyclophosphamide is an antifungal- used to treat certain infections caused by fungus.	
60	2-Amino 5-Methyl Thiazole	Intermediate	7305-71-7		Meloxicam is Anti-inflammatory- used to treat pain and inflammation in rheumatic diseases and osteoarthritis.	
61	Dimethyl aminoethylchloride	Intermediate	4584-46-7		Chlorphenamine is used to treat runny nose, sneezing,	

	hydrochloride				itching, and watery eyes caused by allergies, the common cold, or the flu.	
62	Methyl-5-bromo-2-hydroxy-3-propanoylbenzoate	Intermediate	91983-31-2		Flovaxate is used to treat certain bladder/urinary tract symptoms. it is a smooth-muscle relaxant. It works by relaxing the muscles in the bladder.	
63	Ketosulfone	Intermediate	221615-75-4		Etoricoxib is medicine called a non-steroidal anti-inflammatory drug.	
64	Dibenzo[b,f][1,4]Thiazepin-11[10H]-One	Intermediate	07-07-3159		Quetiapine Fumarate is Anti-psychotic -used to treat certain mental/mood conditions.	
65	N,N-Diethyl Ethylene Diamine	Intermediate	100-36-7		Metoclopramide is used to treat certain conditions of the stomach and intestines.	
66	N-octyl d-glucamine		23323-37-7		Dexketoprofen is a nonsteroidal anti-inflammatory drug It is also used for reduce migraines and knee pain.	
67	Para ChloroBenzhydryl Chloride		134-83-8		Cetirizine is an anti-allergic drug- used to treat allergic rhinitis, dermatitis, and urticaria.	
68	Para ChloroBenzhydryl Piperazine		303-26-4		Cetirizine is an antihistamine used to relieve allergy symptoms such as watery eyes, runny nose, itching eyes/nose, and sneezing. It is also used to relieve itching and hives.	
69	Para Chloro Benzo Phenone		134-85-0		Cetirizine is used for the relief of symptoms of high fever and other allergic conditions (e.g. sneezing, runny or itchy nose) or for skin rashes win adults and children over 6 years of age.	
70	Ethyl cyanoacetate		105-56-6		Pregabalin capsules and oral solution are used along with other medications to treat certain types of seizures in adults and children 1 month of age and older.	

71	2-[(dimethylamino) methyl] cyclohexanone hydrochloride		42036-65-7		Tramadol is used to treat moderate to severe pain in adults. The extended-release form of tramadol is for around-the-clock treatment of pain.
72	1-(2,4-Difluorophenyl)-2-(1H-1,2,4-triazol-1-yl)ethanone		110-59-8		Losartan potassium is medication mainly used to treat high blood pressure.
73	Valero Nitrile		124750-51-2		Losartan potassium is medication mainly used to treat high blood pressure.
74	5-(4'-Bromomethyl-1, 1'-Biphenyl-2-YL)-1-TriphenylmethyL-1H-Tetrazole (TTBB)		83857-96-9		Losartan potassium is medication mainly used to treat high blood pressure.
75	Para Amino Salicylic Acid		65-49-6		Rifampicin is used to prevent and treat tuberculosis and other infections. This antibiotic treats only bacterial infections.
***R&D**				**0.1 MT/Month**	
TOTAL				**150.1MT/Month**	

Brief Note of Product Profile:

1. No of Manufacturing Plants: 2 Nos.
2. Brief Note regarding number of Products to be manufactured considering plant capacity:
   1 At a time 2-4 Nos. of products will be manufactured.
   2 Considering plant capacity: 5 Ton/Day

ENDUSE OF PRODUCTS

Sr. No.	Name of the Product	CAS No. (Product)	Type/ Category of Product (API/ Intermediate)	In case of Intermediate stage of API			Said API is used for/End Use of said API
				Stage i.e. n-1, n-2, etc.	Name of API in which Intermediate Used/ End use of said Intermediate	CAS no. (API)	
1	Adapalene	106685-40-9	API	---	---	106685-40-9	It works by affecting the growth of cells and decreasing swelling and inflammation and It is used to treat acne

2	Alpha Lipoic Acid	1077-28-7	API	---	---	1077-28-7	Alpha-lipoic acid is an antioxidant that is made naturally in the body and also found in foods.
3	Atovaquone	95233-18-4	API	---	---	95233-18-4	Atovaquone is used to treat or prevent pneumonia
4	Bronopol	52-51-7	API	---	---	52-51-7	Bronopol is Used as an antimicrobial
5	BenidipineHCl	91599-74-5	API	---	---	91599-74-5	BenidipineHCl is usually used for the treatment of hypertension, renal parenchymal hypertension, and angina pectoris.
6	Cetirizine hydrochloride	83881-52-1	API	---	----	83881-52-1	Cetirizine Hydrochloride are used for the relief of symptoms of hayfever and other allergic conditions (e.g. sneezing, runny or itchy nose) or for skin rashes (chronic nettle rash, idiopathic urticaria) in adults and children over 6 years of age.
7	Clotrimazole	23593-75-1	API	---	----	23593-75-1	Clotrimazole is used to treat skin infections such as athlete's foot, jock itch, ringworm, and other fungal skin infections.
8	Dapagliflozin	461432-26-8	API	---	----	461432-26-8	Dapagliflozin is a medication used to treat type 2 diabetes. It is also used to treat adults with certain kinds of heart failure.
9	Desloratidine	100643-71-8	API	--	---	100643-71-8	Desloratadine is used in adults and children to relieve hay fever and allergy symptoms, including sneezing; runny nose; and red, itchy, tearing eyes.
10	Diacereine	13739-02-1	API	---	---	13739-02-1	Diacereine is used to treat joint diseases such as osteoarthritis
11	Diclofenac Sodium	15307-79-6	API	---	----	15307-86-5	Diclofenac Sodium is used to relieve joint pain from arthritis
12	Ethopabate	59-06-3	API	---	----	59-06-3	Ethopabate is used to treat infections caused by protozoa, which are single

							cell organisms that belong to the type of parasites.
13	Etoricoxib	202409-33-4	API	---	----	202409-33-4	Etoricoxib is indicated for the treatment of rheumatoid arthritis, psoriatic arthritis, osteoarthritis, ankylosing spondylitis, chronic low back pain, acute pain, and gout.
14	Felbinac	5728-52-9	API	---	----	5728-52-9	Felbinac helps to provide relief from painful joint and muscular inflammations caused due to sprains or strains.
15	Fluconazole	86386-73-4	API	---	----	86386-73-4	Fluconazole is used to treat vaginal yeast infections. It works by stopping the growth of common types of vaginal yeast (fungus).
16	Glimepiride	93479-97-1	API	---	---	93479-97-1	Glimepiride used with a proper diet and exercise program to control high blood
17	Lercanidipine	100427-26-7	API	---	---	100427-26-7	Lercanidipine is used in the treatment of high blood pressure.
18	Levocetirizine Hydrochloride	130018-87-0	API	---	----	130018-87-0	Levocetirizine is an antihistamine used to relieve allergy symptoms such as watery eyes, runny nose, itching eyes/nose, and sneezing.
19	Lidocaine	137-58-6	API	---	----	137-58-6	Lidocaine is a local anesthetic agent that is commonly used for local and topic anesthesia, but which also has antiarrhythmic and analgesic uses and can be used as an adjunct to tracheal intubation.
20	Linezolid	165800-03-3	API	---	----	165800-03-3	Linezolid is used to treat different types of bacterial infections, such as pneumonia, skin infections, and infections that are resistant to other antibiotics.
21	Lornoxicam	70374-39-9	API	---	----	70374-39-9	Lornoxicam is an NSAID indicated in the treatment of mild to moderate pain, as well as rheumatoid arthritis and osteoarthritis.

22	Losartan Potassium	124750-99-8	API	---	---	124750-99-8	Losartan is an angiotensin II receptor blocker used to treat hypertension, diabetic nephropathy, and to reduce the risk of stroke.
23	Luliconazole	105816-04-4	API	---	---	105816-04-4	Luliconazole is used to treat diabetes mellitus type 2.
24	Meloxicam	71125-38-7	API	---	----	71125-38-7	Meloxicam is used to treat arthritis. It reduces pain, swelling, and stiffness of the joints. Meloxicam is known as a nonsteroidal anti-inflammatory drug (NSAID).
25	Metoclopramide base	364-62-5	API	---	---	364-62-5	Metoclopramide base is used mostly for heartburn that occurs after a meal or during the daytime.
26	Metoclopramide hydrochloride	7232-21-5	API	---	---	7232-21-5	Metoclopramide hydrochloride is used to treat certain conditions of the stomach and intestines.
27	Metoprolol succinate	98418-47-4	API	---	---	98418-47-4	Metoprolol succinate is used to treat angina (chest pain) and hypertension (high blood pressure). It is also used to lower your risk of death or needing to be hospitalized for heart failure.
28	Metoprolol tartarate	56392-17-7	API	---	---	56392-17-7	Metoprolol tartarate is used to treat High blood pressure (hypertension).
29	Metoprolol hydrochloride	56392-18-8	API	---	---	98418-47-4	Metoprolol hydrochloride is a beta-blocker used to treat chest pain (angina), heart failure, and high blood pressure. Lowering high blood pressure helps prevent strokes, heart attacks, kidney problems.
30	Nebivolol hydrochloride	152520-56-4	API	---	---	152520-56-4	Nebivolol hydrochloride is highly cardio selective under certain circumstances
31	Ondansetron hydrochloride	103639-04-9	API	---	---	103639-04-9	Ondansetron hydrochloride is used to prevent nausea and vomiting caused by cancer chemotherapy, radiation therapy, and surgery.

32	Oxcarbazepine	28721-07-5	API	---	---	28721-07-5	Oxcarbazepine is used either alone or with other medicines to treat partial seizures
33	Palenesetron hydrochloride	135729-62-3	API	---	---	135729-62-3	Palenesetron hydrochloride is prescription medicine used in adults to help prevent the nausea and vomiting that happens with certain anticancer medicines (chemotherapy).
34	Pantoprazole Sodium	138786-67-1	API	---	----	138786-67-1	Pantoprazole Sodium is used to treat erosive esophagitis (damage to the esophagus from stomach acid caused by gastroesophageal reflux disease, or GERD) in adults and children who are at least 5 years old.
35	PerindropilErbumine	107133-36-8	API	---	---	107133-36-8	Perindopril is a medicine used to treat high blood pressure and heart failure. It's also prescribed after a heart attack.
36	Phenylephrine Hydrochloride	61-76-7	API	---	----	61-76-7	Phenylephrine is used to relieve nasal discomfort caused by colds, allergies, and hay fever.
37	Pregabaline	148553-50-8	API	---	----	148553-50-8	Pregabalin capsules and oral solution are used along with other medications to treat certain types of seizures in adults and children 1 month of age and older.
38	Prilocaine	721-50-6	API	---	----	721-50-6	Prilocaine is Anaesthetic agent- used to prevent pain caused by an injection.
39	Prochlorperazine Maleate	84-02-6	API	---	----	84-02-6	Prochlorperazine Maleate Tablets is an antipsychotic used to treat schizophrenia, and is also an antiemetic used to control severe nausea and vomiting.
40	Rabeprazole Sodium	117976-90-6	API	---	----	117976-90-6	Rabeprazole Sodium is used to treat certain stomach and esophagus problems (such as acid reflux, ulcers).
41	Rivaroxaban	366789-	API	---	---	366789-02-8	Rivaroxaban is used to prevent or treat a type of

		02-8					blood clot called deep vein thrombosis (DVT), which can lead to blood clots in the lungs (pulmonary embolism
42	Sevelamer	52757-95-6	API	---	---	52757-95-6	Sevelamer is a phosphate binding medication used to treat hyperphosphatemia in patients with chronic kidney disease.
43	Tadalafil	171596-29-5	API	---	---	171596-29-5	Tadalafil is used to treat erectile dysfunction (ED, impotence; inability to get or keep an erection), and the symptoms of benign prostatic hyperplasia.
44	Tamsulosine hydrochloride	106463-17-6	API	---	----	106463-17-6	Tamsulosin is used by men to treat the symptoms of an enlarged prostate (benign prostatic hyperplasia-BPH).
45	Terbinafine HCL	78628-80-5	API	---	----	78628-80-5	Terbinafine HCL is used to treat a variety of fungal skin infections such as ringworm, athlete's foot, and jock itch.
46	Tolperisone Hydrochloride	3644-61-9	API	---	---	3644-61-9	Tolperisone Hydrochloride is a muscle relaxant used to relieve spasticity after stroke in adults.
47	Topiramate	97240-79-4	API	---	---	97240-79-4	Topiramate is used to prevent migraine headaches
48	Trifluoperazine hydrochloride	440-17-5	API	---	---	440-17-5	Trifluoperazine hydrochloride is used to treat certain mental/mood disorders (such as schizophrenia, psychotic disorders).
49	Voriconazole	137234-62-9	API	---	---	137234-62-9	Voriconazole medicine used to treat the symptoms of Invasive Aspergillosis, Candidemia, Esophageal Candidiasis and Serious Fungal Infections.
50	Vildagliptin	274901-16-5	API	---	---	274901-16-5	Vildagliptin is used to treat diabetes mellitus type 2.
51	(+/-)-trans-4-(4-Fluorophenyl)-3-(hydroxymethyl)-1-methylpiperidine	318279-38-8	Intermediate		Paroxetine	61869-08-7	Paroxetine is used to treat depression, panic attacks, obsessive-compulsive disorder, anxiety disorders, and post-traumatic stress

							disorder.
52	±3-(Carbamoyyl Methyl Hexanoic Acid	181289-15-6	Intermediate	n-2	Pregabalin	148553-50-8	Pregabalin capsules and oral solution are used along with other medications to treat certain types of seizures in adults and children 1 month of age and older.
53	2,2-Dimethoxyethanamine	22483-09-6	Intermediate	n-1	Dolutegravir	1051375-16-6	Dolutegravir is an antiviral medicine that is used with othermedications to treat HIV,the virus that cancause the acquired immunodeficiency syndrome
54	2-(2 chloroEthoxy)Ethanol	628-89-7	Intermediate	n-2	Quetiapine	111974-69-7	Quetiapine is an atypical antipsychotic medication used for the treatment of schizophrenia, bipolar disorder, and major depressive disorder.
55	2-n-Butyl Benzofuran	4265-27-4	Intermediate	n-3	Amiodarone	1951-25-3	Amiodarone is an antiarrhythmic used to treat and prevent a number of types of irregular heartbeats.
56	2-n-Butyl-3(4-Hydroxy Benzoyl) Benzofuran	52490-15-0	Intermediate	n-2	Amiodarone Hydrochloride	1951-25-3	Amiodarone Hydrochloride is an antiarrhythmic medication used to treat and prevent a number of types of irregular heartbeats.
57	3-(3-chloropropyl)-7,8-dimethoxy-1,3-dihydro-2H-3-benzazepin-2-one	85175-59-3	Intermediate	n-1	Ivabradine	155974-00-8	Ivabradine is used to treat heart failure.
58	4-(2-Methoxy ethyl) Phenol	56718-71-9	Intermediate	n-1	Metoprolol	37350-58-6	Metoprolol is a beta-blocker used to treat chest pain (angina), heart failure, and high blood pressure. Lowering high blood pressure helps prevent strokes, heart attacks, and kidney problems.
59	Bis-(2-chloroethyl amine)hydrochloride	821-48-7	Intermediate	n-1	Cyclophosphamide	50-18-0	Cyclophosphamide is an antifungal- used to treat certain infections caused by fungus.
60	2-Amino 5-Methyl Thiazole	7305-71-7	Intermediate	n-1	Meloxicam	71125-38-7	Meloxicam is Anti-inflammatory- used to treat pain and inflammation in rheumatic diseases and

							osteoarthritis.
61	Dimethyl aminoethylchloride hydrochloride	4584-46-7	Intermediate	n-4	Chlorphenamine	132-22-9	Chlorphenamine is used to treat runny nose, sneezing, itching, and watery eyes caused by allergies, the common cold, or the flu.
62	Methyl-5-bromo-2-hydroxy-3-propanoylbenzoate	91983-31-2	Intermediate	n-1	Flovaxate	15301-69-6	Flovaxate is used to treat certain bladder/urinary tract symptoms. It works by relaxing the muscles in the bladder.
63	Ketosulfone	221615-75-4	Intermediate	n-1	Etoricoxib	202409-33-4	Etoricoxib is medicine called a non-steroidal anti-inflammatory drug.
64	Dibenzo[b,f][1,4]Thiazepin-11[10H]-One	07-07-3159	Intermediate	n-1	Quetiapine Fumarate	111974-69-7	Quetiapine Fumarate is Anti-psychotic -used to treat certain mental/mood conditions.
65	N,N-Diethyl Ethylene Diamine	100-36-7	Intermediate	n-2	Metoclopramide	364-62-5	Metoclopramide is used to treat certain conditions of the stomach and intestines.
66	N-octyl d-glucamine	23323-37-7	Intermediate	n-2	Dexketoprofen	156604-79-4	Dexketoprofen is a nonsteroidal anti-inflammatory drug It is also used for reduce migraines and knee pain.
67	Para ChloroBenzhydryl Chloride	134-83-8	Intermediate	n-2	cetirizine	83881-51-0	Cetirizine is an anti-allergic drug- used to treat allergic rhinitis, dermatitis, and urticaria.
68	Para ChloroBenzhydryl Piperazine	303-26-4	Intermediate	n-3	Cetirizine	83881-51-0	Cetirizine is an Antihistamine used to relieve allergy symptoms such as watery eyes, runny nose,itching eyes/nose, and sneezing. It is also used to relieve itching and hives.
69	Para Chloro Benzo Phenone	134-85-0	Intermediate	n-2	Cetirizine Di HCl	83881-52-1	Cetirizine is used for the relief of symptoms of high fever and other allergic conditions (e.g. sneezing, runny or itchy nose) or for skin rashes win adults and children over 6 years of age.
70	Ethyl cyanoacetate	105-56-6	Intermediate	n-4	Pregabalin	148553-50-8	Pregabalin capsules and oral solution are used along with other medications to treat certain types of seizures in

							adults and children 1 month o age and older.
71	2-[(dimethylamino)methyl] cyclohexanone hydrochloride	42036-65-7	Intermediate	n-1	Tramadol	27203-92-5	Tramadol is used to treat moderate to severe pain in adults. The extended-release form of tramadol is for around-the-clock treatment of pain.
72	1-(2,4-Difluorophenyl)-2-(1H-1,2,4-triazol-1-yl)ethanone	110-59-8	Intermediate	(n-2)	Losartan potassium	124750-99-8	Losartan potassium is medication mainly used to treat high blood pressure.
73	Valero Nitrile	124750-51-2	Intermediate	(n-1)	Losartan potassium	124750-99-8	Losartan potassium is medication mainly used to treat high blood pressure.
74	5-(4'-Bromomethyl-1, 1'-Biphenyl-2-YL)-1-TriphenylmethyL-1H-Tetrazole (TTBB)	83857-96-9	Intermediate	(n-1)	Losartan potassium	124750-99-8	Losartan potassium is medication mainly used to treat high blood pressure.
75	Para Amino Salicylic Acid	65-49-6	Intermediate	n-1	Rifampicin	13292-46-1	Rifampicin is used to prevent and treat tuberculosis and other infections. This antibiotic treats only bacterial infections

- The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020.
- **Due to time constraint on SEAC Video conference meeting dated 07.01.2022, this case was postponed on SEAC VC meetin dated 10.0.2022.**
- **PP was called for Video conference meeting for presentation on dated 07.01.2022.**
- Since the proposed project is falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
- PP submitted salient features of water, air and Hazardous waste management are as under,

<table>
<tr><td>Sr. No.</td><td>Particulars</td><td>Details</td></tr>
<tr><td>A-1</td><td>Total cost of Proposed Project
(Rs. in Crores):
<table><tr><td>Total Project</td></tr><tr><td>10.00 Crores</td></tr></table>Break-up of proposed project Cost:
<table><tr><td>Details</td><td>Project Cost
(Rs. In Crores)</td></tr><tr><td>Land</td><td>2.95</td></tr><tr><td>Building</td><td>1.2</td></tr></table></td><td></td></tr>
</table>

		Plant & Machinery & other cost	2.15
		EMP	3.7

A-2 Details of Environmental Management Plan (EMP) — As below:

Sr. No	Unit	Detail	Capital Cost (Rs. In Crores)	Operating Cost (Rs. In Crores)	Maintenance Cost (Rs. In Crores)	Total Recurring Cost (Rs. In Crores)
1	Waste Water	ETP Capacity:- 70 KLD	0.8	0.298143	0.250	0.5481
2	Air	--	0.35	--	0.0125	0.0125
3	Hazardous Management	--	0.25	0.050359	0.040	0.0904
4	Risk and Safety Audit	--	0.8	--	0.0167	0.0167
5	Fire & Safety	--	0.72	--	0.0333	0.0333
6.	Green Belt Development	--	0.05	--	0.0017	0.0017
7.	Rain water Harvesting	--	0.05	--	0.0008	0.0008
8.	AWH Monitoring	--	0.5	0.0085	0.004	0.0125
9.	Occupational Health	--	0.18	--	0.0042	0.0083
Total			3.7			0.27

Summary

Cost of Project in Crores per Annum:	10.0 Crores
EMP Capital Cost in Crores:	3.7Crores
EMP Recurring Cost in Crores Per Annum	8.69Crores

A-3 Details of CER as per OM dated 01/05/2018 (In case of project falls under CPA/SPA, CER fund allocation to be at least 2 times the slabs given in the OM dated 01.05.2018 for SPA and 2 times for CPA in case of Environmental Clearance as per the mechanism published vide MoEF&CC's OM vide 31.10.2019.)

% as per the OM	Rs. in Lakhs
2%	10.0

Brief note on proposed activities:

Activities (On basis of Needs Assessment)	Total for 2 Years
Solid waste management facilities [i.e. Distribution of Dustbin for Dry and Wet waste]	12.0 Lakh
Electrification Including Solar Power Installation of Solar Street Light near Gam Panchayat Area – Installation of Roof Top Solar System for Gam Panchayat Office	8.0 Lakh
Total Cost	20.0 Lakh

B	Land / Plot ownership details: GIDC/ENG/DEE/ANK/DAH1/00013/2021/389 Dated:07-09-2021. Plot allotment letter is attached as Annexure-I.
B-1	Plot area Total Plot area: 11307.42 Sq. m.
B-2	Brief note on Area adequacy in line to proposed project activities: ➢ Production capacity: 150 MT/Month. ➢ Company will store its raw material in Tanks (We procure Raw Materials from the local market. 90% of these raw materials are easily available from this market. Hence, no excess quantity of raw materials will be stored). ➢ List of Hazardous chemicals stored in tanks shown below.

S. N.	Name of chemical	Quantity (Nos.)	Total (Nos.)	Total Qty. to be store (KL)
Non PESO solution				
1	Sulphuric Acid	10 KL	1 Nos.	9.33 KL
2	Nitric Acid	5 KL	1 Nos.	3.03 KL
3	Hydrochloric Acid	10 KL	1 Nos.	7.51 KL
PESO Solution-Drum				
1	Acetic acid	250 Lit	16 Nos.	4 Kl
2	Acetone	250 Lit	31 Nos.	7.88 Kl
3	Chloroform	250 Lit	45 Nos.	11.33 Kl
4	DMF	250 Lit	41 Nos.	10.50 Kl
5	EDC	250 Lit	9 Nos.	2.33 Kl
6	Ethanol	250 Lit	28 Nos.	7 Kl
7	Ethyl acetate	250 Lit	37 Nos.	9.33 Kl
8	IPA	250 Lit	33 Nos.	8.17 KL
PESO Solution-Tank				
9	MDC	30 KL	1 Nos.	29.28 KL
10	Methanol	15 KL	1 Nos.	13.64 KL
11	Toluene	30 KL	1 Nos.	22.05 Kl
Bank-(Set Of Cylinder)				
1	Hydrogen	60 kg X 6 Nos.	6 Nos.	0.35 KL

- Area required for ETP 250 m^2.
- 160.0 m^2 area provided for the Boiler House.
- 2100.0 m^2 (F+S) area will be provided for the manufacturing of the proposed products.

Sr. No	Particulars	Criteria for Storage	Inventory Required (MT)(KL)	Area Required m^2	Area Proposed m^2
1	Finished product storage area (1 week inventory)	Bags/Drums : 700 0.6m^2/ 1 Bag	35	140	300
2	Raw Material Storage area (1 week inventory)	Drums : 320 (0.5 m^2/1 Drum)	80	112	200
3	Raw Material Storage area (1 week inventory)	Bags : 800 (0.6 m^2/ 1 Bag)	40	160	200
4	Solvent storage area	Drums: 560 (0.5 m^2/1	140	172	370

		Drum)			
5	Hydrogen Bank (H2 Bank)	-	0.35	-	10
6	Chlorine Tonner Area	-	2.80	30	50
			298.15 MT	614 m^2	1130 m^2

- Hence, adequate area is available for proposed in Bulk drug intermediate mfg. Facility.

B-3 Green belt area

	Total (Sq. meter)
Area in Sq. meter	3731.44Sq. m.
% of total area	33%

C Employment generation

Total
100 Employees

D Water

D-1 Source of Water Supply
(GIDC, Bore well, Surface water, Tanker supply etc...)

- GIDC Water Supply

D-2 Water consumption (KLD)

Category	Quantity KLD	Remarks
(M) Domestic	5.0	
(N) Gardening	8.0	
Industrial		
Process	23.35	
Washing	8.00	
Boiler	15.52	
Cooling	5.49	
Others[Scrubber]	4.64	
Industrial Total	57.00	
Total (A + B + C)	70.00	

Brief Note on worst case scenario for water consumption:

- Total Water Requirement of the proposed project will be 70.0 KLD, out of which Water Consumption for Process will be 23.35 KLD.
- Worst Case Scenario for water consumption;

S. N	Product	Water Consumption (in KL) for 1 MT production	Total Production (MT/Month)	Total water req. (KLD)
1	Tadalafil	6.0 KL	50	10.02 KLD
2	Methyl-5-bromo-2-hydroxy-3-propanoylbenzoate	4.0 KL	100	13.3 KLD

	Hence Worst Case Considered is	23.35 KLD	

-

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	70.0	GIDC Water Supply Authority
Quantity to be recycled (B)	8.5	
Total fresh water requirement (C)	61.5	
Ensure Total water requirement = Fresh water + Recycled water i.e., A = B + C		

Reuse/Recycle details (KLD) with feasibility.
[Source of reuse & application area]

Source of waste water for reuse in KLD (From where it is coming)	Application area with quantity in KLD (Where it is used)	Characteristics of waste water to be reused (COD, BOD, TDS etc.)	Remarks regarding feasibility to reuse
8.5 KLD Steam Condensate will be re-use	Reused in Boiler + washing	pH	6.5-8.5
		TSS	200-250
		COD	200-300
		TDS	1000-1500

In case of no reuse/recycle of wastewater, Give brief note on justification as why no reuse/recycle.

- In Boiler 6.5 KL condensate recovery considered in the recycle.

D-3 Waste water generation (KLD)

Category	Waste water KLD	Remarks
(H) Domestic	4.50	
(I) Industrial		
Process	39.03	
Washing	8.00	
Boiler	3.45	
Cooling	1.41	
Others[Scrubber]	0.00	
Total Industrial waste water	51.89	
Total [A + B]	56.39	

Brief Note on worst case scenario for waste water generation(Qualitative and Quantitative):

- Total Waste Water Generation of the proposed project will be 56.39 KLD, out of which Waste Water Generation for Process will be 39.03 KLD.
- Worst Case Scenario for waste water generation;

S.N	Product	Waste Water Gen. (in KL) for 1 MT production	Total Production (MT/Month)	Total Waste water Gen. (KLD)	Characteristics

1.	Rivaroxaban	9.1 KL	50	15.2 KLD	----
2.	4-(2-Methoxy ethyl) Phenol	7.1 KL	100	23.8 KLD	---
Hence Worst Case Considered is				39.03 KLD	

Brief justification in case of no process effluent generation or no industrial effluent generation or no high concentration effluent generation from proposed project (Whichever is applicable).

- Not Applicable.
- There will be effluent generation. The detail has been furnished in water Balance.

QUALITATIVE AND QUANTITATIVE ANALYSIS OF EACH WASTE ETP

Sr. No.	Source of Waste Water Generation	Quantity in KL/Day	Parameter	Quality	Final load at ETP in Kg/day
1.	Boiler blow down [Effluent send to ETP II-Low COD]	3.45	pH	6.5-8.0	
			TSS	500-600 mg/L	2.07
			COD	200-300 mg/L	1.035
			TDS	2500-3000 mg/L	10.35
2.	Cooling Tower blow down [Effluent send to ETP II-Low COD]	1.41	pH	6.0-8.5	--
			TSS	600-700 mg/L	0.987
			COD	500-800 mg/L	1.128
			TDS	3500-4000 mg/L	5.64
3.	Washing [Effluent send to ETP II-Low COD]	8.0	pH	5.5-6.5	--
			TSS	1000-1500 mg/L	12.0
			COD	1000-1200 mg/L	9.6
			TDS	3000-4000 mg/L	32
4.	Process [Effluent send to ETP II-Low COD]	23.78	pH	4.5-5.5	--
			TSS	1000-1100 mg/L	26.15
			COD	13000-15000 mg/L	356.7
			TDS	8000-10000 mg/L	237.8
5.	Process [Effluent send to ETP I-High COD]	15.26	pH	3.0-5.0	--
			TSS	750-800 mg/L	12.208
			COD	45000-55000 mg/L	839.3
			TDS	50000-60000 mg/L	915.6
Total Industrial Effluent		51.89			

CHARACTERISTICS OF WASTEWATER BEFORE & AFTER TREATMENT:-ETP II

[EFFLUENT FROM UTILITIES + WASHING + PROCESS –LOW COD]

Sr. No.	Parameters	Unit	Before Treatment	After Primary Treatment	After Secondary Treatment	After Tertiary Treatment send to CETP-Dahej	Permissible Limit of CETP-Dahej

1.	pH	--	4.5-5.5	5.5-7.5	6.5-8.5	6.5-8.5	--
2.	T.S.S.	mg/l	1000-1100	200-250	150-200	100-150	100
3.	C.O.D.	mg/l	13000-15000	10,400-12000	2000-2400	2000-2400	3000
4.	T.D.S.	mg/l	8000-9000	8500-9500	9000-10000	9000-10000	10000

CHARACTERISTICS OF WASTEWATER BEFORE & AFTER TREATMENT:- ETP-II

[EFFLUENT FROM PROCESS]

Sr. No.	Parameters	Unit	Before Treatment	After Primary Treatment	Treated water will be send to CMEE for further treatment
1	pH	--	3.0-5.0	6.5-8.5	5.5-7.5
2	T.S.S.	mg/l	750-800	200-220	200-220
3	C.O.D.	mg/l	45000-55000	38200-46700	38200-46700
4	T.D.S.	mg/l	35000-40000	36500-41500	36500-41500

D-4 Mode of Disposal & Final meeting point

Domestic	:	Domestic waste water will be collected and treated into ETP I.
Industrial		
ETP I (Low COD)	:	Low COD Effluent generated from process will be mixed with Domestic, Utilities and Washing section will be treated into Effluent treatment plant [Primary + Secondary+ Tertiary] and after adequate treatment it will be send to CETP-Dahej for further treatment and disposal.
ETP II (High COD)	:	High COD Effluent generated from Process will be treated into Effluent treatment plant [Primary] and after adequate treatment effluent send to Common MEE for further disposal.
	:	Scrubbing water will be goes along with by product which will be sell to authorized end users registered under rule-9.

-
Clearly mention about final disposal

D-5 Treatment facilities

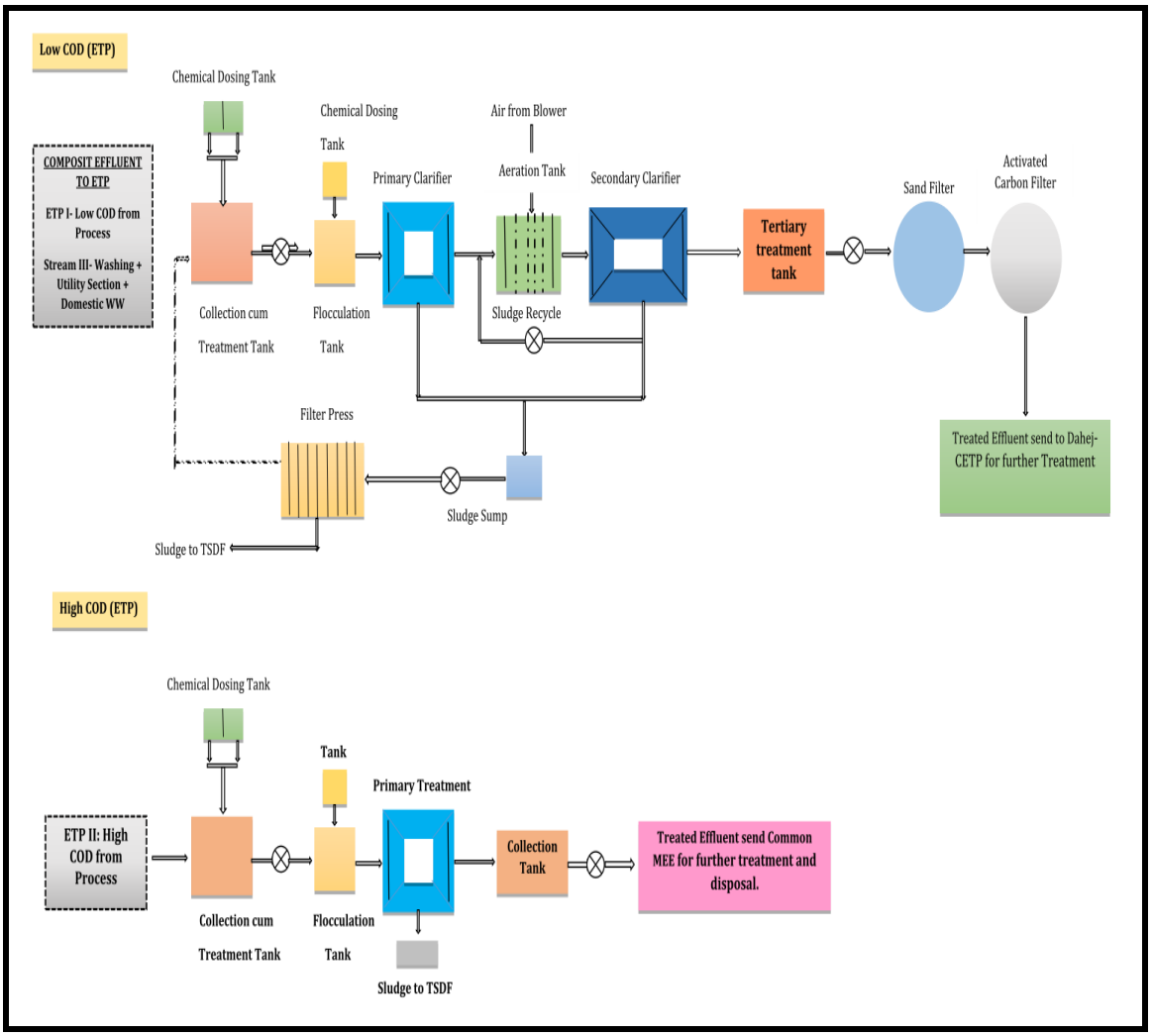
For Domestic waste water: Allow into ETP
Capacity of STP: Not Applicable

For Industrial waste water: Treatment facility within premises with capacity
[In-house ETP (Primary, Secondary, Tertiary), MEE, Stripper, Spray Dryer, STP etc.
Treatment scheme including segregation at source. (Give Characteristics of each stream i.e. COD, BOD, TDS etc.) In case of stream segregation, Separate ETP (ETP-1, ETP-2….) for each stream shall be proposed.
Treatment facility within premises with capacity
[In-house ETP (Primary, Secondary, Tertiary), MEE, Stripper, Spray Dryer, STP etc.

Domestic	:	Domestic waste water will be collected and treated into ETP I.
Industrial		
ETP I (Low COD)	:	Low COD Effluent generated from process will be mixed with Domestic, Utilities and Washing section will be treated into Effluent treatment plant [Primary + Secondary+ Tertiary] and after adequate

		treatment it will be send to CETP-Dahej for further treatment and disposal.
ETP II (High COD)	:	High COD Effluent generated from Process will be treated into Effluent treatment plant [Primary] and after adequate treatment effluent send to Common MEE for further disposal.
	:	Scrubbing water will be goes along with by product which will be sell to authorized end users registered under rule-9.

FLOW DIAGRAM OF EFFLUENT TREATMENT PLANT:-



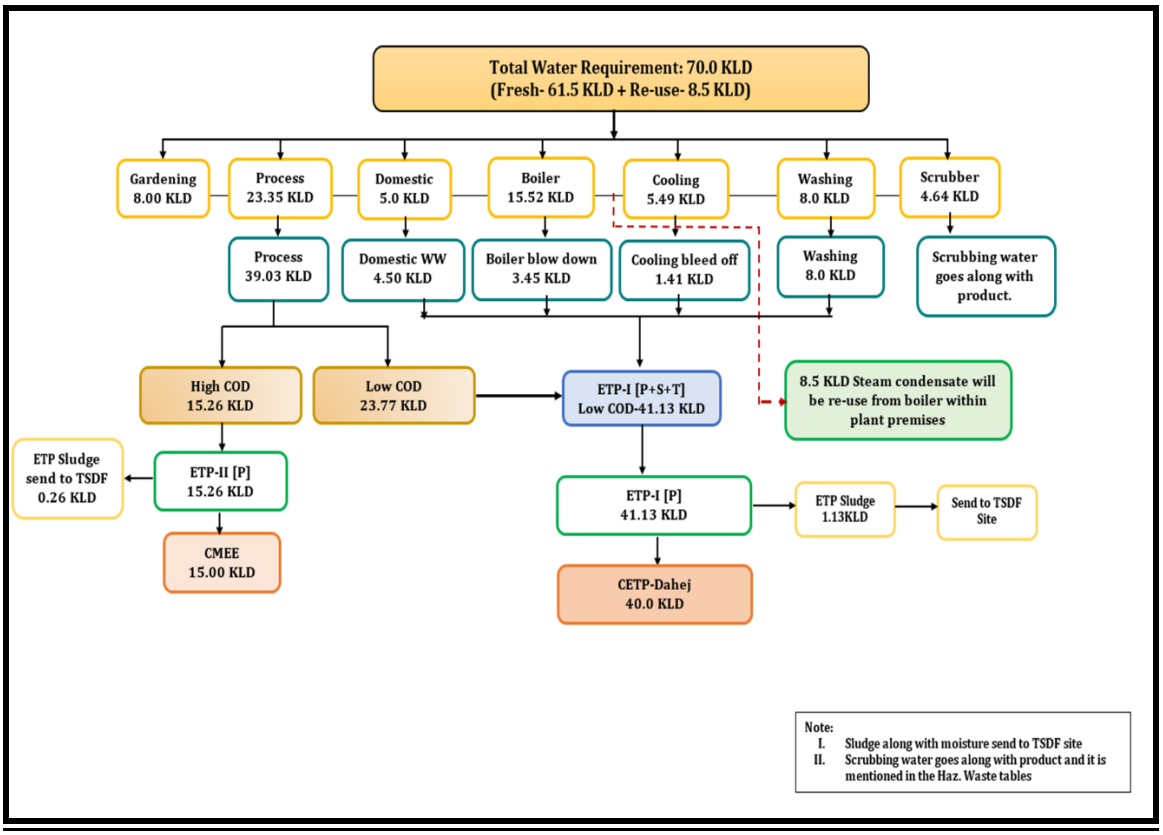
Management of waste water keeping in view direction under section 18 (1) (b) of the Water (Prevention and Control of Pollution) act, 1974 issued by CPCB regarding compliance of CETP. Applicable –

ETP I :- 41.13 KLD (Low COD)	:	Low COD Effluent generated from process will be mixed with Domestic, Utilities and Washing section will be treated into Effluent treatment plant [Primary + Secondary+ Tertiary] and after adequate treatment it will be send to CETP-Dahej for further treatment and disposal.

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

	ETP II:- 15.26 KLD (High COD)	:	High COD Effluent generated from Process will be treated into Effluent treatment plant [Primary] and after adequate treatment effluent send to Common MEE for further disposal.	

D-6	In case of Common facility (CF) i.e. CETP, Common Spray dryer, Common MEE, CHWIF etc. Name of Common facility (CF) (For waste water treatment)
	➢ Common Evaporation Facility- BEIL CMEE ➢ CETP-Dahej
	Membership of Common facility (CF) mentioning total capacity, consented quantity, occupied capacity and spare capacity and norms of acceptance of effluent from member units in-line with the direction given by GPCB vide Letter No. GPCB/P-1/8-G (5)/550706 dated 08/01/2020.
	➢ CMEE-BEIL
D-7	Simplified waterbalance diagram with reuse / recycle of waste water



E	AIR
E-1	Brief Note on fuel based Heat energy requirement and worst case scenario thereof:

SN	Fuel Based Heat Energy	Proposed Fuel	Calorific Value (kcal/kg)	Working Hours (Worst Case)	Fuel Consumption in worst case
1	Boiler (2.0 TPH)	Natural Gas	10000-12500 kcal/kg	24 Hrs	1720 SCM/Day
		OR			
		Briquette /	4000-4500 kcal/kg	24 Hrs	3.0 MT/Day

	Agro Waste				
2	Boiler (1.0 TPH)	Natural Gas	10000-12500 kcal/kg	24 Hrs	860 SCM/Day
		OR			
		Briquette / Agro Waste	4000-4500 kcal/kg	24 Hrs	1.5 MT/Day

E-2 Flue gas emission details

No. of Boilers/TFH/Furnaces/DG sets etc. with capacities viz. TPH, Kcal/hr, MT/hr, KVA etc.
(In case of Project located within CPA/SPA , APCM shall be in line to the mechanism published in the MOEFCC's OM vide dated 31.10.2019)

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/Day	Air Pollution Control Measures (APCM)	Type of emissions i.e. Air Pollutants
1	Boiler [Cap. 2 TPH]	30	Natural Gas OR Briquette / Agro Waste	1720 SCM/Day OR 3.0 MT/Day	Multi Cyclone Separator + Bag Filter + Water Scrubber	PM<150 mg/Nm^3 SO_2<100 ppm NO_x<50 ppm
2	Boiler [Cap. 1 TPH]	30	Natural Gas OR Briquette / Agro Waste	860 SCM/Day 1.5 MT/Day	Multi Cyclone Separator + Water Scrubber	
3	Thermic Fluid Heater [Cap. 4 lakh Kcal/Hr.]	30	Natural Gas OR Briquette / Agro Waste	950 SCM/Day 4 MT/Day	Multi Cyclone Separator + Bag Filter + Water Scrubber	
4	D.G. Set [Cap. 120 KVA]	15	Diesel	60 Lit./Day	Adequate Stack Height	

E-3 Process gas i.e. Type of pollutant gases (SO_2, HCl, NH_3, Cl_2, NO_x etc.)

Sr. no.	Specific Source of emission (Name of the Product & Process)	Stack/ Vent Height (meter / DIA)	Type of emission	Air Pollution Control Measures (APCM)
1.	Reaction Vessel-I [HCl: Product no. 3,5,7,15,41,61,62,64,69,72]	20	Two Stage Scrubber (Water Scrubber + Alkali Scrubber)	HCl
2.	Reaction Vessels-II [NH_3: From Product No. 53]	20	Two Stage Acidic Scrubber	NH_3
3.	Reaction Vessels-III [HBr: From Product No. 4,44,55,57,62]	20	Two stage Alkali scrubber	HBr, SO_2

			[SO2: From Product no.3,5,59]			

Note:

- Details of gaseous raw materials used in proposed project
- Estimation of process gas emission (Product wise and Total)
- Requirement of the scrubbing media (KL per Day) considering solubility (Product wise and Total)
- Yearly generation of all bleed liquors (MT/KL per Annum) as mentioned above and its sound management in HW matrix.

E-4	Fugitive emission details with its mitigation measures. - Whole process will be carried out in close loop. - Pipe line will be having minimum flange. - Pump with double mechanical seals - Proper ventilation.
F	Hazardous waste (As per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016. Note: ➢ Priorities for HW Management: Pre-processing, Co-Processing, Reuse/Recycle within premises, Sell out to actual users having Rule-9 permission, TSDF/CHWIH. ➢ Quantification of hazardous waste shall be based on mass balance and calculations shall be incorporated in EMP details separately. ➢ Disposal to scrap vendors/vendors/traders is not allowed
F-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.	Empty barrels/ containers/liners contaminated with hazardous chemicals /wastes	Raw Material and Packaging	33.1	150	Collection, Storage, Transportation, Decontamination, reuse or send back to supplier, and sold to Authorized end users registered under rule-9.
2.	Used or Spent Oil	From Machinery	5.1	1.0	Collection, Storage, Transportation and sold to authorized Recyclers.
3.	ETP Sludge	ETP	35.3	500.4	Collection,

		5.	Process Waste	From Product No. 14,58 Max generation from Felbinac, 4-(2-Methoxy ethyl) Phenol	28.1	339	Storage, Transportation and sent to TSDF site. (Through GPS mounted vehicle)	
		6.	Hyflow	From Product No. 14,32 Max generation form Felbinac	28.1	47		
		7.	Distillation Residue	From Product 1 to 3, 5 to 10, 12 to 15, 18 to 25, 30 to 41,43 to 46,48 50 to 52,54 to 66, 68 to 74 Max generation from Terbinafine HCL, (+/-)-trans-4-(4-Fluorophenyl)-3-(hydroxymethyl)-1-methyl piperidine	20.3	208	Collection, Storage, transportation and sent for co-processing in cement industries or disposal at common incineration at CHWIF. (Through GPS mounted vehicle)	
		8.	Spent Carbon	From Product 10,13,14,16, 19 to 21,24, 26 to 30,33,36, 40,41,50,52,64 Max generation from Diacereine, Dibenzo[b,f][1,4]Thiazepin-11[10H]-One	28.3	87		
		9.	Spent Catalyst	From Product no 40,58,66 Max generation fromRabeprazole Sodium, N-octyl d-glucamine	28.2	54	Collection, Storage, transportation and sent for co-processing in cement industries or disposal at common incineration at CHWIF. (Through GPS mounted vehicle)	
		10.	Off specification Products	Process	28.4	20		
		11.	Sodium Bromide [NaBr] Sol. [30-40%]	Scrubber & Product No 4,44,55,57,62 Max generation fromBronopol, 2-n-Butyl Benzofuran	--	2372	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.	

		12.	Sulfuric Acid [H_2SO_4] Sol. [60-70%]	From Product no 12 Max generation fromEthopabate	SCH-II-/ B(15)	60		
		13.	Ammonium Sulfate Sol.[30-40%]	From Product no 53 Max generation from2,2-Dimethoxyethanamine	---	391		
		14.	HCl Sol. [28-33%]	From Product no 3,5,7,15,41,61,62,64,69,72 Max generation from BenidipineHCl, Para Chloro Benzo Phenone	SCH-II-/ B(15)	1152	Collection, Storage, and reused in manufacturing process and/or Collection, Storage, Transportation and sell to authorized end users registered under rule-9.	
		15.	Sodium Bisulfite Sol. [$NaHSO_3$ Sol.] [30-35%]	Scrubber & Product No.3,5,59 Max generation fromBenidipineHCl, Bis-(2-chloroethyl amine)hydrochloride	---	1493	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.	
		16.	$AlCl_3$ Solution [30-35%]	From Product no 72 Max generation from 1-(2,4-Difluorophenyl)-2-(1H-1,2,4-triazol-1-yl)ethanone	---	534	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.	
		17.	Spent Solvent	From Product 1 to 3, 5 to 15, 18 to 25, 30 to 46, 48, 50 to 66, 68 to 75	20.2	3044	Collection, Storage, Recovery and Recycle for manufacturing of product.	
		18.	Sodium Hypo chlorite Solution	APCM Scrubber	--	60	Collection, storage and utilised into ETP for further Treatment.	
F-2	Membership details of TSDF, CHWIF etc. (For HW management)							
	Details of Membership letter no. & Date with spare capacity of the Common Facility. Unit will obtain soon.							
F-3	Details of Non-Hazardous waste & its disposal (MSW and others)					Fly Ash		

		1.	Fly ash	Boiler (Agro waste/briquettes)	--	100	Collection, storage, transportation & send to Brick manufacturer.	

G Solvent management, VOC emissions etc.

- All the solvents shall be directly distilled from product mixes and; if required shall be purified in packed column with the help of reflux.
- The solvent distillation system shall be designed so as to achieve minimum 95.0 % recovery of solvent.
- All the pumps shall be mechanical seal type to avoid any leakage of solvent.
- All necessary firefighting systems shall be provided with alarm system. Flame proof wiring and flame proof electrical accessories shall be provided to avoid any mishap.
- All the distillation column vents are also connected to cooling water/ chilled brine condensers for maximum possible recovery of the solvents.
- All the vents will be connected to a common carbon Absorber for removing traces of solvent from vent gases.
- Residue generated from the distillation will be incinerated in-house or sent to BEIL incinerator site.
- Two condenser will install with cooling water and chilled brine to recover the solvent.
- Primary Condenser HE-01: Cooling Tower water or Chilled water at 10 ^{0}C -will be used to condense the solvents depend on the vapor pressure at its operating conditions and the non-condensed vapors will be condensed in a Secondary Condenser

VOC Trap Condenser HE-02: Chilled Brine at -05 ^{0}C will be used to trap any traces of Solvent, which is slipped from Secondary condenser.

G-1 Brief Note on types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.

Sr. No.	Product	Solvent	Boiling point	Fresh Qty MT/ Month	Recover Qty MT /Month	% Rec.
1	Adapalene	IPA	82.5 °C	10.00	9.60	96.00
		MDC	39.6 °C	15.00	14.50	96.67
		Methanol	64.7 °C	5.00	4.80	96.00
2	Alpha Lipoic Acid	Toluene	110.6 °C	94.50	91.67	97.00
		MDC	39.6 °C	125.50	121.74	97.00
3	Atovaquone	Acetone	56 °C	10.00	9.60	96.00
5	BenidipineHCl	IPA	82.5 °C	15.00	14.50	96.67
		Toluene	110.6 °C	10.00	9.60	96.00
		MDC	39.6 °C	7.50	7.25	96.67
6	Cetirizine hydrochloride	Toluene	110.6 °C	11.00	10.67	97.00
		DMF	153 °C	11.00	10.67	97.00
		Acetone	56 °C	7.50	7.28	97.00
7	Clotrimazole	Acetone	56 °C	45.00	44.00	97.78
8	Dapagliflozin	THF	66 °C	9.38	8.81	94.00
		Isopropyl Acetate	89 °C	10.42	10.00	96.00
		Heptane	98.42 °C	8.85	8.41	95.00
		MDC	39.6 °C	8.33	8.08	97.00
		Iso Propyl Alcohol	82.5 °C	12.50	12.00	96.00
		Methanol	64.7 °C	10.42	9.90	95.00
		Ethyl acetate	77.1 °C	10.42	10.10	97.00
		Cyclohexane	80.75 °C	12.50	11.88	95.00
9	Desloratidine	Cylcohexane	80.75 °C	10.00	9.60	96.00
		Methanol	64.7 °C	10.00	9.60	96.00
		Toluene	110.6 °C	12.00	11.52	96.00
10	Diacereine	Methanol	64.7 °C	103.09	99.48	96.50
11	Diclofenac Sodium	Toluene	110.6 °C	43.75	41.56	95.00
		Sodium Methoxide	350 °C	37.57	36.44	97.00
12	Ethopabate	Toluene	110.6 °C	19.50	18.92	97.00
13	Etoricoxib	Toluene	110.6 °C	20.00	19.20	96.00

14	Felbinac	Methanol	64.7 °C	96.15	91.35	95.00
15	Fluconazole	EDC	83.47 °C	32.50	31.53	97.00
		Toluene	110.6 °C	75.00	72.75	97.00
		IPA	82.5 °C	35.00	33.95	97.00
16	Glimepiride	Methanol	64.7 °C	36.50	35.77	98.00
		Acetone	56 °C	72.99	71.17	97.50
17	Lercanidipine	Toluene	110.6 °C	49.32	48.09	97.50
		Methanol	64.7 °C	24.66	24.17	98.00
		Methylene dichloride	39.6 °C	24.66	22.93	93.00
18	Levocetirizine Hydrochloride	Triethyl Amine	89.28 °C	25.64	25.13	98.00
		Toluene	110.6 °C	25.64	25.00	97.50
		MDC	39.6 °C	23.08	22.38	97.00
		Acetone	56 °C	20.51	19.90	97.00
19	Lidocaine	Diethyl Amine	55.5 °C	20.00	19.20	96.00
		Toluene	110.6 °C	25.00	24.00	96.00
20	Linezolid	Ethyl acetate	77.1 °C	13.00	12.48	96.00
		Ethylene Dichloride	83.47 °C	14.50	14.07	97.00
21	Lornoxicam	O-Xylene	144 °C	10.00	9.60	96.00
		Methanol	64.7 °C	15.00	14.50	96.67
22	Losartan Potassium	Methanol	64.7 °C	20.00	19.20	96.00
23	Luliconazole	Methanol	64.7 °C	64.10	63.14	98.50
24	Meloxicam	O - Xylene	144 °C	30.00	28.80	96.00
		Isopropyl Alcohol	82.5 °C	8.35	8.10	97.00
		Acetic Acid	118 °C	25.00	24.00	96.00
25	Metoclopramide base	Toluene	110.6 °C	15.50	14.73	95.00
		IPA	82.5 °C	10.00	9.70	97.00
26	Metoclopramide hydrochloride	Isopropyl alcohol	82.5 °C	113.64	110.00	96.80
27	Metoprolol succinate	Isopropyl alcohol	82.5 °C	100.00	99.00	99.00
28	Metoprolol tartarate	Isopropyl alcohol	82.5 °C	100.00	99.00	99.00
29	Metoprolol hydrochloride	Isopropyl alcohol	82.5 °C	15.00	14.40	96.00
30	Nebivolol hydrochloride	Methanol	64.7 °C	25.00	24.38	97.50
		Isopropyl alcohol	82.5 °C	18.75	18.25	97.33
31	Ondansetron hydrochloride	Isopropyl alcohol	82.5 °C	125.00	120.00	96.00
32	Oxcarbazepine	Methanol	64.7 °C	50.00	48.50	97.00
		MDC	39.6 °C	30.00	29.10	97.00
33	Palenesetron hydrochloride	Hexane	69 °C	13.00	12.48	96.00
		THF	66 °C	11.00	10.67	97.00
		IPA	82.5 °C	12.50	12.13	97.00
		Ethyl Acetate	77.1 °C	13.25	12.85	97.00
34	Pantoprazole Sodium	MDC	39.6 °C	15.00	14.55	97.00
		Acetone	56 °C	10.00	9.60	96.00
		Ethyl acetate	77.1 °C	12.00	11.52	96.00
35	PerindropilErbumine	Methylene dichloride	39.6 °C	29.07	28.20	97.00
		Isopropyl alcohol	82.5 °C	48.45	47.00	97.00
36	Phenylephrine Hydrochloride	Methanol	64.7 °C	11.00	10.56	96.00
		Chloroform	61.2 °C	6.50	6.24	96.00
		IPA	82.5 °C	16.00	15.36	96.00
		L(+) Tartaric acid	399.3 °C	10.00	9.60	96.00
		Acetone	56 °C	6.00	5.76	96.00
37	Pregabaline	Iso Propyl	82.5 °C	20.00	19.40	97.00

		alcohol				
		Methanol	64.7 °C	10.00	9.70	97.00
		Chloroform	61.2 °C	16.00	15.52	97.00
38	Prilocaine	Methylene Dichloride	39.6 °C	51.60	49.54	96.00
		N - Propylamine	47.8 °C	25.00	24.00	96.00
		Hexane	69 °C	22.50	21.60	96.00
39	Prochlorperazine Maleate	Toluene	110.6 °C	7.50	7.28	97.00
40	Rabeprazole Sodium	Methanol	64.7 °C	11.63	11.16	96.00
		MDC	39.6 °C	5.81	5.58	96.00
		Ethyl acetate	77.1 °C	6.98	6.70	96.00
		Cyclohexane	80.75 °C	9.30	8.93	96.00
		Ethanol	78.37 °C	5.81	5.58	96.00
		Di-isopropyl ether	69 °C	11.63	11.16	96.00
		Toluene	110.6 °C	6.98	6.70	96.00
41	Rivaroxaban	Toluene	110.6 °C	12.50	12.13	97.00
		Xylene	139 °C	5.00	4.85	97.00
		Methanol	64.7 °C	15.00	14.55	97.00
		Methylene chloride	39.6 °C	12.50	12.13	97.00
		Acetone	56 °C	15.00	14.55	97.00
43	Tadalafil	Methylene dichloride	39.6 °C	71.81	68.58	95.50
		Methanol	64.7 °C	17.29	17.03	98.50
44	Tamsulosine hydrochloride	IPA	82.5 °C	10.00	9.60	96.00
		Methanol	64.7 °C	25.00	24.25	97.00
45	Terbinafine HCL	Toluene	110.6 °C	50.00	48.00	96.00
		Isopropyl Alcohol(IPA)	82.5 °C	45.00	43.20	96.00
46	Tolperisone Hydrochloride	Toluene	110.6 °C	54.05	53.24	98.50
		Isopropyl alcohol	82.5 °C	23.78	23.51	98.86
47	Topiramate	Ethylene dichloride	83.47 °C	50.76	49.75	98.00
48	Trifluoperazine hydrochloride	Toluene	110.6 °C	11.10	10.66	96.00
		Ethyl acetate	77.1 °C	11.00	10.67	97.00
49	Voriconazole	Methylene dichloride	39.6 °C	32.89	32.01	97.30
		Tetra hydrofuran	66 °C	27.41	26.10	95.20
50	Vildagliptin	DMF	153 °C	10.00	9.60	96.00
		IPA	82.5 °C	5.00	4.80	96.00
51	(+/-)-trans-4-(4-Fluorophenyl)-3-(hydroxymethyl)-1-methyl piperidine	Toluene	110.6 °C	16.00	15.52	97.00
		Ethanol	78.37 °C	10.00	9.70	97.00
		n-Heptane	98.42 °C	5.00	4.85	97.00
		THF	66 °C	10.00	9.70	97.00
		DIPE	69 °C	9.00	8.64	96.00
		Ethyl acetate	77.1 °C	10.00	9.60	96.00
52	3 – Carbomoyl methyl – 5 – Methyl Hexanoic Acid	Toluene	110.6 °C	25.00	24.00	96.00
56	2-n-Butyl-3(4-Hydroxy Benzoyl) Benzofuran	Methanol	64.7 °C	119.76	115.57	96.50
57	3-(3-chloro propyl)-7,8-dimethoxy-1,3-dihydro-2H-3-benzazepin-2-one	Methanol	64.7 °C	20.00	19.20	96.00

58	4-(2-Methoxy ethyl) Phenol	Ethylene dichloride	83.47 °C	66.67	63.33	95.00
		Methanol	64.7 °C	58.33	55.42	95.00
59	Bis-(2-chloro ethyl amine) hydrochloride	EDC	83.47 °C	50.00	48.00	96.00
		Acetone	56 °C	20.00	19.40	97.00
60	2-Amino 5-Methyl Thiazole	Toluene	110.6 °C	50.00	48.00	96.00
61	Dimethyl aminoethylchloride hydrochloride	Ethylene dichloride	83.47 °C	200.00	196.00	98.00
		Isopropyl alcohol	82.5 °C	50.00	49.00	98.00
62	Methyl-5-bromo-2-hydroxy-3-propanoylbenzoate	EDC	83.47 °C	20.00	19.20	96.00
63	Ketosulfone	Tetrahydrofuran	66 °C	90.00	87.30	97.00
64	Dibenzo[b,f][1,4]Thiazepin-11[10H]-One	Ethanol	78.37 °C	62.50	60.63	97.00
65	N,N-Diethyl Ethylene Diamine	Toluene	110.6 °C	100.00	97.50	97.50
66	N-octyl d-glucamine	Methanol	64.7 °C	133.33	129.33	97.00
68	Para ChloroBenzhydryl Piperazine	Toluene	110.6 °C	96.00	94.08	98.00
69	Para Chloro Benzo Phenone	Methanol	64.7 °C	60.00	57.60	96.00
70	Ethyl cyanoacetate	Toluene	110.6 °C	30.00	29.10	97.00
		Ethanol	78.37 °C	35.00	33.95	97.00
71	2-[(dimethyl amino) methyl] cyclohexanone hydrochloride	IPA	82.5 °C	50.00	49.00	98.00
72	1-(2,4-Difluorophenyl)-2-(1H-1,2,4-triazol-1-yl)ethanone	EDC	83.47 °C	22.22	21.56	97.00
73	Valero Nitrile	DMSO	189 °C	30.00	28.50	95.00
74	5-(4'-Bromomethyl-1, 1'-Biphenyl-2-YL)-1-TriphenylmethyL-1H-Tetrazole (TTBB)	Toluene	110.6 °C	21.00	20.26	96.48
		MDC	39.6 °C	25.00	24.12	96.48
		Methanol	64.7 °C	13.00	12.61	97.00
		Ethyl acetate	77.1 °C	10.00	9.60	96.00

G-2 Brief Note on LDAR proposed:

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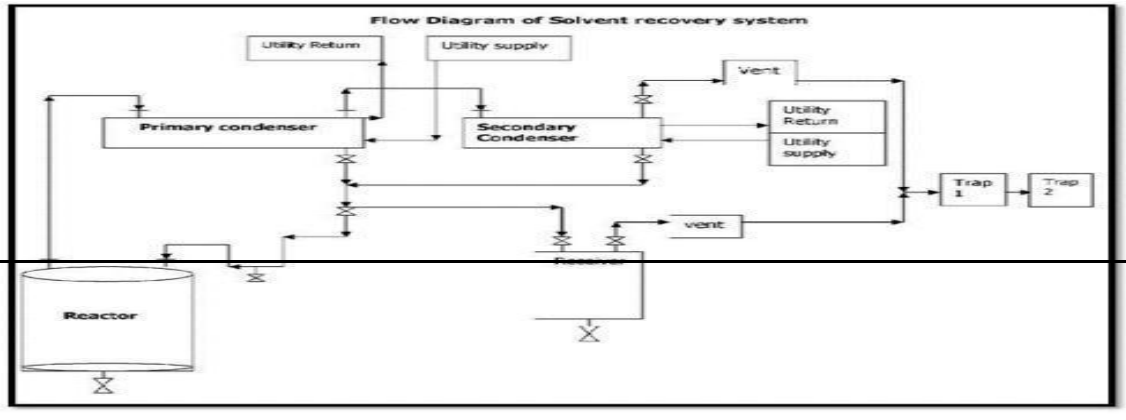
- Leak Free Pumps for transfer of solvents
- MSW Gaskets in solvent pipelines to prevent leakage from flanges
- Minimum number of flanges, joints and valves in pipelines.
- To eliminate chances of leakages from glands of pumps, mechanical seal will be provided at all solvent pumps.
- All the rotating equipments like pumps will be installed with Mechanical Seals to arrest any sort of emissions.
- Condenser and scrubber post Reactor with cooling arrangement
- Enclosures to chemical storage area, collection of emission from loading of raw materials in particular solvents through hoods and ducts by induced draft, and control by scrubber / dust collector to be ensured.



	• 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 inflammable liquid, switch off all the power supply in the area to prevent Electric Spark • Flanges will be sealed so less loss will be there. Two condensers will be installed with cooling water and chilled brine to recover the solvent. Primary Condenser HE-01: Cooling Tower water or Chilled water (at 5^0C) will be used to condense the solvents depend on the vapor pressure at its operating conditions and the non-condensed vapors will be condensed in a Secondary Condenser VOC Trap Condenser HE-02: Chilled Brine at -15 ^{0}C will be used to trap any traces of Solvent which is slipped from Secondary condenser. <u>Monitoring of Solvent Losses</u> Inwarding, 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 to prevent 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 emissions of VOCs. Following frequency of monitoring of leaks and schedule for repair of leaks shall be followed: Immediate Repair of devices in case of Leakages A regular preventive maintenance schedule will be in place to replace or rectify all gaskets and joints to ensure no fugitive emissions shall take place. Plant shall also maintain adequate number of spares and consumables required to repair the leaking device Plant shall also have competent contractor team to handle Leakages and can repair the same immediately Standby equipments like Pumps, valves etc. shall be kept basis the criticality and usage Plant shall also have access equipments like Boom lift to handle leakages at height immediately
G-3	VOC emission sources and its mitigation measures
	➢ 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 any sort of emissions.
- Condenser and scrubber post Reactor with cooling arrangement.
- Enclosures to chemical storage area, collection of emission from loading of raw materials in particular solvents through hoods and ducts by induced draft, and control by condenser 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 inflammable liquid, switch off all the power supply in the area to prevent Electric Spark.
- Two condensers will install with cooling water and chilled brine to recover the solvent.
- Primary Condenser HE-01: Cooling Tower water or Chilled water at 5 °C will be used to condense the solvents depend on the vapor pressure at its operating conditions and the non-condensed vapors will be condensed in a Secondary Condenser.
- VOC Trap Condenser HE-02: Chilled Brine at -15 °C will be used to trap any traces of Solvent which is slipped from Secondary condenser.
- Emission of VOCs can be trapped from breathing and loading losses from storage tanks, venting of process vessels, leak from piping and equipment by means of hood connected with blower and send to condenser as shown in following diagram.
- Condensed VOCs will be send to spent solvent recovery plant.

H	SAFETY details
H-1	Details regarding storage of Hazardous chemicals (For tank storages only including spent acid and spent solvent tanks

S. N.	Name of chemical	Quantity (Nos.)	Total (Nos.)	Total Qty. to be store (KL)
Non-PESO solution				
1	Sulphuric Acid	10 KL	1 Nos.	9.33 KL
2	Nitric Acid	5 KL	1 Nos.	3.03 KL
3	Hydrochloric Acid	10 KL	1 Nos.	7.51 KL
PESO Solution-Drum				
1	Acetic acid	250 Lit	16 Nos.	4 Kl
2	Acetone	250 Lit	31 Nos.	7.88 Kl
3	Chloroform	250 Lit	45 Nos.	11.33 Kl
4	DMF	250 Lit	41 Nos.	10.50 Kl
5	EDC	250 Lit	9 Nos.	2.33 Kl
6	Ethanol	250 Lit	28 Nos.	7 Kl
7	Ethyl acetate	250 Lit	37 Nos.	9.33 Kl
8	IPA	250 Lit	33 Nos.	8.17 KL
PESO Solution-Tank				
9	MDC	30 KL	1 Nos.	29.28 KL
10	Methanol	15 KL	1 Nos.	13.64 KL
11	Toluene	30 KL	1 Nos.	22.05 Kl
Bank-(Set Of Cylinder)				
1	Hydrogen	60 kg X 6 Nos.	6 Nos.	0.35 KL

Brief note on storage of Hazardous chemicals in Tanks

Brief note on storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.

Safety Measures for Drum Storage area:

- Some chemicals will be received at plant in drums by road truck and stored in a separate drum storage area.
- FLP type light fittings will be provided.
- Proper ventilation will be provided in go down.
- Proper label and identification board /stickers will be provided in the storage area.
- Conductive drum pallets will be provided.
- Drum handling trolley / stackers/fork lift will be used for drum handling. Separate dispensing room with local exhaust and static earthing provision will be made.
- Materials will be stored as per its compatibility study and separate area will be made for flammable, corrosive and toxic chemical drums storage.
- Smoking and other spark, flame generating item will be banned from the Gate.

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
PESO Tank	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. o Provided with external anti-corrosive coating or cathodic protection to prevent corrosion ; o 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; o 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; o 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 unloading 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.	
		Non PESO tank	Safety measures for Acid storage Tank: ✓ 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 pipe line. ✓ Dyke wall will be provided to all storage tanks, collection pit with valve provision. ✓ Double drain valve will provided. ✓ 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. Safety Measures of Non PESO Tank ✓ Leakage / spillage mitigation plan ✓ Tank shall be rubber lined to prevent the corrosion ✓ Dyke wall shall be provided for containment ✓ Rubber type hand gloves and chemical splash goggles and full-face cartridge type mask and PVC apron shall be used while manual handling ✓ Lime shall be readily available during leak to neutralize	

		the spill material ✓ Safety shower, eye wash with quenching unit will be provided in acid storage area. ✓ Material will be handled in close condition in pipe line. ✓ Double drain valve will provided. ✓ Level gauge will be provided on all storage tanks. ✓ Fire hydrant system with jockey pump as per TAC norms will be installed	
	Applicability of PESO: Yes.		
H-2	Types of hazardous Processes involved and its safety measures: (Hydrogenation process, Sulphonation, Chlorination process, Bromination Reaction etc.)		
	Type of Process	Safety measures including Automation	
	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. ➢ 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.	

	Hydrogenation	➢ DCS base process controls and operation of plant will be installed. ➢ All electrical equipment's shall be installed as per Hazardous Area Classification. ➢ Total enclosed process system. ➢ Instrument & Plant Air System. ➢ Nitrogen blanketing in Hydrogenation reactor. ➢ Emergency dumping vessel will be provided during unforeseen circumstances. ➢ Safety valve and Rupture disc provided on reactor. ➢ Cooling, Chilling and alternate power arrangement have been made on reactor. ➢ Process area and Hydrogen cylinder bank shall be far away as per standards practice. ➢ PRV station with shut off valve, safety valve provision will be made for hydrogenation reaction safety. ➢ Standard Operating procedure shall be followed during operation of Hydrogen Gas charging in to reactor and after completion of reaction Nitrogen purging will be done. ➢ Flame arrestor will be provided on vent line of reactor and it will be extended above the roof level. ➢ Safe Catalyst charging method will be adopted. ➢ SOP will be displayed and operators will be trained for the same. ➢ Static earthing and electric earthing (Double) will be provided. ➢ Jumpers for static earthing on pipeline flanges of flammable chemical will be provided. Hydrogen gas detector will be installed for early detection of gas leak.

H-3 Details of Fire Load Calculation

Total Plot Area:	11307.42 Sq.m.
Area utilized for plant activity:	5284 sq.m
Area utilized for Hazardous Chemicals Storage:	2510 sq. m
Number of Floors:	G+2
Water requirement for firefighting in KLD :	100000Litres
Water storage tank provided for firefighting in KLD:	3,50,000 Litres
Details of Hydrant Pumps:	--
Nearest Fire Station :	Fire Station
Applicability of Off Site Emergency Plan:	15 Km

H-4 Details of Fire NOC/Certificate:

Will be applied

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

Number of permanent Employee :	50 Employees
Number of Contractual person/Labour :	10 Employees

		Area provided for OHC:	120 Sq. m.	
		Number of First Aid Boxes :	20	
		Nearest General Hospital :	-	
		Name of Antidotes to be store in plant :	Artificial respiration, First Aid, etc.	

- During the SEAC Video conference meeting dated 07.01.2022, Project Proponent (PP) and their technical expert and EIA consultant from M/s. Ecopreneur Incorporate remains present and made technical presentation before the Committee.
- Deliberation of the Committee:
  - ✓ GIDC plot allotment letter for proposed project is reviewed.
  - ✓ Product profile with its end use discussed in depth.
  - ✓ Site Plan/ layout with fire plan & floor plans and provision of separate entry & exits, peripheral road, distillation area, OHC, tank farm, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, fresh & spent solvent storage areas, hazardous waste storage area, 33% greenbelt within premises etc.
  - ✓ Source of water will be GIDC.
  - ✓ Domestic Waste water will be treated in ETP.
  - ✓ Total waste water will be segregated and high COD stream will be treated in primary ETP and then sent to Common facility of CMEE of M/s. BEIL. While low COD stream will be sent to CETP after inhouse ETP treatment.
  - ✓ Natural gas or Briquette of Agro waste is proposed as fuel in boiler and TFH.
  - ✓ Two Stage Scrubber system is proposed for control of process gas emission.
  - ✓ PP submitted hazardous waste matrix mentioning source of generation, quantity and Mode of disposal and committed to comply the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
  - ✓ Fire hydrant plan, fire load calculation, Water balance diagram, storage of Hazardous chemicals and its safety and Area adequacy was discussed.
  - ✓ CER fund allocation, EMP, Green belt area was discussed.
- Looking to following documents not submitted by PP, Committee insisted for submission of it along with justification regarding proposal,
  A. Submit GIDC plot allotment letter with mentioning its purpose for API manufacturing.
  B. Submit revised layout plan with mentioning PESO tank farm area, non PESO tank farm area and storage of hazardous chemicals considering its type of hazard and compatibility chart and also

mentioning area adequacy considering storage of chlorine, bromine, hydrogen, Ammonia and various solvents with land break up.

C. Submit CETP membership certificate for proposed waste water quantity of GIDC Dahej.

D. Technical clarification regarding storage of ammonia mentioned in cylinder of 900 kg and revised storage details of ammonia considering worst case scenario for usage as raw material for proposed project.

E. Risk assessment of chlorine, , bromine, hydrogen, Ammonia and various solvent like methanol, toluene and other Hazardous chemicals storage & its handling considering worst case scenario of any blast, leakage or fire and super impose of satellite image for dispersion model with mentioning its impact on surrounding village's residential habitat area and its mitigation measures. Also standard operating procedure (SOP) for handling and storage of oleum and emergency spare storage tank for chlorine, , bromine, hydrogen, Ammonia and various solvent like methanol, toluene and other Hazardous chemicals storage and details of offsite emergency plan details considering population affected due to proposed Hazardous chemicals storage along with its remedial measures.

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

1. Submit GIDC plot allotment letter with mentioning its purpose for API manufacturing.
2. Submit revised layout plan with mentioning PESO tank farm area, non PESO tank farm area and storage of hazardous chemicals considering its type of hazard and compatibility chart and also mentioning area adequacy considering storage of chlorine, bromine, hydrogen, Ammonia and various solvents with land break up.
3. Submit CETP membership certificate for proposed waste water quantity of GIDC Dahej.
4. Technical clarification regarding storage of ammonia mentioned in cylinder of 900 kg and revised storage details of ammonia considering worst case scenario for usage as raw material for proposed project.
5. Risk assessment of chlorine, , bromine, hydrogen, Ammonia and various solvent like methanol, toluene and other Hazardous chemicals storage & its handling considering worst case scenario of any blast, leakage or fire and super impose of satellite image for dispersion model with mentioning its impact on surrounding village's residential habitat area and its mitigation measures. Also standard operating procedure (SOP) for handling and storage of oleum and emergency spare storage tank for chlorine, , bromine, hydrogen, Ammonia and various solvent like methanol, toluene and other Hazardous chemicals storage and details of offsite emergency plan details considering population affected due to proposed Hazardous chemicals storage along with its remedial measures.

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.	Dr. M. N. Patel, Member, SEAC	
4.	Shri D. C. Chaudhari, Member, SEAC	
5.	Shri J. K. Vyas, Member, SEAC	
6.	Shri Anand Zinzala, Member, SEAC	
7.	Shri B. M. Tailor, Member, SEAC	
8.	Shri A. V. Shah, Secretary, SEAC	