

Minutes of the 381st meeting of the State Level Expert Appraisal Committee held on 15th March 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 15/03/2022 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.

01	SIA/GJ/IND3/234413/2021	Chenico Pharmachem Pvt. Ltd. Manibhai Shankarbhai Khari, Nava Khanpur, Survey No. 79/2, Taluka & Dist. Anand via Sarsa-388365	EC
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Category of the unit: **5 (f)**

Project status: **New**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	SIA/GJ/IND3/234413/2021
1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	18.01.2022
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. &Date :	Not applicable as project is categorized as B2
1.7. Technical expert / Environmental Consultant :	M/s Green Circle Inc.
1.8. SEAC Meeting No. and Date:	381 st meeting dated 15.03.2022
1.9. Compliance of Existing EC & CCA	N.A

2) This is a new project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

Product Table

Sr. No.	Name of the Product	Quantity(MT/M)	CAS No. (Product)	Type/ Category of Product (API/ Intermediate)	Name of API in which Intermediate Used/ End use of said Intermediate	Stage of intermediate n-1, n-2, etc	Said API is used for/End Use of said API
1.	Nicotine Derivative	20	54-11-5	API	Smoke cessation	NA	Smoke cessation
TOTAL (GROUP – 1)						20 MT/Month	

- 3) 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.
- 4) The proposal was considered in the SEAC video conference meeting dated 15.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) PP submitted satellite map showing that there is no any water bodies, villages, School, monuments etc. within 500 m radius of the project site. Aerial distance of nearest habitat of village Nava Khanpur is @ 500 m. PP also submitted that there are no Eco sensitive zones, wild life sanctuaries within the 500 m

area from the boundary of the project site.

- 8) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 1223(E) dated 27.03.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.
- 9) Committee noted that PP presented that the aerial distance of nearest habitat of Village Nava Khanpur is exact 500 meter from the proposed project site. Committee felt that, looking to the satellite image of the proposed site there may be habitats within 500 m radius of the proposed site.
- 10) Justification for proposed product in line to the MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as category B2 projects is not satisfactory.
- 11) Committee also noted that there no clarity regarding purpose of the land i.e. NA permission with purpose Chemical manufacturing.
- 12) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details		
A-1	Project cost			
	Total cost of Proposed Project Twelve Crores only (Rs. in Crores):			
	<table border="1"> <tr> <td>Total Project</td> </tr> <tr> <td>Rs. 12 Crores</td> </tr> </table>		Total Project	Rs. 12 Crores
Total Project				
Rs. 12 Crores				
A-2	Details of CER -			
	PP shall carry out CER activities as below: <ul style="list-style-type: none"> ✓ Water cooler with RO will be providing in the Schools of Shree Saraswati vidhya mandir, Kherda & Bhoipura School ✓ Provisions of equipments like, stretcher, wheelchair, blood testing kit, BP monitoring machine at primary health center at Nearby Villages. 			
B	Land / Plot ownership details:			
	- Survey No. 106/1,17/2			
B-1	Plot area			
	<table border="1"> <tr> <td>Total Plot area</td> </tr> <tr> <td>2363 Sq. m.</td> </tr> </table>		Total Plot area	2363 Sq. m.
Total Plot area				
2363 Sq. m.				
B-2	Area adequacy			
	<p>Area Adequacy table:</p> <p>➤ Hence, adequate area is available for proposed new Facility.</p> <p>Comments:</p> <p>➤ SEAC has examined it w.r.t.to total monthly production, maximum products, manufactured</p>			

per month, the total raw material required, weekly storage requirement of each raw material, their mode of storage, their compatibility (flammability, corrosive, toxic), area needed by each raw material, one week storage of finished goods. Area adequacy, from overall safety perspective, has been provided in proposal and is satisfactory.

B-3 Green belt area

	Total 2363 (Sq. meter)
Area in Sq. meter	780 Sq. meter
% of total area	33%

Comments:

The condition shall be given that -



C Employment

Employment generation

	Total
-	24

D WATER

D-1 Source of Water Supply

➤ Fulfilled by Tanker Water supply attached as Annexure 3

Comments:

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

D-2 Water consumption (KLD)

-

Category	Quantity KLD
(A) Domestic	0.5
(B) Gardening	3
(C) Industrial	
Process	-
Washing	-
Boiler	-
Cooling	1
Others	0
Industrial Total	1
Grand Total (A+B+C)	4.5

-

Comments:

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

D-3 Waste water generation (KLD)

-

Category	Waste water KLD
(A) Domestic	0.5
(B) Industrial	
Process	-
Washing	-
Boiler	-
Cooling	-
Others (Scrubber)	-
Total Industrial waste water	0.5
Total [A + B]	0.5

-

Comments:

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

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

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

OR

-- Waste Water will be treated in ETP & treated wastewater will be sent to CMEE.

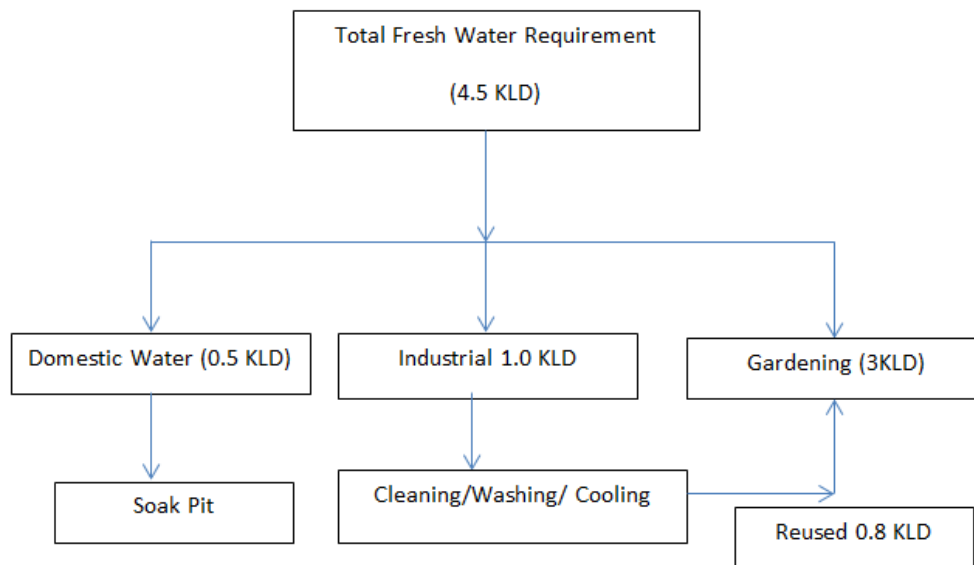
Comments:

➤

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

Sr. no.	Quantity KLD	Facility
1	-	
2	-	
Total	-	
Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)		
N.A		

D-5b Simplified water balance diagram

**D-5c Summary**

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	4.5	
Quantity to be recycled (B)	-	
Total fresh water requirement (C)	4.5	
Ensure Total water requirement = Fresh water + Recycled water i.e. A = B + C		

Comments:

- Total water requirement for the project shall not exceed 4.5 KLD. Unit shall reuse 0.5 KLD of treated domestic waste water within premises. Hence, fresh water requirement shall not exceed 4 KLD and it shall be met through Tanker water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
- Management of Industrial effluent shall be as under:
 - ✓ Proposed project 1 KLD use for make up in cooling process.
- Unit shall provide - and ETP with adequate capacity.
- 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 :100 KVA Fulfilled by MGVCL & 125 DG set on stand by						
E-2	Flue gas emission details						
-							
	S r. n o.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantit y of Fuel MT/ Day	Type of emissio ns i.e. Air Pollutan ts	Air Pollution Control Measures (APCM)
	1.	Thermic Fluid Heater (2 Lakh-K-Cal)	30	LDO	200 Liter /day	PM, SO ₂ , NO _x	Stack height of 22 m
	2.	DG Sets (125 KVA)	20	HSD	18 Lit/Hr	PM, SO ₂ , NO _x	Stack height of 12 m
-							
E-3	Process gas						
Not Applicable (There will be no any process gas emission).							
E-4	Fugitive emission details with its mitigation measures.						
-Leak Detection and Repair (LDAR) is a program implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment. In addition to control fugitive emissions, LDAR Program also helps the industries to reduce unwanted losses of chemicals and thereby conserving energy & increasing their profitability							
Comments for E2, E3 & E4:							
<ul style="list-style-type: none"> ➤ The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities. ➤ The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities. 							
F	Solvent management, VOC emissions etc.						
F-1	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.						
Solvent Recovery Table							
Spent Solvent From Manufacturing process 8963 MT/Annum Recover and Reuse in manufacturing process in within our plant premises.							
No spent would emanate from production. IPA would be recovered and reused in production.							
Consumed IPA would be evaporated or the tobacco mulch(organic waste) would contain traces of it.							
F-2	VOC emission sources and its mitigation measures						

Measures for achieving maximum solvent recovery and minimize VOC generation:

- The entire manufacturing activities will be carried out in a totally closed system.
- Maintenance of the pipeline and valves & fittings will be carried out regularly to avoid any leakages.
- All the Flange joints of the pipe lines which carry solvents will be covered with flange guards.
- VOC detectors will be installed at various places to identify any fugitive emissions.
- Minimum number of flanges, joints and valves in pipelines shall be provided.

F-3 | LDAR proposed:

Leak Definition

- A leak is detected whenever the measured concentration exceeds the threshold standard (i.e., leak definition) for the applicable regulation.

Leak Detection and Repair (LDAR) is a program implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment -

Comments:

- Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

G | Hazardous waste

G-1 | Hazardous waste management matrix

Sr. no.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules	Quantity (MT/Annum)	Management of HW
1.	Process Waste (Organic Manure)	From Manufacturing of Nicotine Derivatives	4.1	8500	Collection, Storage, Transportation, and selling to the agrochemical manufacturing industries or farmers.
2.	Spent Oil/ Used Oil	Lubrication of Plant Machinery	5.1	0.5	Collection, Storage, Transportation, disposal by selling to registered refiners/ used as

					lubricants in plant & machineries.
3.	Discarded containers (Bag, Barrel, Drum)	Production/ Raw Material Section	33.1	24	Collection, storage, decontamination. Transportation & disposal by selling to authorized recycler
4.	Spent Solvent	From Manufacturing process	28.6	8963	Collection, Storage, Recover and Reuse in manufacturing process in within our plant premises.
<p>Comments:</p> <ul style="list-style-type: none"> ➤ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement. ➤ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB. 					
G-2	Non- Hazardous waste management matrix				
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H	SAFETY details				
H-1	Details regarding storage of Hazardous chemicals				
<p>Nicotine Derivatives</p> <ul style="list-style-type: none"> ✓ Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Do not reuse this container. Do not get on skin or in eyes. Do not ingest or inhale. ✓ Storage: Keep away from sources of ignition. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from strong acids. <p>Comments:</p> <ul style="list-style-type: none"> ➤ 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:				
✓ N.A					
H-3	Details of Fire Load Calculation				

Total Floor Area (Ground floor+ First floor + Second floor)	:	2363+2363			M ²
Open Space Area in which Combustible Material stored	:	86			M ²
Area having more than 15 meter Height	:	00			M ²
Area having Wooden material	:	86			M ²
Total (a + b + c + d)	:	4898			M ²
$\frac{a+b+c+d}{20}$:	4898	/	20	= 244.9 L/Min
Total Requirement of Water (based on area in sr. no-6)	:				Liters
Current Water storage Capacity for fire hydrant	:	25000			Liters

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 . SEAC found it as per the requirement.

H-4 Details of Fire NOC/Certificate:

N.A

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

- Training, Personal Protective Equipment's, Medical Checkup for Employees. The recurring cost would be incurred on hiring of consultants and payment of various statutory fees to regulatory agencies. Cost of PPE kits for workers during operation phase included. PLC (Programmable Logical Control) base Automated process controls and operation of plant will be installed. Firefighting & safety system will be also implemented

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.

Details of Environmental Management Plan (EMP)

As below:

Sr. No	Unit	Details	Capital Cost (Rs. In Lakh)	Total Recurring Cost (Rs. In Lakh)
1	Hazardous Management	Industrial activities	5.5	2
2	Green Belt Development	Out of plot area 780 sq.m area used for green belt	0.5	0.2
3	Occupational Health Centre	Fire fighting & safety system, Protective Equipments, Medical Check up for Employees	2	1

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.

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

1. Legal undertaking by PP mentioning there is no any Habitats, water bodies(River, Lake/Pond, Canal, Natural drain etc.), Educational institutes, School/Colleges, monuments, Forest area, etc. within 500 m radius of the project site. Certificate from the Talati of the Village in this regard.
2. NA permission letter with purpose of the land in line to the proposed Active Pharmaceutical Ingredients (API) and Intermediate products.
3. Authenticated documents with technical justification regarding proposed product 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.

02	SIA/GJ/IND3/238678/2021	M/s. Regal Remedies Ltd. (Unit-I) C-1/6823, 6813, GIDC-Ankleshwar, Dist: Bharuch, Gujarat	EC
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Category of the unit: **5 (f)**

Project status: **Expansion**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.1. Type of application:	EC-Expansion
1.2. Proposal no.	SIA/GJ/IND3/238678/2021
1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	29.11.2021
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. &Date :	Not applicable as project is categorized as B2
1.7. Technical expert / Environmental Consultant :	M/s Ozone Enviro Tech
1.8. SEAC Meeting No. and Date:	381 st meeting dated 15.03.2022

<p>1.9. Compliance of Existing EC & CCA</p>	<p>Unit has valid EC vide letter no. SEIAA/GUJ/EC/5(f)/41/2019 Dated 4th January, 2019.</p> <p>Total of 112 Conditions, 89 Conditions are Complied, 20 Conditions are Noted, 3 Conditions are Not Applicable.</p> <p>CCA / CTO Vide Letter No-AWH-93386 dated: 18.03.2020 and shall be valid up to 04.04.2023.</p> <p>Total of 39 Conditions, 26 Conditions are Complied, 5 Conditions are Noted, 8 Conditions are not applicable.</p>
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2) This is an expansion project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

Product Table

SR. NO	PRODUCTS	CAS NO.	PRODUCTION CAPACITY (MT/MONTH)			End Use			
			EXISTING	PROPOSED	TOTAL				
In-organic Products									
1	Potassium Fluoride	7789-23-3	50	0	50	Fluorinating Agent for API & Other Intermediates			
2	Sodium Fluoride	7681-49-4							
Bulk Drug & Bulk Drug Intermediates Products									
3	2-Bromo 4-Fluoro Aniline	1003-98-1				50	0	50	Pharma Intermediates
4	4 Fluoro Nitrobenzene	350-46-9							Posaconazole
5	4F Phenol	371-41-5							Pharma Intermediates
6	2F Phenol	367-12-4							Elagolix
7	3 Bromo Benzotrifluoride	401-78-5							API Intermediate
8	2 Fluoro Nitrobenzene	1493-27-2							Posaconazole
9	2,4 DiFluoro Nitrobenzene	446-35-5							Pharma Intermediates
10	4-Fluoroanisole	459-60-9							Nebivolol
11	2-Fluoroanisole	321-28-8							Elagolix
12	4-Fluorophenyl acetic acid	405-50-5							Prasugrel
13	2,4-difluoro benzylamine	72235-52-0							Delutragravir
14	2-Chloro-1,3-Bis (Dimethyl Amino) Tri methiniumHexafluoro Phosphate	291756-76-8	Etoricoxib						

15	4 Fluorobenzaldehyde	459-57-4				Pharma Intermediates
16	4 Fluoro Benzoic Acid	456-22-4				Anti Bacterial API Intermediate
17	4-Bromo Fluorobenzene	460-00-4				Pharma Intermediates
18	Hexafluorophosphoric Acid	16940-81-1				Etoricoxib
19	Boron Trifluoride Acetic Acid	373-61-5				Fluorinating Agent
20	Phenyl Ethyl Chloride	622-24-2				Pharma Intermediate
21	HF-TEA	73602-61-6				Fluorinating Agent
22	5- (N-ethyl-N-2-hydroxyethylamino) - 2 – pentylamine (KSM of Hydroxychloroquine) OR 7-chloro- 4 - (5-(N-ethyl-N-2-hydroxyethylamino)-2-pentyl)aminoquinolinedi phosphate (Hydroxy chloroquine)	69559-11-1 118-42-3				Pharma Intermediates
23	4-fluobenzonitrile	1194-02-1				Pharma Intermediates
24	6-methyl-[pyridin-3-ylmethylideneamino]-2,5-dihydro-triazin-3-one	123312-98-0				Pharma Intermediates
25	Fluoacetanilide OR Bromofluoro acetanilide OR Bromofluoroaniline OR Bromofluorobiphenyl	351-28-0 326-66-9 367-24-8 41604-19-7				Pharma Intermediates
26	Pyridine 3 – aldehyde (3-Nicotinaldehyde)	500-22-1				Pharma Intermediates
27	Tetra Butyl Ammonium Fluoride Trihydrate	87749-50-6				Pharma Intermediates
	Hydrogenation of Nitro, Aromatic, Aliphatic, Pharma and Specialty Compounds and etc.					
28	4-Fluoro Nitrobenzene	350-46-9				Posaconazole
29	2-Fluoro Nitrobenzene	1493-27-2				Posaconazole
30	Di Fluoro Nitrobenzene	446-35-5				Pharma Intermediates
31	N-Ethyl-Nitromethylpyrrolidine	265315-52-4				Pharma Intermediates
32	1(4-hydroxy phenyl)4-(4-nitrophenyl) piperazine)	16911-89-0				Pharma Intermediates

33	3,4-diethoxy phenyl acetonitrile/Benzyl acetone/ verdylacetate/ 2-methylpentanal/ kopexil, etc.	93-17-4 2550-26-7 5413-60-5 123-15-9 113275-13-1				Pharma Intermediates
Proposed product						
Bulk Drug & Bulk Drug Intermediates Products						
34	Ritalinic Acid OR Phenyl 2 Piperidylacetamide OR Phenyl 2Pyridyl Acetamide	19395-41-6 19395-39-2 7251-52-7				Degrading Bacterial Isolates/ Intermediate of Ritalinic Acid/ Reduce the risk of heart attack & stroke
35	Atorvastatin	125971-94-0				used to lower cholesterol
36	4-(4-nitrophenyl) morpholin-3-one	446292-04-2				Anticancer agent gefitinib and the analgesic dextromoramide
37	5-Phenyl Thio-2-Nitro	43156-47-4				Intermediates of Febantel&Fenben dazole.
38	L-Prolinamide	147-85-3				Uses to make proteins, such as collagen.
39	Flupirtine maleate	75507-68-5	0	100	100	a non-opioid painkiller
40	Etoricoxib	202409-33-4				Helpsto reduce the pain and swelling.
41	Sesamol	533-31-3				Antifungal
42	Pregabalin	148553-50-8				Used to relieve pain caused by nerve damage
43	Amlodipine	88150-42-9				Used to treat high blood pressure (hypertension)
44	Fexofenadine	83799-24-0				Used to helps with the symptoms of allergies
45	Febuxostat	144060-53-7				Used to prevent gout attacks but not to treat them once they occur
46	Levosambutamol	34391-04-3				Used to relieve symptoms of asthma and chronic

						obstructive pulmonary disease(COPD)
47	Olanzapine	132539-06-1				Used to treat the symptoms of schizophrenia
48	Ethyl 3-methyl-3-phenyloxirane-2-carboxylate	77-83-8				inflammation
49	Methyl 3-(4-methoxy-4-methylpentyl)-3-methyloxirane-2-carboxylate (MMGE)	42245-42-1				Treatment of many systemic fungal infections
50	Methyl 3-methyl-3-(4-methylpentyl)oxirane-2-carboxylate (RNGE)	4538-50-5				
51	R & D Product	--	0	0.1	0.1	
Total			50	100.1	150.1	

- 3) The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27thMarch, 2020.
- 4) The proposal was considered in the SEAC video conference meeting dated 15.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) Earlier PP obtained EC. Unit is having Valid CCA of the Board for existing plant. PP submitted point wise self-compliance report for EC & CC&A for existing plant. Compliance report found satisfactory. PP submitted that there is no legal court case and public complaint against unit.
- 8) Committee found presentation and submission of project proponent satisfactory.
- 9) 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
- 10) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 1223(E) dated 27.03.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.
- 11) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

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

Existing	Proposed	Total
5 Crores	3 Crores	8 Crores

Break-up of proposed project Cost:

Details	Existing Cost (Rs. In Crores)	Project Cost (Rs. In Crores)	Project Cost (Rs. In Crores)
Land	0.5	0.0	0.5
Building	1.0	0.5	1.5
Machinery	3.5	1.76	5.26
Other	0.0	0.0	0.0
Env. & Safety	0.0	0.74	0.74
Total	5.0	3.0	8.0

A-2 Details of CER -

PP shall carry out CER activities as below:

- ✓ Unit will provide 3 No. of Solar Street Light and Solar panel in the Gram Panchayat office of Unita Village.

B Land / Plot ownership details:

Land is owned by the M/s. Regal Remedies Ltd. (Unit – I). Amalgamation Plot No. C1-6823 and 6813 vide letter no. GIDC/RM/ANK/57 Dated 06/12/2017.

B-1 Plot area

Existing	Proposed	Total
1407.90 Sq. m.	0	1407.90 Sq. m.

B-2 Area adequacy

Area Adequacy table:

Sr. No.	Storage Details	No. of Drums/ Cylinder	Total Storage (MT)	Total Area (m ²)	Area Dedicated for Storage
1	Flammable Raw Material	63 No. of Drums	79 No. of Drums	70	30
2	Flammable/Toxic Raw Material	9 No. of Drums	17 No. of Drums	25	11
3	Toxic Raw Material	5 No. of Cylinder	5 No. of Cylinder	17.5	10
4	Corrosive Raw Material	25 No. of Drums	46 No. of Drums	28.5	13
5	Explosive Raw Material	7 No. of Cylinder	7 No. of Cylinder	56	20
	Total	142 No. of Drums 12 No. of	29.07	197	84

	Cylinder		
--	-----------------	--	--

Total 197 Square Meter area will be provide for Raw Material Storage out of it 84 Square Meter area will be utilize for the Storage of Raw Material and 113 Square Meter area will be provide as free movement.

➤ 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	Proposed (Sq. meter)	Total (Sq. meter)
Area in Sq. meter	165	300	465
% of total area	12	21	33

Comments:

The condition shall be given that -

- The PP shall develop green belt (465 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

Employment generation

Existing	Proposed	Total
50	0	50

-

D WATER

D-1 Source of Water Supply

GIDC Water Supply vide letter no. NO/GIDC/DEE(W/S)/576 Dated 20/03/2017.

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
(D) Domestic	7.5	- 4.5	3.0
(E) Gardening	0.5	2.0	2.5
(F) Industrial			
Process	5.5	13.7	19.2
Washing	1.5	1.5	3
Boiler	10	10	20
Cooling	1.5	5	6.5
Others (Scrubber)	1.5	1.5	3
Industrial Total	20	31.7	51.7
Grand Total (A+B+C)	28	29.2	57.2

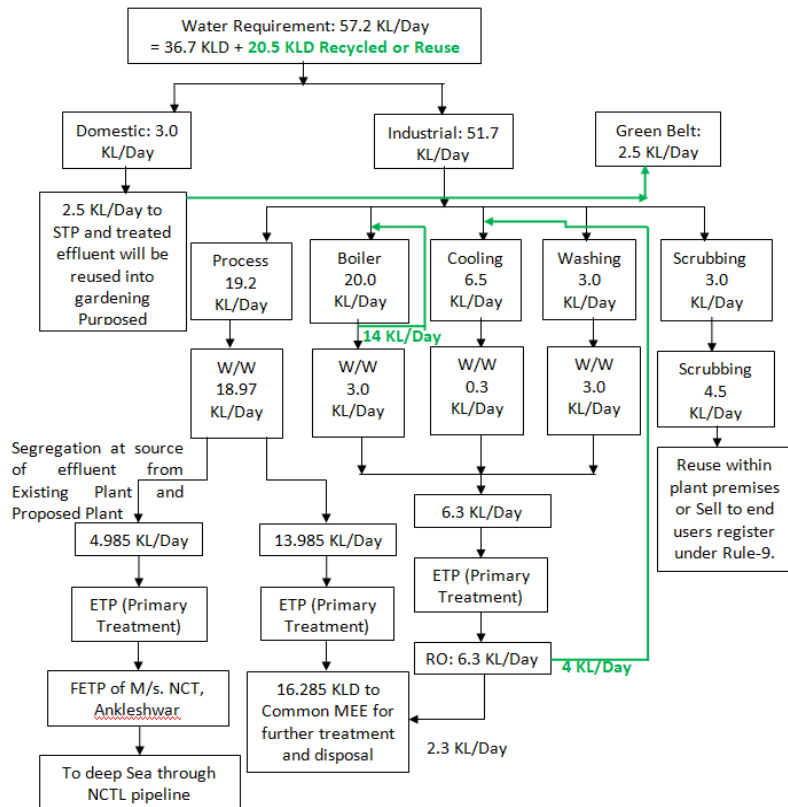
Comments:

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

D-3 Waste water generation (KLD)

Category	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD
(C) Domestic	7	- 4.5	2.5
(D) Industrial			
Process	4.97	14	18.97
Washing	1.5	1.5	3
Boiler	1.85	1.15	3
Cooling	0.15	0.15	0.3
Others	1.5	3	4.5
Total Industrial waste water	9.97	19.8	29.77
Total Waste Water	16.97	15.3	32.77

-			
Comments:			
➤ The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.			
D-4	Break-up of waste water disposal & facility (For Domestic)		
2.5 KLD Domestic Waste Water will be treated in STP & treated wastewater will be reused in gardening purpose within premises.			
Comments:			
➤ Domestic wastewater generation shall not exceed 2.5 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.			
➤ Unit shall provide STP with adequate capacity.			
D-5a	Break-up of waste water disposal & facility (For Industrial)		
	Sr. no.	Quantity KLD	Facility
	1	4.985	Wastewater shall be sent to NCT, Ankleshwar for further treatment and disposal
	2	13.985	Treated in ETP and then sent to Common MEE for further treatment and disposal.
	3	6.3	Treated in ETP followed by RO. RO permeate will be reuse and RO Reject shall be sent to Common MEE.
	4	4.5	Sold to End users having permission under Rule 9.
	Total	29.77	
	Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)		
	CMEE Membership certificate of M/s ACPTCL Ankleshwar vide no. Ref. DIPL-HO/CORR/2021/59 dated 07/12/2021		
D-5b	Simplified water balance diagram		



D-5c Summary

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	57.2	
Quantity to be recycled (B)	20.5	14 KL Boiler Condensate, 4 KL RO permit Water & 2.5 KL Domestic effluent reused into gardening purposed
Total fresh water requirement (C)	36.7	
Ensure Total water requirement = Recycled water + Fresh water i.e. A = B + C (57.2 = 20.5 + 36.7)		

Comments:

5. Total water requirement for the project shall not exceed 57.2 KLD. Unit shall reuse 20.5 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 36.7 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.

6. Management of Industrial effluent shall be as under:

- ✓ **4.985 KLD** of wastewater shall be sent to NCT, Ankleshwar for further treatment and disposal.
- ✓ **16.285 KLD** (13.985 KL + 2.3 KL RO Reject) of wastewater shall be treated in ETP and then sent to Common MEE for further treatment and disposal.
- ✓ 6.3 KLD (3.3 Utility effluents & 3.0 KLD washing effluents) shall be treated into Primary ETP & RO Plant. 4 KL RO permit water reused in to cooling purposed and 2.3 KLD RO Reject shall be sent to Common MEE.
- ✓ 4.5KLD Scrubbing media reuse in plant premises & Sell to end user who is having Rule-9 Permission.

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

8. 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 :200 HP

E-2 Flue gas emission details

Sr. no	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/ Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
Existing						
1	Boiler* (1 TPH)	12	Natural Gas	200 ³ Nm ³ /hr.	PM SO ₂ NOx	Adequate Stack Height
2	Thermic Fluid Heater (1 Lakh Kcal/hr.)	12	Natural Gas	200 ³ Nm ³ /hr.		Adequate Stack Height
3	D.G. Set (125 KVA) - Stand By	11	Diesel	10 Lit/hr.		Adequate Stack Height
Total Proposed						
1	Boiler (2 TPH)	20	Natural Gas	400 ³ Nm ³ /hr.	PM SO ₂ NOx	Adequate Stack Height
2	Thermic Fluid Heater (1 Lakh Kcal/hr.)	20	Natural Gas	200 ³ Nm ³ /hr.		Adequate Stack Height
3	D.G. Set (125 KVA) - Stand By	11	Diesel	10 Lit/hr.		Adequate Stack Height
*Existing Boiler of 1 TPH shall be replaced by Boiler of 2 TPH after proposed expansion.						

E-3 Process gas

Sr. No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
Existing				
1.	Reaction Vessel (Fluorination)	HF	9	Two Stage Water Scrubber
2.	Reaction Vessel (Chlorination)	HCl Cl ₂	9	Two Stage Alkali Scrubber
3.	Reaction Vessel (Bromination)	HBr	9	Two Stage Water + Alkali Scrubber
TOTAL PROPOSED				
1.	Reaction Vessel (Fluorination)	HF	9	Two Stage Water Scrubber
2.	Reaction Vessel (Chlorination)	HCl Cl ₂	9	Two Stage Alkali Scrubber
3.	Reaction Vessel (Bromination)	HBr	9	Two Stage (Water + Alkali) Scrubber
4.	Reaction Vessel (Ammoniation)	NH ₃	9	Two Stage Water Scrubber

E-4 Fugitive emission details with its mitigation measures.

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

- Airborne dust at all transfers operations/ points will be controlled either by spraying water or providing enclosures.
- Adequate ventilation will be provided.
- Regular maintenance of valves, pumps, flanges, joints and other equipment will be done to prevent leakages and thus minimizing the fugitive emissions.
- Entire process will be carried out in the closed reactors with proper maintenance of pressure and temperature.
- Periodic monitoring of work area will be carried out to check the fugitive emission.
- Stand by pumps will be provided on all scrubbers. Besides, scrubbers will be equipped with on-line pH meter with hooter system for better operational control.
- Close feeding system will be provided for centrifuges. Centrifuge and filtrate tank vents will be connected to vent chillers.
- Minimum number of flanges, joints and valves in pipelines.
- Regular inspection of floating roof seals and proper preventive maintenance of roofs and seals for tanks.
- Fugitive emission over reactors, formulation areas, centrifuges, chemical loading and transfer area will be collected through hoods and ducts by induced draft and controlled by scrubber.

11. Dedicated scrubber will be provided for fugitive emissions to control. 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 to be ensured.

Comments for E2, E3 & E4:

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

F Solvent management, VOC emissions etc.

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

Solvent Recovery Table

Solvent Name	Consumption	Generation	Recovery %	Loss %
	MT/Month	MT/Month		
Triethyl Amine	125	120	96.00	4.00
Ethanol	147	140	95.24	4.76
Dimethyl formamide	150	145	96.67	3.33
THF	200	190	95.00	5.00
Ethyl Acetate	215	205	95.35	4.65
Toluene	186	180	96.77	3.23
IPA	100	95	95.00	5.00
Acetone	174	170	97.70	2.30
MDC	178	175	98.31	1.69
Methanol	135	130	96.30	3.70
Acetic Anhydride	241	230	95.44	4.56
Chloroform	209	205	98.09	1.91

F-2 VOC emission sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation: During operation stage, leakage through valves/pumps, leakage and emission from open drum containing chemicals, open feeding, storage tanks, etc. will be major sources of fugitive emissions and VOCs. Excess use of solvent/s may also results fugitive emission from the process vessels.

- Solid raw material charging will be done through closed system.
- Entire process will be carried out in the closed reactors with proper maintenance of pressure and temperature.
- Close feeding system will be provided for centrifuges. Centrifuge and filtrate tank vents will be connected to vent chillers.
- Fugitive emission over reactors, formulation areas, centrifuges, chemical loading, transfer area, will be collected through hoods and ducts by induced draft and controlled by scrubber/dust collector.

- Emphasis will be given to solvent management/solvent loss prevention.
- Control by having proper scrubbing system.
- Condenser to trap VOC.
- 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.
- Proper maintenance schedule will be adhered to avoid emissions through flange joints, pump seals etc.
- Minimum number of flanges, joints and valves in pipelines.
- Proper gland packing will be maintained for pumps and valves and to the extent possible pumps with mechanical seal.
- All the raw materials will be pneumatically transfer to the reactor.
- All rotating equipments like pumps will be installed with mechanical seals to arrest any sort of emissions.
- A regular preventive maintenance schedule will be in place to replace or rectify all gaskets and joints etc. as a part of ISO systems to ensure no fugitive emissions take place.
- Periodic monitoring of work area will be carried out to check the fugitive emission.
- Solvent tank vents will be connected to vent chillers.
- Adequate ventilation will be provided.
- Airborne dust at all transfers operations/ points will be controlled either by spraying water or providing enclosures.
- Breather valves will be provided on solvent tanks.

F-3 LDAR proposed:

Leak Detection and Repair (LDAR)

- To prevent losses of these solvents in atmosphere, following infrastructure shall be used in addition to LDAR program
- Leak Free Pumps for transfer of solvents
- MSW Gaskets in solvent pipelines to prevent leakage from flanges
- Minimum number of flanges, joints and valves in pipelines.
- To eliminate chances of leakages from glands of pumps, mechanical seal will be provided at all solvent pumps.
- All the rotating equipments like pumps will be installed with Mechanical Seals to arrest 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 50C) 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 -150C will be used to trap any traces of Solvent which is slipped from Secondary condenser

Monitoring of Solvent Losses

- 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.

Sr. No.	Component	Preventive Maintenance schedule
1	Pump seals with visible liquid dripping	Daily
2	Valves/flanges	Quarterly
3	Compressor seals	Quarterly
4	Pressure relief devices	Yearly
5	Pipeline Thickness Testing	Yearly

Comments:

- Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

G Hazardous waste

G-1 Hazardous waste management matrix

Sr. no.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules.	Quantity (MT/Annum)			Management of HW
				Existing	Proposed	Total	
1.	ETP Sludge	35.3	ETP	24.0	76.0	100.0	Collection, Storage, Transportation & Disposal at common

							TSDf.
2.	Used Oil/ Spent Oil	5.1	Equipme nt & machiner ies	24.0 KL	76.0 KL	100.0 KL	Collection, Storage, Transportati on & Sell to GPCB Authorized Reprocesso r or reuse as lubricant of machinery.
3.	Empty Drums/Bag/ Liners	33.1	Raw Material	4800 Nos. (43.2 MT)	9600 Nos. (86.4 MT)	14400 Nos. (129. 6 MT)	Collection, Storage, Transportati on & Sell to GPCB Authorized Vendor.
4.	Distillation Residue	20.3	Solvent Distillatio n	60.0	10.0	70.0	Collection, Storage, Transportati on & Disposal by sending to cement industries for co- processing or common incinerator site.
5.	Spent Solvent	28.6	Process	2700	450	3150	Collection, Storage, Distill and reuse in plant premises.
6.	Hydrogen Fluoride (45 %)	B-15	Scrubber	230	0	230	Collection, Storage & Reuse in process within premises.
7.	Hydrogen Chloride (30%)	B-15	Scrubber	180	0	180	Collection, Storage & Reuse plant premises for manufacturi ng of 4 Fluoro benzaldehy de and 4 Fluoro

							Benzoic Acid
8.	Sodium Bromide (35%)	B-15	Scrubber	1400	0	1400	Collection, Storage, Transportation & sell to end users register under Rule-9.
9.	Hydrogen Bromide (30%)	B-15	Scrubber	290	0	290	
10.	Waste Cake (KCl)	28.1	Process	636	0	636	
11.	Spent Catalyst	28.2	Process	1.2	2.4	3.6	Collection, Storage, Transportation & return to supplier for re-generation
12.	Organic Process Residue	28.1	Process	0	564	564	Collection, Storage, Transportation & Disposal by sending to cement industries for co-processing or common incinerator site.
13.	Inorganic Process Residue	28.1	Process	0	1018.8	1018.8	Collection, Storage, Transportation & Disposal at common TSDF.
-							
Comments:							
<ul style="list-style-type: none"> ➤ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement. ➤ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB. 							
G-2	Non- Hazardous waste management matrix						
✓ STP sludge generation will be 0.73 MTPA							
Comments:							
<ul style="list-style-type: none"> ➤ STP sludge shall be collected and used as manure in gardening activity or send to TSDF 							

site for landfilling.							
H	SAFETY details						
H-1	Details regarding storage of Hazardous chemicals						
<p><u>Storage of Hazardous chemicals in Tanks</u> Not Applicable</p> <p><u>Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.</u></p> <ul style="list-style-type: none"> ➤ FLP type light fittings will be provided. ➤ Proper ventilation will be provided in Godown. ➤ Proper label and identification board /stickers will be provided in the storage area. ➤ Conductive drum pallets will be provided. ➤ Drum handling trolley / stackers/fork lift will be used for drum handling. ➤ Separate dispensing room with local exhaust and static earthing provision will be made. ➤ Materials will be stored as per its compatibility study and separate area will be made for flammable, corrosive and toxic chemical drums storage. ➤ Smoking and other spark, flame generating item will be banned from the Gate. ➤ Ensured that all storage areas have doors with locks. ➤ Ensured that all containers are properly closed. <p><u>Safety details of Hazardous Chemicals:</u></p> <table border="1"> <thead> <tr> <th>Type of Hazardous Chemicals</th> <th>Safety measures</th> </tr> </thead> <tbody> <tr> <td>Flammable & Explosive</td> <td> <ul style="list-style-type: none"> • Isolated storage area, away from process area. • Full-fledged fire hydrant system with fire water storage tank will be provided • Water sprinkler system/ hydrant system will be provided at all flammable material storage area. • Static dissipation points for control of static hazards will be provided. • Fire extinguishers and foam trolleys will be provided at strategic locations. • Online gas detectors system will be provided near butene, hydrogen, ethylene and underground tank farm. • Safety instruction boards will be displayed for handling & emergency response. • Dyke walls will be provided for containment of liquid spills. • DCS based safety interlocks, control valves and emergency relief system will be provided. • Flame proof fitting will be installed at all areas as per Hazardous Area Classification. • Double earthing& grounding to the system will be provided. • Earthing relays with interlock will be provided to stop transfer of material if earthing continuity is not there. • Lock & key arrangements will be provided for critical chemicals pipeline valves. </td> </tr> <tr> <td>Corrosive&</td> <td> <ul style="list-style-type: none"> • Storage facilities and construction will be made as per SMPV </td> </tr> </tbody> </table>		Type of Hazardous Chemicals	Safety measures	Flammable & Explosive	<ul style="list-style-type: none"> • Isolated storage area, away from process area. • Full-fledged fire hydrant system with fire water storage tank will be provided • Water sprinkler system/ hydrant system will be provided at all flammable material storage area. • Static dissipation points for control of static hazards will be provided. • Fire extinguishers and foam trolleys will be provided at strategic locations. • Online gas detectors system will be provided near butene, hydrogen, ethylene and underground tank farm. • Safety instruction boards will be displayed for handling & emergency response. • Dyke walls will be provided for containment of liquid spills. • DCS based safety interlocks, control valves and emergency relief system will be provided. • Flame proof fitting will be installed at all areas as per Hazardous Area Classification. • Double earthing& grounding to the system will be provided. • Earthing relays with interlock will be provided to stop transfer of material if earthing continuity is not there. • Lock & key arrangements will be provided for critical chemicals pipeline valves. 	Corrosive&	<ul style="list-style-type: none"> • Storage facilities and construction will be made as per SMPV
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<p>Chemicals</p>	<p>Rules.</p> <ul style="list-style-type: none"> • Sprinkler system and Hydrant system will be provided as per NFPA std./ GFR 66A. • Double water curtain • Rubbles will be provided in dyke area. • 24 hours security guard will be available at tank farm area. • CCTV camera will be provided in tank farm area. • Double static earthing will be provided. • Emergency breathing airline will be provided near bullets and positive pressure suit with hood will be provided in tank farm area in a box. • Required PPEs with canister will be provided in tank farm area. • Online HF detection censors (PPM based) will be provided in tank farm area. • Flange/splash guard in HF carrying line • Double bottom valves (Main Isolation and Control Valve) will be provided. • Wind direction indicator will be provided. • Safety Shower will be provided near bullets. • Caution note will be provided. • Standard operating procedure is defined considering all safety standards • HF Kit (Calcium Glouconate gel, eye washer etc.) available 	
<p>Toxic Chemicals</p>	<ul style="list-style-type: none"> • Temperature indicator with alarm. • Interlock for high pressure/ low level/high level of HF tank to trip HF feed pump • LCV for prevention of Low gas flow due to lower production rate • RD & PSV considered for high pressure • Auto level transmitter and DCS operation. • Double safety valve will be provided. • PG will be provided. • Dyke wall will be provided. • Dump tank will be provided • Scrubber system 	
<p>➤ Applicability of PESO: Yes. Unit already has PESO license.</p>		
<p><u>Comments:</u></p> <p>➤ 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.</p>		
<p>H-2</p>	<p>Types of hazardous Processes involved and its safety measures:</p>	
<p>Type</p>	<p>of</p>	<p>Safety measures including Automation</p>

Process	
Hydrogenation	<ul style="list-style-type: none"> • DCS System will be provided for control the process • 3/4 time Nitrogen purge into reactor to clean the reactor. Then charge material and hydrogen in reactor. • Pressure of Hydrogen – 3 Kg/cm². • Auto damping system will be installed, in case power failure. • Auto Oxygen Detector will be installed. • Nitrogen blanketing in Hydrogenation reactor. • Safety valve and Rupture disc provided on reactor. • Cooling Chilling and power alternative arrangement have been made on reactor. • PRV station with shut off valve, safety valve provision will be made for hydrogenation reaction safety. • Flame arrestor will be provided on vent line of reactor and it will be extended up to roof level. • Reactor vent extended outside the process area and flame arrestor provided on vent line. • Jumpers for static earthing on pipeline flanges of flammable chemical will be provided.
Ammoniation	<ul style="list-style-type: none"> • Sprinkler system will be provided. • Adequate PPE will be kept to handle the Hazard. • ISI Portable fire extinguisher & Hydrant line will be provided as per TAC norms. • Sufficient amount of sand/soil are kept to control any spillage. • Flame proof fitting provided. • Eye washer cum shower will be provided near Drum area. • Spark arrester will be installed on all vehicles inside the premises. • SBA set, Canister mask and airline mask will be provided.
-	
H-3	Details of Fire Load Calculation
Total Plot Area:	1407.9 m ²
Area utilized for plant activity:	541.5 m ² (G+2)
Area utilized for Hazardous Chemicals Storage:	197 m ²
Number of Floors:	G+2
Water requirement for firefighting in KLD:	2928 L/hr
Water storage tank provided for firefighting in KLD:	100 KL
Details of Hydrant Pumps:	Kirloskar main pump (5m ³ /Hr, 80-meter head) and one jockey pump (3 m ³ /hr, 80-meter head) will be provided
Nearest Fire Station :	Ankleshwar Fire Station – 4.5 KM
Applicability of Off Site Emergency Plan:	NA
Comments:	
<ul style="list-style-type: none"> ➤ 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:
Shall be obtained after receipt of EC.	

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

Number of permanent Employee:	50
Number of Contractual person/Labour:	00
Area provided for OHC:	15 sq. m2 in admin building
Number of First Aid Boxes:	3nos
Nearest General Hospital:	Welcare Hospital
Name of Antidotes to be store in plant:	Yes we have required anti-dots as guided by our FMO.

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.

Details of Environmental Management Plan (EMP)

As below:

Sr. No	Unit	Detail	Capital Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)
1	Waste Water	Primary Treatment, RO Plant & STP Plant	E-0.12 P-0.23	0.2556
2	Air	Adequate pollution control system will be provided for control of gaseous emission. Adequate stack height for better dispersion of pollutants. Adequate Two stage scrubber attached to process vents	E-0.44 P-0.045	0.05
3	Hazardous Management	Membership of TSDF & Incineration Waste and its transportation Charge	E-0.27 P-0.02	1.57
4	Fire & Safety	Fire hydrant and Pipeline System, Fire Fighting Equipments, Foam Trolley and Flame Proof electric fitting	E-0.03 P-0.37	0.015
5	Monitoring of Environmental parameters	Regular monitoring of various environmental parameters will be carried out to check the effectiveness of the control system.	E-0.01	0.01
6	Green Belt Development	Cost of Trees and its plantation Charges	P-0.045	0.0025
7	Occupational Health	OHC, Training, Medical Checkup, Integrated DCS System	E-0.225	0.12
8	CER Funds	--	P-0.03	--

Total	E-1.0950 P-0.7400 T-1.8350	2.02
<u>Comments:</u>		
<ul style="list-style-type: none"> ➤ 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. 		

12) DELIBERATION AND RECOMMENDATION:

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

Conditions with which Environment Clearance is recommended:

Construction Phase

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

SPECIFIC CONDITIONS:

1. Project Proponent (PP) shall strictly abide by the outcome/decision of Hon'ble Supreme Court of India in Civil Appeal no. 8478/2020 regarding operation of the Hon'ble NGT orders dated 10/07/2019 & 14/11/2019.
2. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after the 31st December 2021, 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 subsequent amendments.
4. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
5. (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.
6. 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**].
7. 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.
8. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained
9. **Safety & Health:**
 - a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals
 - b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
 - c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
 - d) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as

per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.

- e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
- f) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
- g) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
- h) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
- i) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
- j) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
- k) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
- l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.
- m) Unit shall provide safety valve and rupture disc, as well as auto dump or auto quench/, suppress system for hydrogenation vessel safety

WATER

1. Total water requirement for the project shall not exceed 57.2 KLD. Unit shall reuse 20.5 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 36.7 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
2. The industrial effluent generation from the project shall not exceed 29.77 KLD.
3. Management of Industrial effluent shall be as under:
 - ✓ **4.985 KLD** of wastewater shall be sent to NCT, Ankleshwar for further treatment and disposal.
 - ✓ **16.285 KLD** (13.985 KL + 2.3 KL RO Reject) of wastewater shall be treated in ETP and then sent to Common MEE for further treatment and disposal.
 - ✓ 6.3 KLD (3.3 Utility effluents & 3.0 KLD washing effluents) shall be treated into Primary ETP & RO Plant. 4 KL RO permit water reused in to cooling purposed and 2.3 KLD RO Reject shall be sent to Common MEE.
 - ✓ 4.5KLD Scrubbing media reuse in plant premises & Sell to end user who is having Rule-9 Permission.
4. Domestic wastewater generation shall not exceed 2.5 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.

- *Domestic wastewater generation shall not exceed 2.5 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off into soak pit. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.*
 - *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.*
 - *Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.*
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.
 7. The unit shall provide metering facility at the inlet and outlet of ETP&RO and maintain records for the same.
 8. Proper logbooks of ETP & RO; reuse of treated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

9. Unit shall not exceed fuel consumption for steam Boiler, TFH and D G Set as per the point no. E-2 as mentioned above.
10. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
11. Unit shall provide adequate APCM with process gas generation sources as the point no. **E-3** as mentioned above.
12. The fugitive emission in the workzoneenvironment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety& Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
 - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
 - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
 - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
13. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
14. For control of fugitive emission, VOCs, following steps shall be followed :
 - ✓ Closed handling and charging system shall be provided for chemicals.

- ✓ Reflux condenser shall be provided over Reactors / Vessels.
- ✓ Pumps shall be provided with mechanical seals to prevent leakages.
- ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.

15. Solvent management shall be carried out as follows:

- ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
- ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
- ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
- ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
- ✓ Solvents shall be stored in a separate space specified with all safety measures.
- ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
- ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.

16. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, HF, HCl, CL₂, HBr, NH₃, and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

17. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
18. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
19. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
20. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
21. STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.
22. 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

23. The PP shall develop green belt (465 Sq. m i.e. 33 % of the total plot area) as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

24. The project proponent shall carry out the entire activities[Funds towards Renewable energy activities (Solar street lights and Solar panels installation at Gram Panchayat office)] proposed under CER shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.

25. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

26. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.

27. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.

28. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.

29. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.

30. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.

31. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.

32. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email

addresses (a) msseiaagj@gmail.com& (b) seacgujarat@gmail.com

03	SIA/GJ/IND3/243341/2021	M/s. Niranjan Pharma Chem Plot No. 428/5, Notified GIDC Industrial Estate, Ankleshwar- 393 002, Dist. Bharuch, Gujarat, India	EC
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Category of the unit: **5 (f)**

Project status: **New**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	SIA/GJ/IND3/243341/2021
1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	06.12.2021
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. &Date :	Not applicable as project is categorized as B2
1.7. Technical expert / Environmental Consultant :	M/s Siddhi Green Excellence Pvt. Ltd.
1.8. SEAC Meeting No. and Date:	381 st meeting dated 15.03.2022
1.9. Compliance of Existing EC & CCA	Not Applicable (if New)

2) This is a new project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

Product Table

Sr. No	Name of Products	CAS No. (Product)	Type/ Category of Product (API/ Intermediate)	Production Capacity (MT/Month)	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.	Telmisartan (4'[[4-Methyl-6-(1-methyl-1H-benzimidazol-2-yl)-2-propyl-1H-benzimidazol-1-yl] methyl] biphenyl-2-carboxylic acid)	14470 1-48-4	API	25 (Either individual or total of all products in this group)	--	--	--	Antihypertensive: Used as medicine to treat high blood pressure (hypertension)
2.	Fluconazole (2-(2, 4-difluorophenyl)-1, 3-bis (1H-1, 2, 4-triazol-1-yl)-propan-2-ol)	86386 -73-4	API		--	--	--	Antifungal: Used as medicine to prevent and treat a variety of fungal and yeast infections.
3.	Rosuvastatin calcium (+)(3R, 5S)-7-[4-(4-fluorophenyl)-6-isopropyl-2-(N-methyl-N-methanesulfonylamino)pyrimidin-5-yl] 3,5-dihydroxy-6(E)-heptenoic acid calcium salt)	14709 8 – 20 - 2	API		--	--	--	Anticholesterol: Used as medicine for treatment of Cholesterol and Fats (Such as LDL, triglycerides) and raise (HDL) in the blood.
4.	Amiodarone hydrochloride (2-Butyl-3-benzofuranyl) [4-[2-(diethylamino)ethoxy]-3,5-diiodophenyl] methanone hydrochloride)	19774 -82-4	API		--	--	--	Antiarrhythmic medication: It is an antiarrhythmic drug used for many serious arrhythmias of the heart
5.	Oxcarbazepine (10,11-dihydro-10-oxo-5H-dibenz(b,f)azepine-5-Carboxamide)	28721 -07-5	API		--	--	--	Anticonvulsant: Used as medicine to treat seizures and epilepsy in adults and children
6.	Luliconazole (2E)-2-[(4R)-4-(2,4-dichlorophenyl)-1,3-dithiolan-2-ylidene]-2-	18716 4-19-8	API		--	--	--	Antifungal: Used as medicine to prevent and treat a variety of fungal and

	imidazol-1-ylacetoneitrile)							yeast infections.
7.	1-(2,4-difluorophenyl)-2-(1H-1,2,4-triazol-1-yl) ethanone (DFTA)	86404-63-9	API Intermediate	75 (Either individual or total of all products in this group)	n-1	Fluconazole	86386-73-4	Antifungal
8.	1-(2,4-dichlorophenyl)-2-(1-imidazolyl) ethanol and (αS)-2,4-dichloro-α-(chloromethyl)-benzenemethanesulfonate (DCPIE)	24155-42-8 and 53984-39-7	API Intermediate		n-1	Luliconazole	187164-19-8	Antifungal
9.	(2-butyl-1-benzofuran-3-yl) (4-hydroxy-3,5-diiodophenyl) methanone (DIIDO)	1951-26-4	API Intermediate		n-1	Amiodarone HCl	19774-82-4	Antiarrhythmic medication
10.	N-Acetyl Thiazolidine-4-Carboxylic Acid (NATCA)	5025-82-1	API Intermediate		n-2	Folic Acid	59-30-3	Use to antioxidant with potential value in medicine
11.	Cyanoacetamide	107-91-5	API Intermediate		n-2	Pregabalin	<u>14855</u> <u>3-50-8</u>	Used to treat pain caused by fibromyalgia, or nerve pain in people with diabetes
12.	2-Bromo-2-nitropropane-1,3-diol (BNP)	52-51-7	API		100 (Either individual or total of all products in this group)	--	--	--

								preservation
13.	2,2-Dibromo-3-Nitrilopropionamide (DBNPA)	10222-01-2	API Intermediate		n-2	Miconazole	22916-47-8	Used as medicine to control microorganisms including algae, bacteria, and fungal
14.	Benzyl Bromide {(Bromomethyl) benzene}	100-39-0	API Intermediate		n-1	Amoxicillin etc.	26787-78-0	Used to treat a number of bacterial infections
15.	4-Bromo-4-fluorobenzene	460-00-4	API Intermediate		n-2	Citalopram, Paroxetine	59729-33-8 78246-49-8	Used to treat depression, panic attacks, obsessive-compulsive disorder
16.	Bromo OTBN (4-Bromomethyl-2-cyanobiphenyl)	114772-54-2	API Intermediate		n-1	Sartan series of drugs like losartan, valsartan, candesartan	114798-26-4, 137862-53-4, 139481-59-7	Used to treat high blood pressure
17.	1,4-Dibromo Butane	110-52-1	API Intermediate		n-2	Aripiprazole, Mebeverine, and other organic compounds	129722-12-9, 2753-45-9	Used to treat certain mental/mood disorders
18.	Ethyl 2-bromo butyrate	533-68-6	API Intermediate		n-2	Leveticeaum , Cyclobutyrol, etc	102767-28-2, 512-16-3	Used to treat epilepsy
19.	Chloroacetic acid methyl ester	96-34-4	API Intermediate	200 (Either individual or total of all products in this group)	n-3	Linezolid	165800-03-3	Used an antibiotic used for the treatment of bacterial infections
20.	Chloroacetic acid isopropyl ester	105-48-6	API Intermediate		n-2	Dexibuprofen	<u>51146-56-6</u>	Used <u>anti-inflammatory drug</u> (NSAID) class that is used for treating <u>pain</u> , <u>fever</u> .
21.	Hexyl ethanoate	142-	API		n-2	Hexylresorci	<u>136-</u>	with <u>local</u>

	(Hexyl Acetate)	92-7	Intermedi ate		nol	<u>77-6</u>	<u>anaesthetic, antiseptic, and anthelmintic properties</u>
22.	Benzyl ethanoate (Benzyl Acetate)	140-11-4	API Intermedi ate		n-3 Benzethonium chloride	<u>121-54-0</u>	Used as a topical <u>antimicrobial agent</u> in <u>first aid antiseptics</u>
23.	Hexyl 2-hydroxybenzoate (Hexyl Salicylate)	6259-76-3	API Intermedi ate		n-2 Hexamidine	<u>3811-75-4</u>	Used an <u>antiseptic and disinfectant.</u>
24.	Isoamyl o-hydroxybenzoate (Isoamyl Salicylate)	87-20-7	API Intermedi ate		n-2 Aspirin	<u>50-78-2</u>	Used to reduce <u>pain, fever, or inflammation</u>
25.	3a,4,5,6,7,7a-hexahydro-1H-4,7-methanoinden-6-yl acetate (Verdyl acetate)	5413-60-5	API Intermedi ate		n-3 Adapalene	<u>106685-40-9</u>	Used in the treatment of mild-moderate acne, and is also used off-label to treat keratosis pilaris.
26.	2-Phenoxyethyl isobutyrate (PEIB)	103-60-6	API Intermedi ate		n-2 Phenoxybenzamine	<u>59-96-1</u>	used as an anti-hypertensive due to its efficacy in reducing the <u>vasoconstriction</u> caused by <u>epinephrine</u>
27.	Aldehyde C-16 (Ethyl 3-methyl-3-phenylglycidate)	77-83-8	API Intermedi ate		n-3 Empagliflozin	<u>864070-44-0</u>	Used together with diet and exercise to treat <u>diabetes</u>
28.	4-Aminophenol	123-30-8	API Intermedi ate		n-2 Phenacetin	62-44-2	Use a <u>pain-relieving and fever-reducing drug</u>
29.	P-Amino benzoic acid	150-13-0	API Intermedi ate		n-1 Paracetamol	103-90-2	Used as to treat <u>pain and fever</u>
30.	Methyl 2-phenylethyl	2550-26-7	API Intermedi		n-2 Benzylpenicillin	61-33-6	Used as an antibiotic to

	ketone (Benzylacetone)		ate					treat number of bacterial infections
31.	2,6-Dimethyl-5-heptenal (Melonal)	106-72-9	API Intermedi ate		n-3	Ornidazole	16773-42-5	Used as an antibiotic to treat protozoan infection
32.	R & D	-	API & API Intermedi ate	0.1				
	Total			400.1				

- 3) 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.
- 4) The proposal was considered in the SEAC video conference meeting dated 15.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) Committee found presentation and submission of project proponent satisfactory.
- 8) 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
- 9) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 1223(E) dated 27.03.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.
- 10) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details		
A-1	Project cost			
Total cost of Proposed Project (Rs. in Crores):				
<table border="1" style="margin: auto;"> <tr> <td>Total Project</td> </tr> <tr> <td>Rs. 9.64 Crores</td> </tr> </table>			Total Project	Rs. 9.64 Crores
Total Project				
Rs. 9.64 Crores				
Break-up of proposed project Cost:				
	Details	Project Cost		

		(Rs. In Crores)				
	Land		2.75			
	Building		1.24			
	Machinery		4.75			
	Env. & Safety		0.5			
	Miscellaneous		0.40			
	Total		9.64			
-						
A-2	Details of CER -					
	PP shall carry out CER activities as below: <ul style="list-style-type: none"> ✓ Solar Electrification through installation of 20 nos. of Solar Street Lights and solar roof-top power systems of 12 kW ✓ Rain water harvesting system providing in 15 households ✓ Overhead tank & RO system ✓ U/g Biogas plant 					
B	Land / Plot ownership details:					
	Industrial Plot no. 428/5 has been transferred to M/s. Niranjan Pharma Chem from Polymers & Transmission Prod. Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/ANK/TRF/PTO/ANK1/1944 on dated 06/12/2021. (Linking between Land ownership and PP is required.)					
B-1	Plot area					
	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;">Total Plot area</td> </tr> <tr> <td style="text-align: center;">2611.06 Sq. m.</td> </tr> </table>			Total Plot area	2611.06 Sq. m.	
Total Plot area						
2611.06 Sq. m.						
-						
B-2	Area adequacy					
	<ul style="list-style-type: none"> ➤ Total plot area of the unit is 2611.06 Sq.mt. ➤ 252 Sq. m. (G.F. + 2) Area will be provided for manufacturing of the proposed products. ➤ 40 Sq. m. Area will be provided for ETP & STP: ➤ 54 Sq. m. area will be provided for Admin building (including OHC) - G.F. & QC Lab - F.F. ➤ 40 Sq. m. area will be provided for Tanks. ➤ Unit shall proposed 6 m wide road and two gates for easily Goods Carrier Movement. 					
	Area Adequacy table:					
	Storage	Period of storage	Maximum storage required (MT)	Type of storage	Required Space	Allocated space,
					sq. m	sq. m
	Raw Material Store	3 days	62	~310 Nos. of Drums (200 L each)	62	110.00
			22.5	~450 Nos. of Bags (50 kg each-Stacked in 3 layers)	22.5	

		8.70	~175 Nos. Of Carboys (50 L each-stacked in 3 layers)	8.70	
		0.54	30 Nos. Of Bromine Crates (180 Glass bottles)	10.00	
Finished Good store	10 days	133.5	~670 Nos. of Bags (50 kg each-Stacked in 3 layers ~500 Nos. of Drums (200 L each)	133.5	252.00
Solvent Storage	2 days	36	~180 Nos. of Drums (200 L each)	36	40.00
HW Storage	30 days	140	Drums and bags in stacking arrangement	47	50
Utility area	--	--	--	45	50

➤ 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

	Total (Sq. meter)
Area in Sq. meter	850 inside
% of total area	33% Inside

Comments:

The condition shall be given that -

- The PP shall develop green belt [850 m2 (33%) inside plant premises. 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

Employment generation

	Total
	40

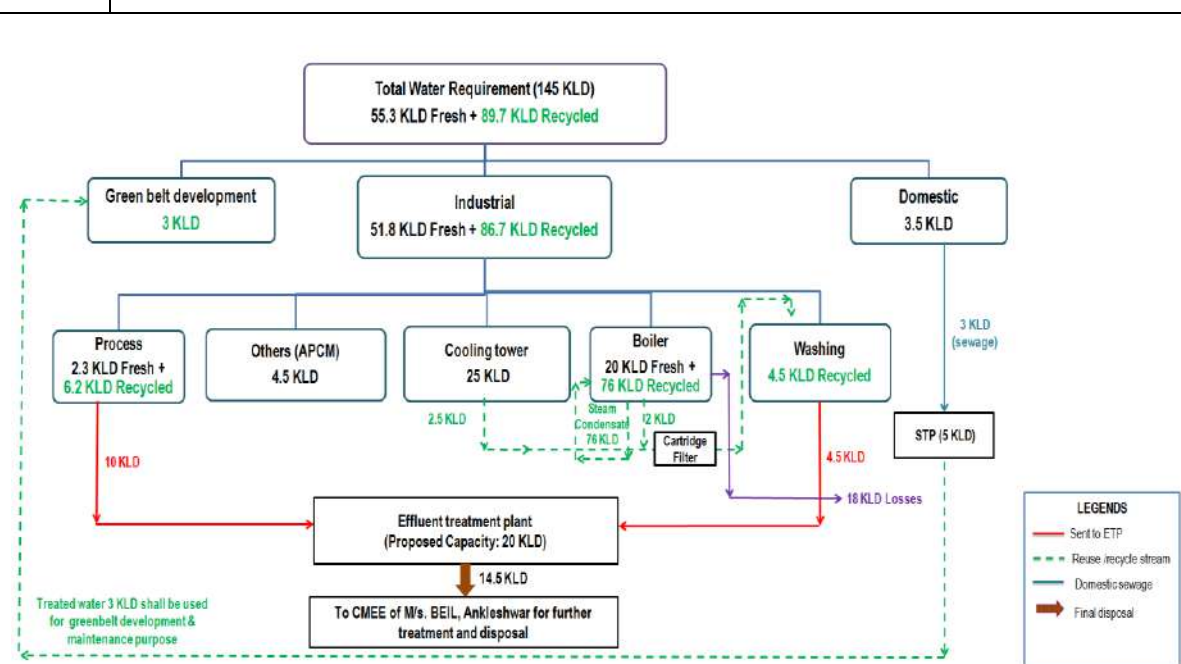
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D	WATER	
D-1	Source of Water Supply	
<p>➤ Ankleshwar GIDC Water supply.</p> <p>Comments:</p> <p>➤ Prior permission from concerned authority shall be obtained for withdrawal of water.</p>		
D-2	Water consumption (KLD)	
-		
	Category	Quantity KLD
	Remarks	
(A) Domestic	3.5	--
(B) Gardening	3	Recycled Quantity: 3 KLD Treated Water from STP shall be used for greenbelt development and maintenance purpose. Hence, the fresh water requirement for greenbelt development & maintenance will be NIL.
(C) Industrial		
Process	8.5	Recycled Quantity: 6.2 KLD Total fresh water requirement for Proposed Production is 2.3 KLD.
Washing	4.5	Recycled Quantity: 4.5 KLD. (Utility blow down water (Boiler: 2 KLD + Cooling tower: 2.5 KLD = 4.5 KLD) shall be passed through cartridge filter and shall be used for washing purpose. So fresh water requirement for Washing shall be NIL.)
Boiler	20 + 76	<i>Note: At Start up stage (First Batch) the Fresh Water Consumption for boiler is 96 KLD & second batch onwards Fresh water consumption is reduced to 20 KLD from 96 KLD due to recycling condensate.</i>
Cooling	25	--
Others (APCM)	4.5	Total fresh water requirement for Proposed APCM is 4.5 KLD.
Industrial Total	138.5	Fresh water requirement : 51.8 KLD, Recycled quantity: 86.7 KLD
Total (A + B + C)	145.0	Total Fresh water requirement : 55.3 KLD, Recycled quantity: 89.7 KLD
-		
Comments:		
<p>➤ 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.</p>		
D-3	Waste water generation (KLD)	
-		
	Category	Waste water (KLD)
	Remarks	
(A) Domestic	3	To STP, Treated water shall be used for Greenbelt

		development & maintenance.
(B) Industrial		
Process	10	Process effluent shall be treated in own ETP consisting of Primary treatment and treated water shall be sent to CMEE of M/s. BEIL, Ankleshwar for total evaporation.
Washing	4.5	Washing effluent shall be treated in own ETP consisting of Primary treatment and treated water shall be sent to CMEE of M/s. BEIL, Ankleshwar for total evaporation.
Boiler	2	Recycled: 2 KLD Boiler blow down of 2 KLD shall be passed through cartridge filter and shall be used for washing purpose and then shall be given Primary treatment in ETP.
Cooling	2.5	Recycled: 2.5 KLD Cooling tower blow down of 2.5 KLD shall be passed through cartridge filter and shall be used for washing purpose and then shall be given Primary treatment in ETP.
Others (APCM)	--	--
Total Industrial waste water	19	Discharge quantity: 14.5 KLD + Recycled water: 4.5 KLD
Total [A + B]	22	--
-		
<u>Comments:</u>		
➤ 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)	
3 KLD Domestic Waste Water will be treated in STP & treated wastewater will be reused in gardening purpose within premises.		
<u>Comments:</u>		
➤ Domestic wastewater generation shall not exceed 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.		
➤ Unit shall provide STP with adequate capacity.		
D-5a	Break-up of waste water disposal & facility (For Industrial)	
	Sr. no.	Quantity KLD
	1	14.5 KLD
	Total	14.5
	Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)	

Membership certificate of M/s.BEIL-Ankleshwar vide no. Ref. BEIL/ANK/2022 dated 29.03.2022

D-5b Simplified water balance diagram



D-5c Summary

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	145	--
Quantity to be recycled (B)	89.7	--
Total fresh water requirement (C)	55.3	--
Ensure Total water requirement = Fresh water + Recycled water i.e. A = B + C		

Comments:

- Total water requirement for the project shall not exceed 145 KLD. Unit shall reuse 89.7 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 55.3 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
- Management of Industrial effluent shall be as under:
 - Industrial effluent shall be treated in own ETP consisting of Primary treatment and treated effluent shall be sent to CMEE of M/s. BEIL, Ankleshwar for further treatment & disposal.
- Unit shall provide STP and ETP with adequate capacity.
- 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 :300 KVA					
E-2	Flue gas emission details					
-						
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)
3.	Briquette fire boiler Capacity: 2 TPH	30	Briquettes of Bio-coal	7 MT/Day	PM, SO ₂ , NO _x	Multi cyclone + Bag filter + Water scrubber
4.	Gas fire Boiler Capacity: 2 TPH	20	Natural Gas	175 Nm ³ /h	PM, SO ₂ , NO _x	Adequate stack height shall be provided
5.	DG Set (Standby) Capacity: 300 KVA	11	Diesel	60 L/h	PM, SO ₂ , NO _x	Adequate stack height shall be provided
-						
E-3	Process gas					
-						
Sr. No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)		
1	Process Emission Vessel – Reaction carried out for production of 1-(2,4-difluorophenyl)-2-(1H-1,2,4-triazol-1-yl) ethanone (DFTA)	HCl	20	Two stage water Scrubber		
	Process Emission Vessel – Reaction carried out for production of 1-(2,4-dichlorophenyl)-2-(1-imidazolyl) ethanol and (αS)-2,4-dichloro-α-(chloromethyl)-benzenemethanolmethanesulfonate (DCPIE)					
2	Process Emission Vessel – Reaction carried out for production of 4-Bromo-4-fluorobenzene	HBr	20	Two stage water Scrubber		
	Process Emission Vessel – Reaction carried out for production of Ethyl 2-bromo butyrate					
-						

E-4 Fugitive emission details with its mitigation measures.

- For Fugitive emission such as VOCs, VOC detectors will be installed.

Sr. No.	Probable sources	Proposed Control measures
1.	Pump glands and seals	All pumps handling HAP chemicals with low V.Ps & pressurized gas shall have mechanical seals which are presently best for preventing emissions.
2.	During reactions & Solvent recovery systems	All reactors shall be closed and provided with condenser with chilled brine water and cooling water circulation for maximum vapor recovery Solvent recovery from distillation of more than 95% is achieved Temperature and pressure conditions shall be stringently controlled as per the process requirement and optimized with low temperature and vacuum conditions wherever feasible.
3.	Vents of storage tanks – during withdrawal to day tanks	Liquid raw materials will be charged by pumping & closed loops. Dedicated measuring tanks for each reactor. Suitable stoichiometric calculations will be done and followed to regulate the quantity of reactants to be charged to reaction vessels in order to avoid use of excess chemicals, which in turn will minimize organic load in the effluent.
4.	Pressure Relief Valve Emissions from pipelines	For highly pressurized lines, pressure equalization shall be followed with return lines so that the pipelines as well as connected equipment do not get pressurized unduly.
5.	Release from Sampling Lines	Shall be carried out using a closed loop sampling system.
6.	Emissions from Bulk Storage Tanks during storage, loading and unloading	PSVs, Rupture discs to be provided wherever applicable. Tank Pressure equalization shall be applied wherever required Closed Transfer systems
7.	Valves, Flanges, plugs and instrument connections	Welded pipes to be used wherever feasible Suitable gasket material to be used Suitable gland packing to be used in valves Periodic inspection and maintenance of pipes and pipe fittings
8.	Chemical vapors during filtration and drying process	Covered systems to be adopted, workers shall be provided PPE, dust extraction systems, local exhausts and roof top ventilators, wherever required
9.	Drum filling machinery	Covered transfers systems shall be adopted, workers shall be provided PPEs, minimum manual operations, local exhausts and roof top ventilators
10.	Warehouse storing drums and bags	Spillages shall be strictly prevented by providing drip pans, proper handling equipment, Spill control procedures and equipment shall be provided

- Leak Detection and Repair (LDAR) program shall be implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment.

- To control fugitive emission from process / reaction, all reactor condensers shall be connected to a scrubber to minimize loss of solvents / fugitive emission in to the

atmosphere.

Comments for E2, E3 & E4:

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

F Solvent management, VOC emissions etc.

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

Solvent Recovery Table

Product Sr. No.	Product	Solvent	Solvent charged to reactor	Recovered Solvent	
			per batch (kg)	per batch (kg)	% Recov
1	Telmisartan (4'[[4-Methyl-6-(1-methyl-1H-benzimidazol-2-yl)-2-propyl-1H-benzimidazol-1-yl] methyl] biphenyl-2-carboxylic acid)	Methylene dichloride	352.00	341.00	97
		Acetone	352.00	339.00	96
		Methanol	440.00	424.00	96
2	Fluconazole	Toluene	608	599.00	99
		Ethyl acetate	152	148.00	97
3	Rosuvastatin calcium (+)(3R, 5S)-7-[4-(4-fluorophenyl)-6-isopropyl-2-(N-methyl-N-methanesulfonylamino)pyrimidin-5-yl] 3,5-dihydroxy-6(E)-heptenoic acid calcium salt)	Methanol	752	715	95
4	Amiodarone hydrochloride ((2-Butyl-3-benzofuranyl) [4-[2-(diethylamino)ethoxy]-3,5-diiodophenyl] methanone hydrochloride)	Toluene	666	633	95
5	Oxcarbazepine (10,11-dihydro- 10-oxo- 5H-dibenz(b,f)azepine- 5-Carboxamide)	Toluene	801	787	98
		Methanol	751	737	98
6	Luliconazole ((2E)-2-[(4R)-4-(2,4-dichlorophenyl)-1,3-dithiolan-2-ylidene]-2-imidazol-1-ylacetone nitrile)	Ethyl Acetate	1332	1265	95
		Methylene chloride	1332	1270	95
		Acetone	1332	1260	95
		Dimethyl Sulphoxide	1166	1120	96
7	1-(2,4-difluorophenyl)2- (1H-	Toluene	510	495	97

	1,2,4-triazol-1-yl) ethanone (DFTA)	Methanol	765	745	97
8	1-(2,4-dichlorophenyl)-2-(1-imidazolyl) ethanol and (α S)-2,4-dichloro- α -(chloromethyl)-benzenemethanolmethanesulfonate (DCPIE)	Methanol	858	829	97
		Methylene chloride	572	549	96
9	(2-butyl-1-benzofuran-3-yl) (4-hydroxy-3,5-diiodophenyl) methanone (DIIDO)	Isopropyl alcohol	1036	995	96
		Toluene	2131	2024	95
		Methanol	592	562	95
10	N-Acetyl Thiazolidine-4-Carboxylic Acid (NATCA)	Pyridine or TEA	555	527	95
		Acetic anhydride/ Acetic acid	162	154	95
16	Bromo OTBN (4-Bromomethyl-2-cyanobiphenyl)	Methylene di chloride	1700	1615	95
		Methanol	1050	1000	95
19	Chloroacetic acid methyl ester	Methanol	400	380	95
20	Chloroacetic acid isopropyl ester	Methanol	450	430	96
28	4-Aminophenol	Methanol	300	285	95
29	P-Amino benzoic acid	Methanol	300	285	95
30	Methyl 2-phenylethyl ketone (Benzylacetone)	Acetone	358	285	95
		Methanol	450	432	96
31	2,6-Dimethyl-5-heptenal	Methanol	400	380	95
F-2 VOC emission sources and its mitigation measures					
Measures for achieving maximum solvent recovery and minimize VOC generation:					
<ul style="list-style-type: none"> Solvent recovery shall be carried out by simple distillation directly from reactor vessels provided with distillation assembly or by fractional distillation in dedicated distillation units depending on the solvent composition. All unit processes, unit operations, related temperature and pressure conditions shall be stringently controlled through interlocks and closed systems Maintenance of the pipeline and valves & fittings will be carried out regularly to avoid any leakages. Distillation assembly on reactors shall comprise of packed column, primary condensers with cooling water circulation and secondary condensers with chilled water circulation to obtain minimum 95% recovery. Vent from secondary condenser shall be connected to Activated Carbon tower to trap solvent traces if any. Efficiency of tower shall be maintained by maintaining Iodine value of carbon. All the Flange joints of the pipe lines which carry solvents will be covered with flange guards. VOC detectors will be installed at various places to identify any fugitive emissions. Minimum number of flanges, joints and valves in pipelines shall be provided. 					
F-3 LDAR proposed:					
Leak Definition					
<ul style="list-style-type: none"> A leak is detected whenever the measured concentration exceeds the threshold standard 					

(i.e., leak definition) for the applicable regulation.

- Leak definitions vary by regulation, component type, service (e.g., light liquid, heavy liquid, gas/vapor), and monitoring interval.
- Many equipment leak regulations also define a leak based on visual inspections and observations (such as fluids dripping, spraying, misting or clouding from or around components), sound (such as hissing), and smell.

Following steps shall be followed for effective implementation of LDAR Program:

- Process Controls
- Emissions control program
- Selection of appropriate method for leak detection
- Scheduling and checklist for Leak Detection
- Methods for rectification of identified leaks
- Frequency of Monitoring
- Record keeping of LDAR Program

Comments:

- Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

G Hazardous waste

G-1 Hazardous waste management matrix

Sr. no.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules.	Quantity (MT/ Annum)	Management of HW
1.	Used or Spent oil	From machinery	Cat.: 5.1 Sch.: I	6	Collection, Storage, Decontamination, and Transportation & Disposal by recycle or reuse or send back to supplier.
2.	Empty barrels/ Containers/ Liners contaminate with hazardous chemicals/ wastes	From Raw material containers/ bags/ drums/ liners	Cat.: 33.1 Sch.: I	240	Collection, Storage, Transportation & Disposal by reusing within plant as lubricant or selling it to authorized agency.
3.	Chemical sludge from waste water treatment	From ETP	Cat.: 35.3 Sch.: I	48	Collection, Storage, Transportation & Disposal to common TSD facility.

4.	Distillation Residue	From distillation step during production of Product no. 1 to 6, 7 to 10, 14 to 18, 19 to 27, 30, 31	Cat.: 20.3 Sch.: I	420	Collection, Storage, Transportation & Disposal by sending for Co-processing / CHWIF
5.	Process Residue/Process Sludge	From production of Product no. 7, 8, 9, 11 & 12	Cat.: 28.1 Sch.: I	576	Collection, Storage, Transportation & Disposal by sending for Co-processing / CHWIF
6.	Spent Catalyst	During Production of product no. 28 to 31	Cat.: 28.2 Sch.: I	70	Collection, Storage, Transportation & Disposal by sending for regeneration
7.	Spent Carbon	From filtration step during production of product 1,2,4 & 6	Cat.: 28.3 Sch.: I	36	Collection, Storage, Transportation & Disposal by sending for Co-processing / CHWIF
8.	Off specification products/raw material OR failed batch	From manufacturing process & from R&D products	Cat.: 28.4 Sch.: I	24	Collection, Storage, Transportation & Disposal by sending for Co-processing / CHWIF
9.	Spent Solvent	From production of Product no. 1 to 6, 7 to 10, 16, 19, 20, 28 to 31	Cat.: 28.6 Sch.: I	4000	Recovered solvent shall be Reused in production through distillation columns having Primary and secondary condensers inbuilt with reactors. Methanol (1425 MT/Annum): Collection, Storage, Transportation & Disposal by reuse within premises.
10.	30% Trimethylsulphonium iodide solution	During Production of Fluconazole	Cat.: B15 Sch.: II	864	Collection, Storage, Transportation & Disposal by sell out to authorized users who are having authorization with valid CCA/CTO and permission under Rule 9
11.	25-30% HCl Solution	From water scrubber attached to reaction vessel of product no. 7 & 8	Cat.: B15 Sch.: II	854	Collection, Storage, Transportation & Disposal by reuse in production and remaining quantity to be used in ETP for neutralization.

12.	40-45% HBr solution	From water scrubber attached to reaction vessel of 4-Bromo-4-fluorobenzene & Ethyl 2-bromo butyrate, during production of Benzyl Bromide	Cat.: B15 Sch.: II	1958	Collection, Storage, Transportation & Disposal by sell out to authorized users who are having authorization with valid CTO and permission under Rule 9 OR reuse as raw material in production.
13.	20-30% Sodium Bromide Solution	During Production of 2-Bromo-2-nitropropane-1,3-diol (BNP) & 2,2-Dibromo-3-Nitrilopropionamide (DBNPA)	Cat.: B10 Sch.: II	2184	Collection, Storage, Transportation & Disposal by sell out to authorized users who are having authorization with valid CTO and permission under Rule 9
<p>Comments:</p> <ul style="list-style-type: none"> ➤ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement. ➤ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB. 					
G-2	Non- Hazardous waste management matrix				
<ul style="list-style-type: none"> ✓ Fly Ash generation will be 264 MTPA. ✓ STP sludge generation will be 12 MTPA <p>Comments:</p> <ul style="list-style-type: none"> ➤ Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit. ➤ STP sludge shall be collected and used as manure in gardening activity. 					
H	SAFETY details				
H-1	Details regarding storage of Hazardous chemicals				
-					
Sr. no.	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical	
Existing					
1.	45% Hydrobromic acid solution	10 KL	2	Toxic	
2.	40-50% Sodium hydroxide solution	10 KL	1	Toxic	
3.	20-30% Sodium Bromide solution	10 KL	3	Toxic	
4.	30% Trimethyl sulphonium iodide solution	5 KL	1	Toxic	

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

- In drum storage area in warehouse, toxic and flammable materials shall be stored separately.
- The area shall be provided with small bund wall (100 mm) to contain any spill
- The warehouse shall be well ventilated.
- The warehouse shall have emergency exits
- Safety shower & eye washer to be placed near warehouse
- Smoke detector and DCP extinguishers shall be installed to get early warning and control any fire incident

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
Flammable	<ul style="list-style-type: none"> • Smoke detector shall be provided at all places handling and storing flammable material. • Separate Storage shall be provided • Suitable foam and DCP fire extinguishing system shall be provided • The tanks shall be provided with breather valve with flame arrester and emergency vent. • Tanks shall be segregated with dyke • Proper ventilation to be provided • PPEs & SCBA shall be provided to workers • First aid and medical facilities to be provided
Toxic & Corrosive	<ul style="list-style-type: none"> • DCP extinguishers shall be kept in adequate quantity inside storage shed • Tank dykes shall be constructed with acid proof material. • Unloading shall be carried out using standard procedures for acids • Proper ventilation to be provided • PPEs & SCBA shall be provided to workers • First aid and medical facilities to be provided

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

Exothermic Reaction - Not Applicable

Chlorination Reaction: Not Applicable

Type of Process	Safety measures including Automation
Hydrogenation process	<ul style="list-style-type: none"> • Hydrogen cylinder should be placed at distance (min 15 m) from reactor area. • Safety relief valve to be provided. Effective earthing to be provided between the cylinders and vehicle to reduce risk of ignition from a leak. • Clamping device to minimize relative movement of the cylinders without

	<p>causing unfavourable stresses.</p> <ul style="list-style-type: none"> • Metal to metal contact to be avoided between the cylinders and cylinder and frame structure. • Manifolding should minimize the possibility of vibrations. • PLC automation to be implemented. • Interlocking / Cut-off system shall be provided • Special training shall be provided for the operators for operating hydrogenation. • Hydrogenator shall be never left unattended when in operation. • Line jumpers and proper earthing shall be provided for static discharge. • Hydrogen detectors shall be available at Hydrogenation plant. 																		
Bromination	<ul style="list-style-type: none"> • Containments provided to contain spills, proper ventilation provided • Work instructions for bromine charging displayed in local language • Chemical safety goggles, face shields, SCBA set, Aprons, rubber gloves, etc. provided. Only trained employees handle bromine charging. • Training given to employees for bromine handling and charging • First aid and medical facilities 																		
H-3 Details of Fire Load Calculation																			
<table border="1"> <tr> <td>Total Plot Area:</td> <td>2611.06 m²</td> </tr> <tr> <td>Area utilized for plant activity:</td> <td>882 m²</td> </tr> <tr> <td>Area utilized for Hazardous Chemicals Storage:</td> <td>316 m²</td> </tr> <tr> <td>Number of Floors:</td> <td>G+2 Floors in production Building</td> </tr> <tr> <td>Water requirement for firefighting in KLD:</td> <td>3.6 KL</td> </tr> <tr> <td>Water storage tank provided for firefighting in KLD:</td> <td>100 KL</td> </tr> <tr> <td>Details of Hydrant Pumps:</td> <td>Jockey Pump: 10.8 m³/hr.</td> </tr> <tr> <td>Nearest Fire Station :</td> <td>Ankleshwar Fire station</td> </tr> <tr> <td>Applicability of Off Site Emergency Plan:</td> <td>Not Applicable</td> </tr> </table>		Total Plot Area:	2611.06 m ²	Area utilized for plant activity:	882 m ²	Area utilized for Hazardous Chemicals Storage:	316 m ²	Number of Floors:	G+2 Floors in production Building	Water requirement for firefighting in KLD:	3.6 KL	Water storage tank provided for firefighting in KLD:	100 KL	Details of Hydrant Pumps:	Jockey Pump: 10.8 m ³ /hr.	Nearest Fire Station :	Ankleshwar Fire station	Applicability of Off Site Emergency Plan:	Not Applicable
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Comments:																			
<ul style="list-style-type: none"> ➤ 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:																			
Shall be obtained after receipt of EC.																			
H-5 Details of Occupational Health Centre (OHC):																			
-																			
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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.

Details of Environmental Management Plan (EMP)

As below:

S N	Unit	Detail	Capital Cost (Rs. In Lakh/ Annum)	Operating Cost (Rs. In Lakh/ Annum)	Maintenance Cost (Rs. In Lakh/ Annum)	Total Recur Cost (Rs. In Lakh/ Annum)
1	Waste Water	ETP (20 KLD) & STP (5 KLD)	50	153	17	17
2	Air	Installation of Scrubber systems for process gas emission control, and construction of stacks with platform and sampling arrangements, local exhaust and ventilation systems	60	72	8	80
3	Hazardous Management	Construction of storage areas for different types of wastes in compliance with the HW rules together with necessary infrastructure and equipment for collection and transport	60	180	20	20
4	Fire & Safety	Fire extinguishers, fire fighting maintenance & Fire hydrant	20	7.2	0.8	8
		Automation control system- PLC	15	4.5	0.5	5
5	AWH Monitoring	In-house analytical facilities, third party monitoring expenses	5	2.7	0.3	3
6	Green Belt Development	Plantation of green belt area, Maintaining the greenbelt by hiring	2	1.8	0.2	2

		agency, irrigation and fertilizer, pesticides costs					
7	Occupational Health	First Aid centre, PPE, Medical examinations and FMO charges	3	3.6	0.4	4	
Total			215	424.8	47.2	472	
8	CER	CER activities	19.5				
		<ul style="list-style-type: none"> • Solar Electrification through installation of 20 nos. of Solar Street Lights and solar roof-top power systems of 12 kW • Rain water harvesting system providing in 15 households • Overhead tank & RO system • U/g Biogas plant 					
Comments:							
<ul style="list-style-type: none"> ➤ 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. 							

11) DELIBERATION AND RECOMMENDATION:

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

Conditions with which Environment Clearance is recommended:

Construction Phase

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

- h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.
- i) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. Project Proponent (PP) shall strictly abide by the outcome/decision of Hon'ble Supreme Court of India in Civil Appeal no. 8478/2020 regarding operation of the Hon'ble NGT orders dated 10/07/2019 & 14/11/2019
2. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after the 31st December 2021, 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 subsequent amendments.
4. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
5. (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.
6. 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**].
7. 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.
8. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained
9. **Safety & Health:**
 - a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals

- b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
- c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
- d) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
- e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
- f) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
- g) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
- h) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
- i) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
- j) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
- k) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
- l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

WATER

10. Total water requirement for the project shall not exceed 145 KLD. Unit shall reuse 89.37 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 55.3 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
11. The industrial effluent generation from the project shall not exceed 19 KLD.
12. Management of Industrial effluent shall be as under:
 - ✓ Industrial effluent shall be treated in own ETP consisting of Primary treatment and treated effluent shall be sent to CMEE of M/s. BEIL, Ankleshwar for further treatment & disposal.
 - ✓ Unit shall send waste water to Common MEE only after achieving inlet norms prescribed by GPCB ensuring content of effluent for COD so as not to get air borne during spray drying after APCM in order to achieve no adverse impacts on Environment and Human Health.
13. Domestic wastewater generation shall not exceed 3 KL/day for proposed project and it shall be treated in STP.It

shall not be disposed off into soak pit. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.

14. 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.
15. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
16. Unit shall provide STP and ETP with adequate capacity.
17. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.
18. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
19. Proper logbooks of ETP, reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

20. Unit shall not exceed fuel consumption for Boilers and D G Set as per the point no. E-2 as mentioned above.
21. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
22. Unit shall provide adequate APCM with process gas generation sources as the point no. E-3 as mentioned above.
23. The fugitive emission in the workzoneenvironment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety& Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
 - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
 - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
 - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
24. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
25. For control of fugitive emission, VOCs, following steps shall be followed :
 - ✓ Closed handling and charging system shall be provided for chemicals.
 - ✓ Reflux condenser shall be provided over Reactors / Vessels.
 - ✓ Pumps shall be provided with mechanical seals to prevent leakages.
 - ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.

26. Solvent management shall be carried out as follows:

- ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
- ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
- ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
- ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
- ✓ Solvents shall be stored in a separate space specified with all safety measures.
- ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
- ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.

27. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, HCl, HBr and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

28. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.

29. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.

30. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.

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

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

33. 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.

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

GREENBELT AREA

35. The PP shall develop green belt [850 m² (33%) inside plant premises] as per the undertaking submitted before

SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

36. The project proponent shall carry out the entire activities [Solar Electrification through installation of 20 nos. of Solar Street Lights and solar roof-top power systems of 12 kW, Rain water harvesting system providing in 15 households, Overhead tank & RO system, U/g Biogas plant] proposed under CER shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
37. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

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

04	SIA/GJ/IND3/243866/2021	M/s. AARNEA BIODOME PRIVATE LIMITED Plot No : 22 , R.S.NO. : 23/12 P-2, 23/18 P-1, 23/25 P-2, 23/26, NH 27 Bamanbor-Morbi Highway, Village : Rangpar, Taluka : Wakaner, District : Morbi-363621.	EC
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Category of the unit: **5 (f)**

Project status: **New**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	SIA/GJ/IND3/243866/2021
1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	08.12.2021
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. &Date :	Not applicable as project is categorized as B2
1.7. Technical expert / Environmental Consultant :	M/s. T.R. Associates
1.8. SEAC Meeting No. and Date:	381 st meeting dated 15.03.2022
1.9. Compliance of Existing EC & CCA	Not Applicable

2) This is a new project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

Product Table

S.N O.	Product Name	Quantity	Group	CAS no. (produc	Type/ category of	In case of intermediate stage of API	Said API is used for/end use of said API
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			p	t)	product (API/intermediate)	Stage i.e. N-1, n-2, etc	Name of API in which intermediate used/ end use of said intermediate	CAS no. (API)	
1.	Paracetamol	20	A	103-90-2	API	--	--	--	Painkiller
2.	Ibuprofen			15687-27-1	API	--	--	--	anti-inflammatory
3.	Metformin			657-24-9	API	--	--	--	type 2 diabetes
4.	Pentoxifyline			6493-05-6	API	--	--	--	to improve the symptoms of a certain blood flow problem in the legs/arms
5.	Albendazole			54965-21-8	API	--	--	--	for infections
6.	Triacetin			102-76-1	API	--	--	--	manufacturing of capsules and tablets
7.	Pantoprazole sodium			102625-70-7	API	--	--	--	to treat stomach problems such as acid reflux.
8.	Esomeprazole	15	B	217087-09-7	API	--	--	--	to treat gastroesophageal reflux disease,
9.	Aripiprazole			129722-12-9	API	--	--	--	to treat the symptoms of schizophrenia, bipolar I disorder and major depressive disorder.
10.	Rabeprazole			117976-89-3	API	--	--	--	used for the treatment of gastroesophageal reflux disease
11.	Lansoprazole			103577-45-3	API	--	--	--	to treat certain stomach and esophagus problems
12.	Omeprazole			73590-58-6	API	--	--	--	to treat symptoms of gastroesophageal reflux disease
13.				23593-	API	--	--	--	to treat skin

	Clotrimazole			75-1					infections
14.	Pregabalin	10	C	148553-50-8	API	--	--	--	to treat pain caused by nerve damage
15.	Sertraline HCL			79617-96-2	API	--	--	--	To treat depression and other mood disorders.
16.	Topiramate			97240-79-4	API	--	--	--	to treat the symptoms of migraine headaches, seizures and Lennox-Gastaut Syndrome.
17.	Levetiracetam			102767-28-2	API	--	--	--	use to treat epilepsy
18.	Oxcarbazepine			28721-07-5	API	--	--	--	use to treat epilepsy
19.	Sodium Valproate			1069-66-5	API	--	--	--	used to prevent migraine headaches.
20.	Benfotiamine			22457-89-2	API	--	--	--	Used for nerve damage caused by diabetes.
21.	Chlorzoxazone	10	D	95-25-0	API	--	--	--	To treat muscle spasm
22.	Fenofibrate			49562-28-9	API	--	--	--	used to treat the symptoms of high cholesterol and triglycerides in the blood.
23.	Cetirizine dihydrochloride			83881-52-1	API	--	--	--	used to relieve allergy symptoms
24.	Fluconazole			83881-52-1	API	--	--	--	used to prevent and treat a variety of fungal and yeast infections.
25.	Naproxen			22204-53-1	API	--	--	--	Naproxen is used to relieve pain from various conditions such as headache, muscle aches, tendonitis, dental pain, and menstrual cramps.
26.	Levamisole HCL			16595-80-5	API	--	--	--	used to treat infections of the worm.

27.	Glimipride	2	E	93479-97-1	API	--	--	--	used to treat type 2 diabetes.
28.	Rosuvastatin Calcium			147098-20-2	API	--	--	--	used to lower LDL cholesterol and triglycerides
29.	Atorvastatin Calcium			134523-00-5	API	--	--	--	to treat high cholesterol
30.	Etoricoxib			202409-33-4	API	--	--	--	Arthritis
31.	Imatinib			152459-95-5	API	--	--	--	Use in Cancer
32.	Apixaban			503612-47-3	API	--	--	--	To reduces blood clotting and reduces the risk of stroke.
33.	Bendamustin			3543-75-7	API	--	--	--	used to treat chronic lymphocytic leukemia.
34.	Telmisartan	8	F	144701-48-4	API	--	--	--	to treat high blood pressure.
35.	Losartan potassium			124750-99-8	API	--	--	--	to treat high blood pressure.
36.	Valsartan			137862-53-4	API	--	--	--	to treat people with heart failure.
37.	Amlodipine			88150-42-9	API	--	--	--	to treat high blood pressure.
38.	Fexofenadine			83799-24-0	API	--	--	--	to treat the symptoms of seasonal allergies
39.	Clopidogrel bisulphate			120202-66-6	API	--	--	--	to prevent heart attacks and strokes
40.	Escitalopram oxalate			219861-08-2	API	--	--	--	to treat depression and anxiety.
41.	Sodium picosulphate			130730 1-38-7	API	--	--	--	to clean out the intestines before surgery or certain procedures.
42.	2-(Diethylamino)ethyl Chloride Hydrochloride	15	G	869-24-9	Intermediate	n-3	Clomifen citrate	869-24-9	Aminodarone,But elamine citratr, Flurazepam and Naftidrofluryl Clomifen citrate
43.	3-(Dimethylamino)propyl chloride hydrochloride			5407-04-5	Intermediate	n-3	Citalopram HBr	5407-04-5	Acepromaxine,A mitriptiline, Bencyclaine, Ben zidamine,Citalopram, Clomipramine and Imipramine,

									Citalopram HBr
44.	2-Chloromethyl-3,4-dimethoxy pyridine Hydrochloride			72830-09-2	Intermediate	n-3	Pentoprazole sodium	102625-70-7	the treatment of stomach ulcers, Pentoprazole sodium
45.	Methyl Nicotinate			93-60-7	Intermediate	n-3	Rubefacient	--	Pain relief, Rubefacient
	R&D	0.1							
	Total	80.1							

- 3) 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.
- 4) The proposal was considered in the SEAC video conference meeting dated 15.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) PP submitted satellite map showing that there is no any water bodies, villages, School, monuments etc. within 500 m radius of the project site. Aerial distance of nearest habitat of village Rangpar is @ 1.3 Km. PP also submitted that there are no Eco sensitive zones, wild life sanctuaries within the 10 km area from the boundary of the project site.
- 8) Committee found presentation and submission of project proponent satisfactory.
- 9) 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
- 10) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 1223(E) dated 27.03.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.
- 11) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details
A-1	Project cost	
Total cost of Proposed Project (Rs. in Crores):		
	Total Project	
	Rs. 7 Crores	

Break-up of proposed project Cost:

Details	Project Cost (Rs. In Crores)
Land	0.4
Building	2.3
Machinery	2.6
Env. & Safety	1.7
Miscellaneous	
Total	7

A-2 Details of CER -

PP shall carry out CER activities as below:

- ✓ Ro facility (200 liter per hour) plus maintenance for drinking water and scholarship for students in Mesariya High school (1st year and 2nd year)
- ✓ Solar panel (12 kW) in Rangpar and Jalida village in 1st year and its maintenance in 2nd year.

B Land / Plot ownership details:

Land is acquired by PP in name of AARNEA BIODOME PVT LTD. Certificate number of land document (dastavej copy) is IN-GJ50318019040321T dated 2nd November, 2021. Non-Agriculture permission has been obtained.

B-1 Plot area

Total Plot area
7310.13 Sq. m.

B-2 Area adequacy

Area Adequacy table:

Sr. No	Particulars	Area (in Sq. mt.)	% of Total Area
1	Boiler and TFH area	143.76	1.97
2	Cooling Tower and D. G. set area	120	1.64
3	ETP area	132	1.81
4	Process area	1402.23 (G+2)	19.18
5	RM and FG store	225 (G+2)	3.08
6	Solvent Tank storage	735	10.05
7	Solvent Drum storage	735	10.05
8	Hydrogenation process area	60	0.82
9	OHC	15	0.21
10	Security cabin	09	0.12
11	Gas Cylinder storage	25	0.34
12	Greenbelt area	2425.67	33.18
13	Road area	1059.71	14.50
14	Open area	222.7	3.05

	Total Area	7310.13	100 %
<p>➤ Hence, adequate area is available for proposed new Facility.</p> <p>Comments:</p> <p>➤ 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.</p>			
B-3	Green belt area		
		Total (Sq. meter)	
	Area in Sq. meter	2425.67	
	% of total area	33.18	
<p>Comments:</p> <p>The condition shall be given that -</p> <p>➤ The PP shall develop green belt (2425.67 Sq. m i.e. 33.18 % 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.</p>			
C	Employment		
Employment generation			
		Total	
		18	
	-		
D	WATER		
D-1	Source of Water Supply		
<p>➤ Borewell</p> <p>Comments:</p> <p>➤ Prior permission from concerned authority shall be obtained for withdrawal of water.</p>			
D-2	Water consumption (KLD)		
	-		
	Category	Quantity KLD	
	(G) Domestic	1.4	
	(H) Gardening	4.82	
	(I)		

RO 1(Process + Boiler)	88.56 (66.85+4)
Washing	2
Cooling	20.36
Others (Scrubber)	7.05
Industrial Total	117.97
Grand Total (A+B+C)	124.19

Comments:

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

D-3 Waste water generation (KLD)

Category	Waste water KLD
(E) Domestic	1.31
(F) Industrial	
RO 1 reject	17.71
Process	82.7
Washing	0.4
Boiler	2
Cooling	2.03
Others (Scrubber)	6.96
Total Industrial waste water	111.8
Total [A + B]	113.11

Comments:

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

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

1.31 KLD Domestic Waste Water will be treated in ETP & treated wastewater will be reused in Industrial purpose.

Comments:

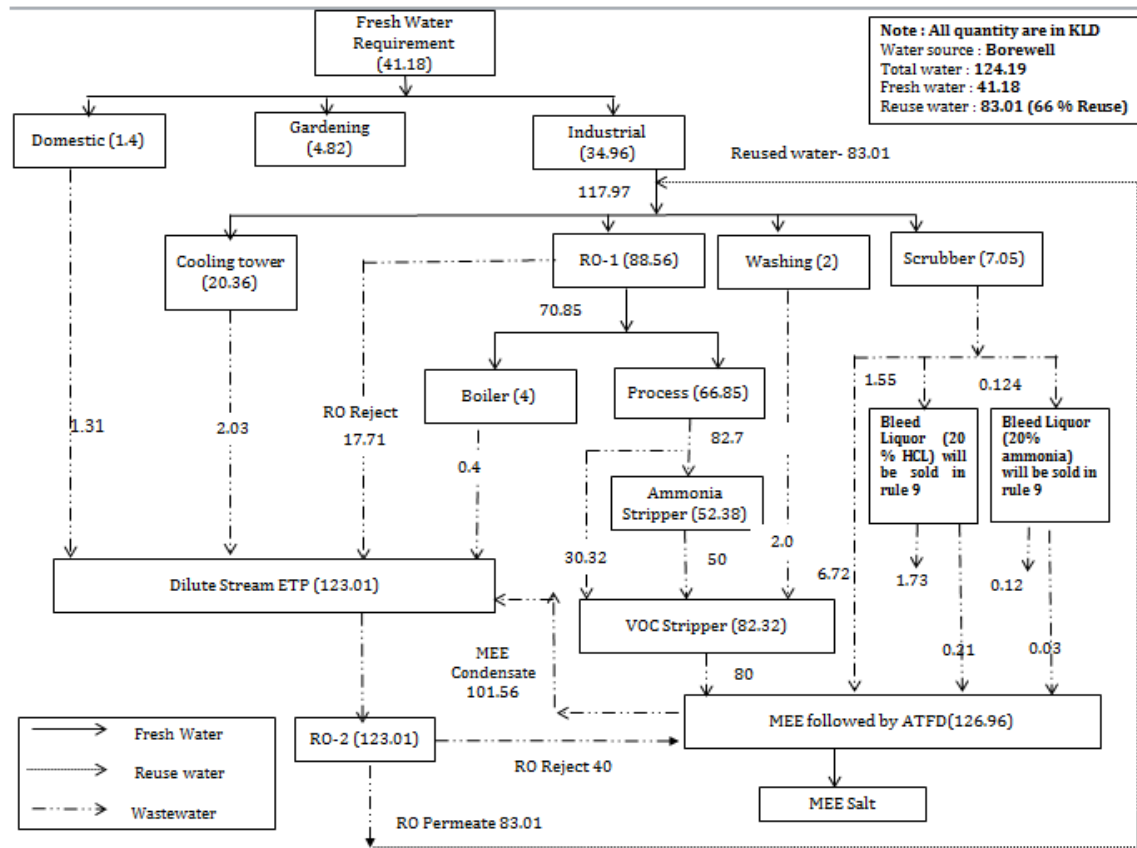
- Domestic wastewater generation shall not exceed 1.31 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.

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

Sr. no.	Quantity KLD	Facility
1	17.71	RO-1 reject will be treated in in-house

			ETP
2	82.7		Total process wastewater will be treated in Ammonical stripper, VOC stripper and MEE
3	0.4		Boiler blow down will be treated in in-house ETP
4	2		Washing wastewater will be treated in VOC stripper and MEE
5	2.03		Cooling tower blowdown will be treated in in-house ETP
6	6.96		Scrubber wastewater will directly goes to MEE
Total	111.8		
Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)			
Not applicable			

D-5b Simplified water balance diagram



D-5c Summary

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	124.19	
Quantity to be recycled (B)	83.01	
Total fresh water requirement (C)	41.18	
Ensure Total water requirement = Fresh water + Recycled water		

i.e. $A = B + C$ **Comments:**

13. Total water requirement for the project shall not exceed 124.19 KLD. Unit shall reuse 83.01 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 41.18 KLD and it shall be met through Borewell only. Prior permission from concerned authority for withdrawal of water shall be obtained.

14. Management of Industrial effluent shall be as under:

- ✓ Concentrated stream i.e. from Process (82.7 KLD (52.38 KLD Ammonical wastewater and 30.32 KLD Non Ammonical Wastewater)), washing 2 KLD and 6.96 KLD from Scrubber shall be generated. Out of which 52.38 KLD Ammonical wastewater shall be passed through Ammonia stripper (Output 50 KLD from Ammonia stripper). 30.32 KLD Non Ammonical wastewater form process, 50 KLD effluent from Ammonia stripper and 2 KLD washing wastewater shall be treated in VOC stripper. 80 KLD Effluent from VOC stripper and 6.96 KLD From scrubber and 40 KLD RO-2 reject shall be treated in MEE followed by ATFD.
- ✓ MEE and ATFD condensate 101.56 KLD, 0.4 KLD boiler blow down, 17.71 KLD RO-1 Reject, 2.03 KLD cooling tower blow down and 1.31 KLD Domestic wastewater shall be treated in ETP.
- ✓ ETP sludge shall be disposed off to TSDF / CHWIF site. In this way unit shall maintain zero liquid discharge.

15. Unit shall provide ETP with adequate capacity.

16. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB. - Not applicable

E **AIR**

E-1 Power (Electricity) requirement :500 KVA

E-2 **Flue gas emission details**

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)
6.	Boiler (1 TPH)	30	Indonesian Coal /Briquettes	2.49/ 3.43	PM, SO ₂ , NO _x	Multi cyclone separator followed by bag filter
7.	Thermic Fluid Heater (2,00,000)		Indonesian Coal /Briquettes	0.73/ 1	PM, SO ₂ , NO _x	Multi cyclone separator

	Kcal)					followed by bag filter
8.	D.G. set (1*200 kVA)	12	Diesel	48 lit/hr	PM, SO2	--
-						
E-3	Process gas					
-						
Sr No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)		
1	Reactors Vessel of Lansoprazole, Bendamustine, Valsartan, 2-Chloromethyl-3,4-dimethoxy pyridine Hydrochloride	HCl, VOCs	12	Dual stage condenser system followed by the Dual stage Scrubber (water + Alkaline media) followed by common activated carbon column		
2	Reactor Vessel of Pregabalin, Etoricoxib, 2-Chloromethyl-3,4-dimethoxy pyridine Hydrochloride	NH3, VOCs	12	Dual stage condenser system followed by the Dual stage Scrubber (water + Acidic media) followed by common activated carbon column		
3	Reactor vessel of Topiramate, 2-(Diethylamino)ethyl Chloride Hydrochloride	SO2, VOCs	12	Dual stage condenser system followed by the Dual stage Scrubber (water + Alkaline media) followed by common activated carbon column		
4	Reactor vessel of Albendazole and chlorine handling area	Cl2, VOCs	12	Dual stage condenser system followed by the Dual stage Scrubber (water + Alkaline media) followed by activated carbon column		
5	Dryer (2 Nos.)	VOCs	12	Activated carbon column		
6	Dryer (3 Nos.)	VOCs	12	Activated carbon column		
7	RCVD (2 Nos.)	VOCs	12	Activated carbon column		
8	FBD (2 Nos.)	VOCs	12	Activated carbon column		
9	ANFD	VOCs	12	Activated carbon column		
-						
E-4	Fugitive emission details with its mitigation measures.					
<p>➤ Fugitive emissions due to raw material handling and transportation of finished goods & VOC emission generated due to the handling and storage of the solvents & other raw materials.</p> <p>Mitigation measures :</p> <ul style="list-style-type: none"> All the raw materials will be stored in isolated storage area and containers will be kept tightly closed. So it will reduce the chances of fugitive emissions as well as VOCs Emissions. 						

- Entire 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.
 - All the motors of pumps for the handling of hazardous chemicals will be flame proof and provided with suitable mechanical seal with stand-by arrangement.
 - The 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.
 - The spillages / leakages of specific chemical will be collected and it will be drained to effluent treatment plant.
 - Precautionary measures will be taken while handling various hazardous chemicals.
 - Adequate ventilation system in process plant and hazardous chemical storage area should be provided.
 - A regular preventive maintenance will be planned to replace or rectify all gaskets, joints etc.
 - Transporters will be instructed to cover the trucks by tarpaulin sheets.
 - TREM card will be provided to the driver during the transportation of Hazardous raw materials/products.
 - Sufficient information and training regarding characteristics and immediate actions in case of any spillage or accident during transportation of hazardous chemical will be provided to the driver
 - The unit will also develop green belt area within the factory premises to control the fugitive emissions from spreading into surrounding environment.
- To control the odour (if any) generated during the process, unit will install turbo jet ventilators on the roof top of the industrial shed area

Comments for E2, E3 & E4:

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

F Solvent management, VOC emissions etc.

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

Solvent Recovery Table

Solvent Name	Consumption	Generation	Recovery %	Loss %
	MT/Month	MT/Month		
Acetic anhydride	19.5	13.05	66.9	33.1
Acetone	2279.63	1568.2	68.8	31.2
Acetonitrile	452.6	438.53	96.9	3.1
Benzene	7.05	6.3	89.4	10.6
Chloroform	802.804	787.3	98.1	1.9
Cyclohexane	86	83.33	96.9	3.1
Diisopropyl ether	20	19	95	5
DMF	103.39	98.26	95	5
EDC	64.82	61.68	95.2	4.8

Ethanol	53.53	49.42	92.3	7.7
Ethyl acetate	374.868	357.04	95.2	4.8
Ethylene di amine	21.6	20.8	96.3	3.7
Hexane	111.68	104.92	93.9	6.1
Isopropyl Alcohol	602.45	559.79	92.9	7.1
Iso propyl ether	19.2	17.6	91.7	8.3
MDC	835.15	744.98	89.2	10.8
Methanol	1665.73	1584.41	95.1	4.9
Methyl Isobutyl Keotne	55	52.25	95	5
MIBK	19.5	18.6	95.4	4.6
MMA	46.67	43.33	92.8	7.2
N-hexane	26.3	25.08	95.4	4.6
N-propanol	57.14	56.57	99	1
Pyridine	14.4	13.21	91.7	8.3
THF	121.6	113.6	93.4	6.6
Toluene	1332.2	1241.48	93.2	6.8
Tributyl Amine	9.82906	9.40171	95.7	4.3
Xylene	19.2	18.24	95	5

F-2 VOC emission sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- The entire manufacturing activities & distillation process will be carried out in a totally closed system.
- Maintenance of the pipeline and valves & fittings will be carried out regularly to avoid any leakages.
- All the Flange joints of the pipe lines which carry solvents will be covered with flange guards.
- VOC detectors will be installed at various places to identify any fugitive emissions.
- Minimum number of flanges, joints and valves in pipelines shall be provided.

Components	Average quantity	Average Uncontrolled VOC Emissions (ton/year)	Percent age of total emission	Preventive Measures
Pumps	14	2.66	22.07	<ul style="list-style-type: none"> ➤ Use Sealless design ➤ Use Dual mechanical seal with barrier fluid maintained at a higher pressure than the pumped fluid ➤ Provide Closed-vent system ➤ Use Spare pumps at the time of repair. ➤ Tightening the packing glands ➤ The pump will be flushed of VOC as much as possible before opening for seal replacement.

Valves	60	3.31	27.44	<ul style="list-style-type: none"> ➤ Use Sealless design. ➤ Plug type valves can be lubricated with grease to reduce emissions. ➤ Many valves have no means of in-service repair and must be isolated from the process.
Connectors	60	1.01	8.34	<ul style="list-style-type: none"> ➤ Weld together ➤ In some cases, leaks from flanges can be reduced by replacing the flange gaskets.
Open ended lines	15	0.24	2.00	<ul style="list-style-type: none"> ➤ Use of Blind, cap, plug, or second valve will make 100% Control Over Leakage
Sampling Connections	15	2.06	17.11	<ul style="list-style-type: none"> ➤ Provide Closed-loop sampling
Pressure relief valves	50	2.78	23.04	<ul style="list-style-type: none"> ➤ Use of Rupture disk assembly will make 100% Control Over Leakage

F-3 | LDAR proposed:

- LDAR programme would be applicable to components for following products/compounds: (i) Hydrocarbon gases; (ii) Light liquid with vapor pressure @ 20°C > 1.0 kPa; and (iii) Heavy liquid with vapor pressure @ 20°C between 0.3 to 1.0 kPa
- Actually all solvents used for the proposed project of M/s AARNEA BIODOME PRIVATE LIMITED will be used only for adjustment of viscosity. So no solvent will be generated and recovered. So no loss of solvents at any stage of project.
- LDAR programmer would not be applicable for:
 - heavy liquids with vapor pressure > 0.3 kPa, it will be desirable to check for liquid dripping as indication of leak
 - Equipment and line sizes less than 2.54 cm, less than 300 hr service and in vacuum service.
 - Equipment and piping during start up and shut down.
 - Pumps (canned, diaphragm, magnetic), Valves (Diaphragm, bellow) and close loop Sampling points; and
 - Non accessible points to the extent of 5% of total plant.
 - Leak detection and repair methods can be applied in order to reduce fugitive emissions from process unit sources. Leak detection methods are used to identify equipment components that are emitting significant amounts of VOC. Emissions from leaking sources may be reduced by three general methods-

Comments:

- Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

G		Hazardous waste			
G-1		Hazardous waste management matrix			
Sr . no.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules	Quantity (MT/Annum)	Management of HW
5.	ETP Sludge	ETP	35.3	369.03	Collection, Storage, transportation and send to TSDF for safe disposal.
6.	MEE Residue	MEE	35.3	380.88	Collection, Storage, transportation and send to TSDF for safe disposal.
7.	Spent Hyflo	Manufacturing Process	-	267.36	Collection, Storage, transportation and send to TSDF for safe disposal.
8.	Spent Carbon	Manufacturing Process	28.3	134.28	Collection, Storage, Transportation and Incinerated at CHWIF.
9.	Spent Solvent	Manufacturing Process	28.6	13.2	Collection, Storage, Transportation and Incinerated at CHWIF
10.	Process residue	Manufacturing Process	28.1	317.16	Collection, Storage, Transportation, disposal at CHWIF site
11.	Distillation Residue	Solvent recovery	20.3	408.96	Collection, Storage, Transportation and Incinerated at CHWIF.
12.	Off Specification Drugs	Manufacturing Process	28.4	1	Collection, Storage, Transportation and Incinerated at CHWIF.
13.	Date Expired Product	Manufacturing Process	28.5	1	Collection, Storage, Transportation and Incinerated at CHWIF.
14.	Spent carbon-APCM	APCM	35.1	858.47	Collection, Storage, Transportation, disposal at CHWIF site
15.	Spent Catalyst	Manufacturing Process	28.3	2.04	Collection, Storage, Transportation and Incinerated at CHWIF or send for regeneration to the authorized recycler
16.	Used Oil	Machineries	5.1	0.5	Collection, storage and used within premises as a lubricant / sold to

					registered recycler.
17.	Discarded Plastic Bags / Barrels / Liners	Raw material storage	33.1	205	Collection, storage & sold to authorized recycler.
18.	Bleed liquor (NH3)	Scrubber	35.1	37.8	Sell under Rule 9
19.	Bleed liquor (20 % HCl)	Scrubber	35.1	520.2	Sell under Rule 9
20.	Spent solvent	Manufacturing Process	28.6	97276.4 4	Collected, Treated and Recover & Reuse in process.
<p>Comments:</p> <ul style="list-style-type: none"> ➤ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement. ➤ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB. 					
G-2	Non- Hazardous waste management matrix				
✓ Fly Ash generation will be 125.25 MTPA.					
<p>Comments:</p> <ul style="list-style-type: none"> ➤ Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit. 					
H	SAFETY details				
H-1	Details regarding storage of Hazardous chemicals				
<p>-</p> <p>-</p> <p>Safety details....</p> <ul style="list-style-type: none"> ➤ Applicability of PESO: Yes. Unit will obtain PESO License for storage of chemicals. <p>Comments:</p> <ul style="list-style-type: none"> ➤ 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:
<p>Hydrogenation: Hydrogenation process will be carried out in the separate dedicated process plant as mention in the plant layout.</p> <ul style="list-style-type: none"> ➤ Building design has been carried out as per high pressure process vessel installation (As per Safety rule 1948). <p>SOP for Hydrogenation :</p> <ul style="list-style-type: none"> ➤ First of all clean the reactor which is going to use for hydrogenation. ➤ Before reaction start first check for earthing of reactor. (light methods) ➤ After that purge nitrogen gas in the reactor at pressure of 2 kg/cm² for 15 min. Repeat this purging twice. At that time also check for pressure in the reactor with the help of pressure gauge. So we can insure that there is no leakage in the reactor. ➤ After that also check for oxygen level in the reactor with the help of oxygen analyser. Oxygen level will be maintained less than 2 % for safety aspect. ➤ We will use automatic gas regulator for controlled hydrogen purging. ➤ PLC base process controls and operation of plant will be installed. ➤ Area will be designed Flame proof type. Total enclosed process system. Instrument & Plant Air System. Nitrogen blanketing in Hydrogenation reactor. ➤ Safety valve and Rupture disc provided on reactor. ➤ Cooling Chilling and power alternative arrangement have been made on reactor. ➤ Trained skilled labour only allowed in the process area. ➤ Static earthing and electric earthing (Double) will be provided for reactor and for hydrogen cylinder caring truck for static charges. ➤ Jumpers for static earthing on pipeline flanges of flammable chemical will be provided. ➤ PRV station with shut off valve, safety valve provision will be made for hydrogenation reaction safety. (two PRV with different pressure will be provided) ➤ Standard Operating procedure shall be made for Before Hydrogen Gas charging in to reactor and after completion of reaction Nitrogen flushing will be done. ➤ Flame arrestor will be provided on vent line of reactor and it will be extended above the roof level. ➤ Safe Catalyst charging method will be adopted. SOP will be prepared and operators will be trained for the same. ➤ Hydrogen gas detector will be installed for early detection of gas and it will be connected to SCADA/PLC system. PPE will be provided to operators. <p>Nitration:</p> <ul style="list-style-type: none"> ➤ Nitration is exothermic reaction leads to runaway reaction. So, entire process of nitration is to be followed as per standard operating procedure established by industry. ➤ All engineering controls w.r.t nitration process i.e. temperature and pressure controller, jacket surrounding to reactor etc. will be provided. ➤ Chilled water to control exothermic reaction during nitration. ➤ NOx fumes will be scrubbed in ventury Scrubber from the Nitration reactor. ➤ Only trained person will be allocated for handling nitration process. ➤ Programmable Logic Controller (PLC) based control plan will be provided for Nitration. ➤ Direct Contact with skin and eyes will be avoided. ➤ Appropriate personal protective equipment's like Safety Gloves, Goggles, shoes etc., will be provided to workers <p>Bromination</p>	

- Bromination is exothermic reaction leads to runaway reaction. So, entire process of bromination is to be followed as per standard operating procedure established by industry.
- All engineering controls w.r.t bromination process i.e. temperature and pressure controller, jacket surrounding to reactor etc. will be provided.
- Chilled water to control exothermic reaction during bromination.
- Only trained person will be allocated for handling bromination process.
- Programmable Logic Controller (PLC) based control plan will be provided for Bromination.
- Direct Contact with skin and eyes will be avoided.
- Appropriate personal protective equipment's like Safety Gloves, Goggles, shoes etc., will be provided to workers.

Periodically inspection of scrubber system will be carried out.

Accidental release measures:

- Absorb with an inert material and put the spilled material in an appropriate waste disposal.
- Clean up spills immediately, observing precautions in the Protective Equipment section. (i.e. Self contain breathing apparatus, rubber coated shoes, acid proof gloves etc.). Remove all sources of ignition. Absorb spill with an alkaline material such as sodium thio-sulfate or lime. Carefully scoop up and place into appropriate disposal container. Provide ventilation. Do not get water inside containers.
- At workplace; higher concentration of Bromine vapours will be absorb using sodium carbonate / sodium thiosulphate scrubber

Sulfonation:

- Sulfonation is exothermic reaction leads to runaway reaction. So, entire process of Sulfonation is to be followed as per standard operating procedure established by industry.
- All engineering controls w.r.t Sulfonation process i.e. temperature and pressure controller, jacket surrounding to reactor etc. will be provided.
- Chilled water to control exothermic reaction during nitration.
- SO_x fumes will be scrubbed in ventury Scrubber from the Sulfonation reactor.
- Only trained person will be allocated for handling Sulfonation process.
- Programmable Logic Controller (PLC) based control plan will be provided for Sulfonation.
- Direct Contact with skin and eyes will be avoided.
- Appropriate personal protective equipment's like Safety Gloves, Goggles, shoes etc., will be provided to workers.
- Periodically inspection of scrubber system will be carried out.

Chlorination:

- Chlorine will be transfer from tonner to reactor through closed transfer system for manufacturing of products.
- All adequate engineering controls i.e. temperature and pressure controller, jacket surrounding to reactor etc. will be provided for reactor containing chlorine.
- Traces of un-reacted chlorine will be scrubbed in alkali scrubber followed by

water scrubber system.

- SCBA will be made readily available to handle leak of chlorine gas.
- Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing.
- Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools.

Accidental release measures:

- Chlorine gas is denser than air, thus it will tend to remain at ground level rather than dispersing. So, at the time of chlorine leakage, evacuate persons at assembly point (above ground level)
- Leaked Chlorine will be absorbed in **Sodium hydroxide** through closed hood system.
- Chlorine leak will be handled by trained experienced person wearing SCBA.
- **Ammonia Torch** will be provided for detection of Chlorine leak.

H-3 Details of Fire Load Calculation

Total Plot Area:	7310.13 m ²
Area utilized for plant activity:	6856.63 m ²
Area utilized for Hazardous Chemicals Storage:	1495 m ²
Number of Floors:	G+2 Floors in production Building
Water requirement for firefighting in KLD:	20939.08 L
Water storage tank provided for firefighting in KLD:	300 KL
Details of Hydrant Pumps:	Jockey Pump 1 Nos. and Electrical and diesel pump 3 Nos.
Nearest Fire Station :	Bedipara Fire Station –30.9 km in WSW direction
Applicability of Off Site Emergency Plan:	Applicable

Comments:

- The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 300 KL. SEAC found it as per the requirement.

H-4 Details of Fire NOC/Certificate:

Shall be obtained after receipt of EC.

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

-	
Number of permanent Employee:	18
Number of Contractual person/Labour:	No any
Area provided for OHC:	15 m ²
Number of First Aid Boxes:	18 nos
Nearest General Hospital:	Mesariya Primary Health Center – 4.34 km in E direction
Name of Antidotes to be store in plant:	Adequate antidotes will be stored within premises

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.

Details of Environmental Management Plan (EMP)

As below:

Sr. No	Unit	Details	Capital Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)
1	Waste Water	Cost of ETP and MEE	0.815	1.91
2	Air	APCM	0.23	0.0182
3	Hazardous Management	Cost of designated storage area, storage, handling and disposal cost	0.0084	3.15
4	Fire & Safety	SCADA PLC, Fire hydrant system, Safety systems etc.	0.462	0.0035
6	Green Belt Development	Greenbelt development	0.0217	0.005
7	Occupational Health	OHS center, PPEs etc.	0.0239	0.005
8	Noise Control	sound enclosures	0.0012	0.0028
9	CER Funds	RO facility and renewable energy facility	0.14	--
10	Miscellaneous	Miscellaneous	0.005	0.02
Total			1.70	5.12

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.

12) DELIBERATION AND RECOMMENDATION:

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

proponent, SEAC finds the project as per the requirement and **unanimously** recommends the same to SEIAA for environmental clearance."

Conditions with which Environment Clearance is recommended:

Construction Phase

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

SPECIFIC CONDITIONS:

1. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after the 31st December 2021, considered as per the provisions in force at that time as mentioned in the Notification vide S.O. 1223 (E) dated 27/03/2020.
2. 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 subsequent amendments.
3. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
4. (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.
5. 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].**

6. 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.
7. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained
8. **Safety & Health:**
 - a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals
 - b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
 - c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
 - d) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
 - e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
 - f) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
 - g) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
 - h) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
 - i) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
 - j) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
 - k) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
 - l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

- m) Unit shall provide chlorine leakage control emergency kit and FRP hood with scrubber system for chlorine safety
- n) Unit shall provide safety valve and rupture disc, as well as auto dump or auto quench/, suppress system for nitration vessel safety
- o) Unit shall provide safety valve and rupture disc, as well as auto dump or auto quench/, suppress system for exothermic reaction vessel safety.

WATER

9. Total water requirement for the project shall not exceed 124.19 KLD. Unit shall reuse 83.01 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 41.18 KLD and it shall be met through Borewell only. Prior permission from concerned authority for withdrawal of water shall be obtained.
10. The industrial effluent generation from the project shall not exceed 111.8 KLD.
11. Management of Industrial effluent shall be as under:
- ✓ Concentrated stream i.e. from Process (82.7 KLD (52.38 KLD Ammonical wastewater and 30.32 KLD Non Ammonical Wastewater)), washing 2 KLD and 6.96 KLD from Scrubber shall be generated. Out of which 52.38 KLD Ammonical wastewater shall be passed through Ammonia stripper (Output 50 KLD from Ammonia stripper). 30.32 KLD non Ammonical wastewater from process, 50 KLD effluent from Ammonia stripper and 2 KLD washing wastewater shall be treated in VOC stripper. 80 KLD Effluent from VOC stripper and 6.96 KLD From scrubber and 40 KLD RO-2 reject shall be treated in MEE followed by ATFD.
 - ✓ MEE and ATFD condensate 101.56 KLD, 0.4 KLD boiler blow down, 17.71 KLD RO-1 Reject, 2.03 KLD cooling tower blow down and 1.31 KLD domestic wastewater shall be treated in ETP.
 - ✓ ETP sludge shall be disposed off to TSDF / CHWIF site. In this way unit shall maintain zero liquid discharge.
 - ✓ Unit shall send waste water to in-house MEE for evaporation only after achieving inlet norms prescribed by GPCB ensuring content of effluent for COD so as not to get air borne during evaporation after APCM in order to achieve no adverse impacts on Environment and Human Health.
 - ✓ Complete Zero Liquid Discharge [ZLD] status shall be maintained all the time and there shall be no drainage connection from the premises
12. Domestic wastewater generation shall not exceed 1.31 KL/Day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
13. Unit shall provide ETP with adequate capacity.
14. The unit shall provide metering facility at the inlet and outlet of ETP, Stripper, MEE & RO and maintain records for the same.

15. Proper logbooks of ETP, Stripper, MEE & RO; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

16. Unit shall not exceed fuel consumption for Steam Boiler, TFH and D G Setas per the point no. E-2 as mentioned above.

17. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.

18. Unit shall provide adequate APCM with process gas generation sources as the point no. **E-3** as mentioned above.

19. The fugitive emission in the workzoneenvironment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.

- Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
- Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
- A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.

20. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.

21. For control of fugitive emission, VOCs, following steps shall be followed :

- ✓ Closed handling and charging system shall be provided for chemicals.
- ✓ Reflux condenser shall be provided over Reactors / Vessels.
- ✓ Pumps shall be provided with mechanical seals to prevent leakages.
- ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.

22. Solvent management shall be carried out as follows:

- ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
- ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
- ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
- ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.

- ✓ Solvents shall be stored in a separate space specified with all safety measures.
- ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
- ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.

23. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, Cl₂, HCl, NH₃, and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

24. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
25. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
26. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
27. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
28. 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.
29. 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

30. The PP shall develop green belt (2425.67 Sq. m i.e. 33.18 % of the total plot area) as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

31. The project proponent shall carry out the entire activities [Funds towards Renewable energy (Solar panels installation at school) & Safe Drinking water facility (RO installation at school)] proposed under CER shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.

32. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

33. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.

34. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.

35. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.

36. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.

37. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.

38. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.

39. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com& (b) seacgujarat@gmail.com

05	SIA/GJ/IND2/244623/2021	M/s. CHON CHEM INDUSTRIES Plot No. DP/51/11, GIDC Saykha Industrial Estate, Tal:- Vagra, Dist.: Bharuch Gujarat - 392140.	EC
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Category of the unit: **5 (f)**

Project status: **New**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	SIA/GJ/IND2/244623/2021

1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	13.12.2021
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. &Date :	Not applicable as project is categorized as B2
1.7. Technical expert / Environmental Consultant :	M/s. Jyoti om Chemical Research Centre Pvt. Ltd.
1.8. SEAC Meeting No. and Date:	381 st meeting dated 15.03.2022
1.9. Compliance of Existing EC & CCA	Not Applicable (if New)

2) This is a new project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

Product Table

Sr. No	Name of Products	Cas No.	Type / Category	Intermediate Stage for API	Total MT/ Month	End use
1	Brexpiprazole	913611-97-9	API	N	70	Antipsychotic
	7-[4-(piperazin-1-yl)butoxy]quinolin-2(1H)-one dihydrochloride	1849603-59-3	Intermediate	N-1		Intermediate of Brexpiprazole
	7-[4-(tert-butyl carboxylate piperazine-1-yl)butoxy]quinolin-2(1H)-one	2081876-02-8	Intermediate	N-2		
	7-(4-chlorobutoxy)quinolin-2(1H)-one	913613-82-8	Intermediate	N-3		
2	Lurasidone Hydrochloride	367514-88-3	API	N		Antipsychotic
	(3aR,7aR)-4'-(1,2-Benzisothiazol-3-yl)octahydrospiro[2H-isoindole-2,1'-piperazinium]methanesulfonate	186204-37-5	Intermediate	N-1		Intermediate of Lurasidone Hydrochloride
	(R,R)-1,2-Bis(methanesulfonyloxymethyl)cyclohexane	186204-35-3	Intermediate	N-2		
3	Olanzapine	132539-06-1	API	N		Antipsychotic
	4-Amino-2-methyl-10H-thiophene[2,3-b][1,5]benzodiazepine hydrochloride	138564-60-0	Intermediate	N-1		Intermediate of Olanzapine
	5-Methyl-2-[(2-nitrophenyl)amino] thiophene-3-	138564-59-7	Intermediate	N-2		

	carbonitrile					
	2-Amino-5-methylthiopene-3-carbonitrile	138564-58-6	Intermediate	N-3		
4	Paliperidone	144598-75-4	API	N	Antipsychotic	
	3-(2-Chloroethyl)-6,7,8,9-tetrahydro-9-hydroxy-2-methyl-4H-pyrido[1,2-a]pyrimidin-4-one	130049-82-0	Intermediate	N-1		
	9-Benxyloxy-3-(2-Chloroethyl)-2-methyl pyrido[1,2-a]pyrimidine-4-one	147687-17-0	Intermediate	N-2	Intermediate of Paliperidone	
	6-Fluoro-3-(4-piperidiny)-1,2-benzisoxazole hydrochloride	84163-13-3	Intermediate	N-3		
5	Quetiapine Fumarate	111974-72-2	API	N	Antipsychotic	
	1-[2-(2-Hydroxyethoxy)ethyl]piperazine	13349-82-1	Intermediate	N-1	Intermediate of Quetiapine Fumarate	
	Dibenzo[b,f][1,4]thiazepine-11-[10h]one	3159-07-7	Intermediate	N-2		
6	lloperidone	133454-47-4	API	N	Antipsychotic	
	4-(3-chloropropoxy)-3-methoxyacetophenone	58113-30-7	Intermediate	N-1	Intermediate of lloperidone	
	6-Fluoro-3-(4-piperidiny)-1,2-benzisoxazole hydrochloride	84163-13-3	Intermediate	N-2		
7	Duloxetine Hydrochloride	136434-34-9	API	N	Antidepressant	
	S-(+)-N,N-Dimethyl-3-(1-Naphthlenyloxy)-3-(2-Thienyl)-Propanamine	116817-12-0	Intermediate	N-1	Intermediate of Duloxetine Hydrochloride	
	(S)-(-)-N,N-Dimethyl-3-hydroxy-3-(2-thienyl)propanamine	132335-44-5	Intermediate	N-2		
8	Fluoxetine	54910-89-3	API	N	Antidepressant	
	3-(methylamino)-1-phenylpropan-1-ol	42142-52-9	Intermediate	N-1	Intermediate of Fluoxetine	
	3-chloro-1-phenylpropan-1-one	936-59-4	Intermediate	N-2		
	Antihypertensive					
9	Guanfacine Hydrochloride	29110-48-3	API	N	Antihypertensive	
	Guanfacine Base	29110-47-2	Intermediate	N-1	Intermediate of Guanfacine	

						Hydrochl oride	
10	Labetalol HCl	32780-64-6	API	N		Antihype rtensive	
	2-hydroxy-5-[[4-phenylbutan-2-yl)amino]acetyl]benzamide	85665-85-6	Intermediate	N-1		Interme diate of Labetalol HCl	
	2-Amino-4-phenylbutane	22374-89-6	Intermediate	N-2			
	5-(bromoacetyl)-2-hydroxybenzamide	73866-23-6	Intermediate	N-3			
	5-Acetylsalicylamide	40187-51-7	Intermediate	N-4			
11	Lercanidipine HCl	132866-11-6	API	N		Antihype rtensive	
	5-methoxycarbonyl-2,6-dimethyl-4-(3-nitrophenyl)-1,4-dihydropyridine-3-carboxylic acid	74936-72-4	Intermediate	N-1		Interme diate of Lercanidi pine HCl	
	Dimethyl 2,6-Dimethyl-4-(3-nitrophenyl)-1,4-dihydropyridine-3,5-dicarboxylate	21881-77-6	Intermediate	N-2			
	2,N-Dimethyl-N-(3,3-diphenylpropyl)-1-amino-2-propanol	100442-33-9	Intermediate	N-3			
12	Nebivolol Hydrochloride	152520-56-4	API	N		Antihype rtensive	
	2-[benzyl-[2-(6-fluoro-3,4-dihydro-2H-chromen-2-yl)-2-hydroxyethyl]amino]-1-(6-fluoro-3,4-dihydro-2H-chromen-2-yl)ethanol	929706-85-4	Intermediate	N-1		Intermed iate of Nebivolo l Hydrochl oride	
	(1R)-2-(benzylamino)-1-[(2S)-6-fluoro-3,4-dihydro-2H-1-benzopyran-2-yl]ethan-1-ol	1030385-16-0	Intermediate	N-2			
	(2R)-rel-6-Fluoro-3,4-dihydro-2-[(2S)-2-oxiranyl]-2H-1-benzopyran & (2R)-rel-6-Fluoro-3,4-dihydro-2-(2R)-2-oxiranyl-2H-1-benzopyran	793669-26-8 & 876514-31-7	Intermediate	N-3			
	6-Fluoro-3,4-Dihydro-2H-1-Benzopyran-2-Carboxylic acid	99199-60-7 / 129050-20-0	Intermediate	N-4			
13	Olmesartan medoxomil	144689-63-4	API	N		Antihype rtensive	
	4-(1-Hydroxy-1-methylethyl)-2-propyl-1-[[2'-[2-(triphenylmethyl)-2H-tetrazol-5-yl][1,1'-biphenyl]-4-yl]methyl]-1H-imidazole-5-carboxylic Acid (5-Methyl-2-oxo-1,3-dioxol-4-yl)methyl Ester	1020157-01-0	Intermediate	N-1		Intermed iate of Olmesart an medoxo mil	

	4-(1-Hydroxy-1-methylethyl)-2-propyl-1-[[2'-[(triphenylmethyl)-1H-tetrazol-5-yl][1,1'-biphenyl]-4-yl]methyl]-1H-imidazole-5-carboxylic acid ethyl ester	189400-21-3	Intermediate	N-2		
	5-(4'-Bromomethyl-1,1'-biphenyl-2-yl)-1-triphenylmethyl-1H-tetrazole	124750-51-2	Intermediate	N-3		
	Ethyl 4-(2-hydroxypropan-2-yl)-2-propyl-1H-imidazole-5-carboxylate	144689-93-0	Intermediate	N-4		
14	Telmisartan	144701-48-4	API	N		Antihypertensive
	Methyl 4'-[[2-n-Propyl-4-methyl-6-(1-methylbenzimidazol-2-yl)-benzimidazol-1-yl]methyl]biphenyl-2-carboxylate	528560-93-2	Intermediate	N-1		Intermediate of Telmisartan
	Methyl 4'-bromomethylbiphenyl-2-carboxylate	133240-26-3	Intermediate	N-2		
	2-n-Propyl-4-methyl-6-(1-methylbenzimidazole-2-yl)benzimidazole	152628-02-9	Intermediate	N-3		
	4-Methyl-2-n-propyl-1H-benzimidazole-6-carboxylic acid	152628-03-0	Intermediate	N-4		
15	Bosentan monohydrate	157212-55-0	API	N		Antihypertensive
	4-tert-Butyl-N-(6-chloro-5-(2-methoxyphenoxy)-2,2'-bipyrimidin-4-yl)benzenesulfonamide	150727-06-3	Intermediate	N-1		Intermediate of Bosentan monohydrate
	4,6-dichloro-5-(2-methoxyphenoxy)-2,2'-bipyrimidine	150728-13-5	Intermediate	N-2		
	5-(2-methoxyphenoxy)[2,2'-bipyrimidine]-4,6(1H,5H)-dione	150728-12-4	Intermediate	N-3		
	Anticonvulsant					
16	Brivaracetam	357336-20-0	API	N		Anticonvulsant
	(3R)-3-(chloromethyl)hexanoyl chloride	2052297-75-1	Intermediate	N-1		Intermediate of Brivaracetam
	(R)-4-propyldihydrofuran-2(3H)-one	63095-51-2	Intermediate	N-2		
	5-Hydroxy-4-propylfuran-2(5H)-one	78920-10-2	Intermediate	N-3		
17	Lamotrigine	84057-84-1	API	N		Anticonvulsant

	N'-Carbamimidoyl-2,3-dichlorobenzohydrazonoyl cyanide	94213-23-7	Intermediate	N-1	Intermediate of Lamotrigine Anticonvulsant Intermediate of Oxcarbazepine Anticonvulsant Intermediate of Topiramate Anticonvulsant Intermediate of Zonisamide Antilucer Intermediate of Apremilast Antilucer Intermediate of Dexlansoprazole Antilucer Intermediate of Esomeprazole Magnesium trihydrate Antilucer
	2,3-Dichlorobenzoyl Nitrile	77668-42-9	Intermediate	N-2	
18	Oxcarbazepine	28721-07-5	API	N	
	10-Methoxy Iminostilbene	4698-11-7	Intermediate	N-1	
19	Topiramate	97240-79-4	API	N	
	2,3:4,5-Bis-O-(1-methylethylidene)-b-D-fructopyranose	20880-92-6	Intermediate	N-1	
20	Zonisamide	68291-97-4	API	N	
	4-Hydroxycoumarin	1076-38-6	Intermediate	N-1	
	Antiulcer				
21	Apremilast	608141-41-9	API	N	
	(S)-1-(3-Ethoxy-4-methoxyphenyl)-2-(methylsulfonyl)ethylamine N-acetyl-L-leucine salt	608141-43-1	Intermediate	N-1	
22	Dexlansoprazole	138530-94-6	API	N	
	2-[3-Methyl-4-(2,2,2-trifluoroethoxy)-2-pyridinyl]methylthio-1H-benzimidazole	103577-40-8	Intermediate	N-1	
	2-Chloromethyl-3-methyl-4-(2,2,2-trifluoroethoxy)pyridine hydrochloride	127337-60-4	Intermediate	N-2	
	2-Mercaptobenzimidazole	583-39-1	Intermediate	N-3	
23	Esomeprazole Magnesium trihydrate	217087-09-7	API	N	
	5-Methoxy-2-mercaptobenzimidazole	37052-78-1	Intermediate	N-1	
	2-Chloromethyl-4-methoxy-3,5-dimethylpyridine hydrochloride	86604-75-3	Intermediate	N-2	
	(4-methoxy-3,5-dimethylpyridin-2-yl)methanol	86604-78-6	Intermediate	N-3	
	3,5-Dimethyl-4-nitropyridine 1-oxide	14248-66-9	Intermediate	N-4	
24	Omeprazole	73590-58-6	API	N	
25	Rabeprazole sodium	117976-90-6	API	N	

	2-[[4-(3-Methoxypropoxy)-3-methylpyridine-2-yl]methylthio]-1H-benzimidazole	117977-21-6	Intermediate	N-1	Intermediate of Rabeprazole sodium
	2-Mercaptobenzimidazole	583-39-1	Intermediate	N-2	
	2-Chloromethyl-3-methyl-4-(3-methoxypropoxy)pyridine hydrochloride	153259-31-5	Intermediate	N-3	
	4-Nitro-2,3-lutidine-N-oxide	37699-43-7	Intermediate	N-4	
	Antiinflammatory / Analgesic				
26	Milnacipran Hydrochloride	101152-94-7	API	N	Analgesic
	cis-2-[(1,3-Dihydro-1,3-dioxo-2H-isoindol-2-yl)methyl-N,N-diethyl-1-phenylcyclopropanecarboxamide	105310-75-6	Intermediate	N-1	Intermediate of Milnacipran Hydrochloride
	(1R,2S)-2-(chloromethyl)-N,N-diethyl-1-phenylcyclopropane-1-carboxamide	1237261-60-7	Intermediate	N-2	
	(1R,2S)-N,N-Diethyl-2-(hydroxymethyl)-1-phenylcyclopropane-1-carboxamide	172016-06-7	Intermediate	N-3	
27	Nicorandil	65141-46-0	API	N	Analgesic
	N-(2-hydroxyethyl)nicotinamide	6265-73-2	Intermediate	N-1	Intermediate of Nicorandil
28	Tramadol Hydrochloride	27203-92-5	API	N	Analgesic
	2-[(dimethylamino)methyl]cyclohexan-1-one	15409-60-6	Intermediate	N-1	Intermediate of Tramadol Hydrochloride
29	Zolmitriptan	139264-17-8	API	N	Analgesic
	4-(N,N'-Dimethylamino)-butanal diethyl acetal	139264-24-7	Intermediate	N-1	Intermediate of Zolmitriptan
	(S)-4-(4-Hydrazinobenzyl)-2-oxazolidinone	187975-62-8	Intermediate	N-2	
	Osteoporosis				
30	Zoledronic acid	118072-93-8	API	N	Osteoporosis
	Imidazole-1-yl-acetic acid	22884-10-2	Intermediate	N-1	Intermediate of Zoledron
	ethyl (1H-imidazol-1-yl)acetate	17450-34-9	Intermediate	N-2	

						ic acid	
31	Ibandronate sodium monohydrate	138926-19-9	API	N		Osteoporosis	
	Ibandronic acid	114084-78-5	Intermediate	N-1		Intermediate of Ibandronate sodium monohydrate	
	3-(Methylpentylamino)propionic acid hydrochloride	625120-81-2	Intermediate	N-2			
	3-(Methylpentylamino)propionitrile	919491-64-8	Intermediate	N-3			
	3-Pentylaminopropionitrile	59676-91-4	Intermediate	N-4			
32	Alendronate sodium trihydrate	121268-17-5	API	N		Osteoporosis	
	(4-Amino-1-Hydroxybutylidene)biphosphonic acid	2809-21-4	Intermediate	N-1		Intermediate of Alendronate sodium trihydrate	
33	Risedronate sodium	329003-65-8	API	N		Osteoporosis	
	1-Hydroxy-2-(3-pyridinyl)ethane-1,1-diphosphonic acid	105462-23-5	Intermediate	N-1		Intermediate of Risedronate sodium	
34	Alogliptin benzoate	850649-61-5	API	N		Antidiabetic	
	2-((6-[(3R)-3-aminopiperidin-1-yl]-3-methyl-2,4-dioxo-3,4-dihydropyrimidin-1(2H)-yl)methyl)benzotrile Hydrochloride	1246610-75-2	Intermediate	N-1			
	2-[(6-Chloro-3,4-dihydro-3-methyl-2,4-dioxo-1(2H)-pyrimidinyl)methyl]benzotrile	865758-96-9	Intermediate	N-2		Intermediate of Alogliptin benzoate	
	2-((6-Chloro-2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)methyl)benzotrile	865758-95-8	Intermediate	N-3			
35	Glimepiride	93479-97-1	API	N		Antidiabetic	
	3-ethyl-4-methyl-2-oxo-N-[2-(4-sulfamoylphenyl)ethyl]-2,5-dihydro-1H-pyrrole-1-carboxamide	119018-29-0	Intermediate	N-1		Intermediate of Glimepiride	
	3-ethyl-4-methyl-2-oxo-N-(2-phenylethyl)-2,5-dihydro-1H-pyrrole-1-carboxamide	247098-18-6	Intermediate	N-2			

	3-ethyl-4-methyl-1,5-dihydro-2H-pyrrol-2-one	766-36-9	Intermediate	N-3		
	Anticoagulant					
36	Rivaroxaban	366789-02-8	API	N	Anticoagulant	
	(S)-4-(4-(5-(Aminomethyl)-2-oxooxazolidin-3-yl)phenyl)morpholin-3-one hydrochloride	898543-06-1	Intermediate	N-1	Intermediate of Rivaroxaban	
	5-Chlorothiophene-2-Carboxylic acid	24065-33-6	Intermediate	N-2		
	(S)-(+ Glycidyl Phthalimide	161596-47-0	Intermediate	N-3		
	4-(4-Aminophenyl)Morpholin-3-one	438056-69-0	Intermediate	N-4		
37	Dabigatran etexilate	211915-06-9	API	N	Anticoagulant	
	ethyl-3-(2-((4-amidinophenylamino)methyl)-1-methyl-N-(pyridin-2-yl)-1H-benzo[d]imidazole-5-carboxamido)propanoate hydrochloride	429658-95-7	Intermediate	N-1	Intermediate of Dabigatran etexilate	
	ethyl-3-(2-((4-cyanophenylamino)methyl)-1-methyl-N-(pyridin-2-yl)-1H-benzo[d]imidazole-5-carboxamido)propanoate	211916-39-1	Intermediate	N-2		
	ethyl 3-[[3-amino-4-(methylamino)benzoyl](pyridin-2-yl)amino]propanoate	212322-56-0	Intermediate	N-3		
38	Apixaban	503612-47-3	API	N	Anticoagulant	
	Ethyl 1-(4-methoxyphenyl)-7-oxo-6-(4-(2-oxopiperidin-1-yl)phenyl)-4,5,6,7-tetrahydro-1H-pyrazolo[3,4-c]pyridine-3-carboxylate	503614-91-3	Intermediate	N-1		
	Ethyl 6-(4-Aminophenyl)-1-(4-methoxyphenyl)-7-oxo-4,5,6,7-tetrahydro-1H-pyrazolo[3,4-c]pyridine-3-carboxylate	503615-07-4	Intermediate	N-2	Intermediate of Apixaban	
	ethyl (2E)-chloro[2-(4-methoxyphenyl)hydrazinylidene]acetate	27143-07-3	Intermediate	N-3		
	3-(morpholin-4-yl)-1-(4-nitrophenyl)-5,6-dihydropyridin-2(1H)-one	503615-03-0	Intermediate	N-4		
39	Alfuzosin HCl	81403-68-1	API	N	Prostatic	
	N-(3-aminopropyl)-6,7-dimethoxy-N-methylquinazoline-2,4-	81403-69-2	Intermediate	N-1	Intermediate of Alfuzosin	

	diamine -Dihydrate					HCl
	3-[(4-amino-6,7-dimethoxyquinazolin-2-yl)(methyl)amino]propanenitrile monohydrate	76362-28-2	Intermediate	N-2		
	2-Chloro-6,7-dimethoxy-4-quinazolinamine	23680-84-4	Intermediate	N-3		
40	Silodosin	160970-54-7	API	N		Prostatic
	1-(3-hydroxypropyl)-5-[(2R)-2-[2-[2-(2,2,2-trifluoroethoxy)phenoxy]ethyl amino]propyl]-2,3-dihydroindole-7-carbonitrile;hydrochloride	885340-13-6	Intermediate	N-1		
	1-[3-(Benzoyloxy)propyl]-2,3-dihydro-5-[(2R)-2-[[2-[2-(2,2,2-trifluoroethoxy)phenoxy]ethyl]amino]propyl]-1H-indole-7-carbonitrile	885340-11-4	Intermediate	N-2		
	2-[2-(2,2,2-Trifluoroethoxy)phenoxy]ethyl methanesulfonate	160969-03-9	Intermediate	N-3		
	5-[(2R)-2-Aminopropyl]-1-[3-(benzoyloxy)propyl]-2,3-dihydro-1H-indole-7-carbonitrile (2R,3R)-2,3-dihydroxybutanedioate	239463-85-5	Intermediate	N-4		Intermediate of Silodosin
41	Atorvastatin	134523-00-5	API	N		Cardiovascular
	tert-Butyl (4R,6R)-2-[[[6-(2,4-fluorophenyl)-5-isopropyl-3-phenyl-4-(phenylcarbonyl)pyrrol-1-yl]ethyl]-2,2-dimethyl-1,3-dioxan-4-yl]acetate	125971-95-1	Intermediate	N-1		
	4-Fluoro-alpha-(2-methyl-1-oxopropyl)-gamma-oxo-N,beta-diphenylbenzene butane amide	125971-96-2	Intermediate	N-2		Intermediate of Atorvastatin
	tert-butyl [(4R,6R)-6-(2-aminoethyl)-2,2-dimethyl-1,3-dioxan-4-yl]acetate	125995-13-3	Intermediate	N-3		
	tert-butyl-[(4R,6R)-6-(cyanomethyl)-2,2-dimethyl-1,3-dioxan-4-yl]acetate	125971-94-0	Intermediate	N-4		
42	Rosuvastatin calcium	147098-20-2	API	N		Cardiovascular
	tert-Butyl 6-[(1E)-2-[4-(4-fluorophenyl)-6-(1-methylethyl)-2-[methyl(methylsulfonyl)amino	289042-12-2	Intermediate	N-1		Intermediate of Rosuvastatin

]5-pyrimidinyl]ethenyl]-2,2-dimethyl-1,3-dioxane-4-acetate					calcium
	N-[5-(bromomethyl)-4-(4-fluorophenyl)-6-(propan-2-yl)pyrimidin-2-yl]-N-methylmethanesulfonamide	799842-07-2	Intermediate	N-2		
	tert-butyl [(4R,6S)-6-formyl-2,2-dimethyl-1,3-dioxan-4-yl]acetate	124752-23-4	Intermediate	N-3		
	tert-butyl 4R,6S)-6-(chloromethyl)-2,2-dimethyl-1,3-dioxan-4-yl]acetate	124665-09-0	Intermediate	N-4		
43	Ranolazine	95635-56-6 / 142387-99-3	API	N		Analgesic
	Guaiacol glycidyl ether	2210-74-4	Intermediate	N-1		Intermediate of Ranolazine
	N-(2,6-Diphenylmethyl)-1-piperazine acetyl amine	5294-61-1	Intermediate	N-2		Erectile dysfunction
44	Sildenafil citrate	171599-83-0	API	N		
	5-[2-ethoxy-5-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-1,6-dihydro-1-methyl-3-propyl-7H-pyrazolo[4,3-d]pyrimidin-7-one	139755-83-2	Intermediate	N-1		
	4-ethoxy-3-(1-methyl-7-oxo-3-propyl-6,7-dihydro-1H-pyrazolo[4,3-d]pyrimidin-5-yl)benzene-1-sulfonyl chloride	139756-22-2	Intermediate	N-2		Intermediate of Sildenafil citrate
	5-(2-ethoxyphenyl)-1-methyl-3-propyl-1,6-dihydro-7H-pyrazolo[4,3-d]pyrimidin-7-one	139756-21-1	Intermediate	N-3		
45	Vardenafil hydrochloride	330808-88-3	API	N		Erectile dysfunction
	4-Ethoxy-3-(5-methyl-4-oxo-7-propyl-3,4-dihydroimidazo[5,1-f][1,2,4]-triazin-2-yl)benzene-sulfonyl Chloride	224789-26-8	Intermediate	N-1		
	2-(2-ethoxyphenyl)-5-methyl-7-propylimidazo[5,1-f][1,2,4]triazin-4(3H)-one	224789-21-3	Intermediate	N-2		Intermediate of Vardenafil hydrochloride
	N-{1-[3-(2-ethoxyphenyl)-5-oxo-2,5-dihydro-1,2,4-triazin-6]ethyl} butanamide	927690-90-2	Intermediate	N-3		
46	Solifenacin Succinate	242478-38-2	API	N		Urinary dysfunction
	Solifenacin Base	242478-37-1	Intermediate	N-1		Interme

	(1S)-1-phenyl-1,2,3,4-tetrahydroisoquinoline	118864-75-8	Intermediate	N-2	diate of Solifenacin Succinate	
	1-phenyl-1,2,3,4-tetrahydroisoquinoline	52250-50-7	Intermediate	N-3		
	N-phenethylbenzamide	3278-14-6	Intermediate	N-4		
47	Darifenacin Hydrobromide	133099-07-7	API	N		Urinary
	2-(3-Hydroxy-2,3-dihydro-1-benzofuran-5-yl)ethyl methanesulfonate	1346603-15-3	Intermediate	N-1		Intermediate of Darifenacin Hydrobromide
	2,3-Dihydrobenzofuranyl-5-acetic acid	69999-16-2	Intermediate	N-2		
	3-(S)-(+)-(1-Carbamoyl-1,1-diphenylmethyl)pyrrolidine-L-(+)-tartarate	134002-26-9	Intermediate	N-3		
48	Donepezile Hydrochloride	120014-06-4	API	N		Alzheimer's disease
	1-Benzyl-4-(5,6-dimethoxy-1-oxoindan-2-ylindenemethyl)piperidine	120014-07-5	Intermediate	N-1		Intermediate of Donepezile Hydrochloride
	N-Benzylpiperidine-4-carboxaldehyde	22065-85-6	Intermediate	N-2		
	5,6-Dimethoxy-1-indanone	2107-69-9	Intermediate	N-3		
49	Ropivacaine hydrochloride monohydrate	132112-35-7	API	N	Anaesthetic	
	Ropivacaine Base	84057-95-4		N-1		
	S(-)-Propyl-(1-propylpiperidine)-2-carboxylate	NA		N-2	Intermediate of Ropivacaine hydrochloride monohydrate	
	L-Pipecolic acid	3105-95-1		N-3		
50	Albendazole	54965-21-8	API	N	Anthelmintic/Anti worm	
	4-(Propylthio)-1,2-phenylenediamine	66608-52-4		N-1		
	2-Nitro-4-(propylthio)aniline	54393-89-4		N-2	Intermediate of Albendazole	
	4-amino-3-nitrophenyl thiocyanate	54029-45-7		N-3		
51	Montelukast sodium	151767-02-1	API	N	Asthma	
	Montelukast Dicyclohexylamine salt	577953-88-9	Intermediate	N-1	Intermediate of	

	(S) Benzenepropanol C-3-2-(7-chloro-2-quinolinyl)ethenylphenyl-2-(1-hydroxy-1-methyl ethyl)-O-methane sulfonate	807638-71-7	Intermediate	N-2		Montelukast sodium
	(s)-1-(3-(2-(7-chloro-2-quinolinyl)ethenyl)phenyl)-3-(2-(1-hydroxy-1-methylethyl)-phenyl)propanol	142569-70-8	Intermediate	N-3		
52	Anagrelide Hydrochloride monohydrate	823178-43-4	API	N		Blood disorder
	6,7-dichloro-1,5-dihydroimidazo[2,1-b]quinazolin-2(3H)-one	68475-42-3	Intermediate	N-1		Intermediate of Anagrelide Hydrochloride monohydrate
	ethyl(5,6-dichloro-2-imino-1,4-dihydroquinazolin-3(2H)-yl)acetate—hydrogen bromide	70381-75-8	Intermediate	N-2		
53	Adapalene	106685-40-9	API	N		Acne
	Methyl 6-[3-(1-adamantyl)-4-methoxyphenyl]-2-naphthoate	106685-41-0	Intermediate	N-1		Intermediate of Adapalene
	1-(5-Bromo-2-methoxyphenyl)adamantane	104224-63-7	Intermediate	N-2		
	2-(1-admantyl)-4-bromophenol	104224-68-2	Intermediate	N-3		
54	Eltrombopag olamine monohydrate	496775-62-3	API	N		Treat low platelet counts
	2-(3,4-Dimethylphenyl)-5-methyl-1H-pyrazol-3(2H)-one	277299-70-4	Intermediate	N-1		Intermediate of Eltrombopag olamine monohydrate
	3'-Amino-2'-hydroxy-[1,1'-biphenyl]-3-carboxylic acid	376592-93-7	Intermediate	N-2		
55	Zolpidem tartrate	99294-93-6	API	N		Sedative - hypnotics
	6-Methyl-2-(4-methylphenyl)imidazol[1,2-a]pyridine-3-acetic acid	189005-44-5	Intermediate	N-1		Intermediate of Zolpidem tartrate
	[6-methyl-2-(4-methylphenyl)imidazo[1,2-a]pyridin-3-yl]acetonitrile	768398-03-4	Intermediate	N-2		
	N,N-dimethyl-1-[6-methyl-2-(4-methylphenyl)imidazo[1,2-a]pyridin-3-yl]methanamine	106961-33-5	Intermediate	N-3		
	6-methyl-2-(4-	88965-00-8	Intermediate	N-4		

	methylphenyl)imidazo[1,2-a]pyridine					
56	Dapoxetine HCl	129938-20-1	API	N		Premature ejaculation
	(1R)-3-[(naphthalen-1-yl)oxy]-1-phenylpropan-1-ol	156453-53-1	Intermediate	N-1		Intermediate of Dapoxetine HCl
	(1R)-3-chloro-1-phenylpropan-1-ol	100306-33-0	Intermediate	N-2		
	3-chloro-1-phenylpropan-1-one	936-59-4	Intermediate	N-3		
57	Rasagiline tartarate	136236-52-7	API	N		CNS
	(1R)-N-prop-2-ynyl-2,3-dihydro-1H-inden-1-amine L-(+)-tartrate	1201685-18-8	Intermediate	N-1		Intermediate of Rasagiline tartarate
	Propargyl benzenesulfonate	6165-75-9	Intermediate	N-2		
	2,3-Dihydro-1H-inden-1-amine	70146-15-5	Intermediate	N-3		
58	Levosimendan	141505-33-1	API	N		Chronic heart failure
	(R)-6-(4-Aminophenyl)-5-methyl-4,5-dihydropyridazin-3(2H)-one	101328-85-2	Intermediate	N-1		Intermediate of Levosimendan
	6-(4-Aminophenyl)-4,5-dihydro-5-methyl-3(2H)-pyridazinone	36725-28-7	Intermediate	N-2		
59	Dimethyl fumarate	624-49-7	API	N		Psoriasis
60	Rebamipide	90098-04-7	API	N		
	2-amino-3-(2-oxo-1,2-dihydroquinolin-4-yl)propanoic acid dihydrochloride dihydrate	5162-90-3	Intermediate	N-1		Intermediate of Rebamipide
	4-(bromomethyl)quinolin-2(1H)-one	4876-10-2	Intermediate	N-2		
	3-oxo-N-phenylbutanamide	0102-01-02	Intermediate	N-3		
61	Bempedoic acid	738606-46-7	API	N		
	8-Oxo-2,2,14,14-Tetramethylpentadecanedioic acid	413624-71-2	Intermediate	N-1		Intermediate of
	Diethyl-8-OXO-2,2,14,14-Tetramethylpentadecanedioic acid ester	738606-43-4	Intermediate	N-2		
	2,2,14,14-tetramethyl-8-isocyanate-8-tosyl-pentadecanedioic acid diethyl ester	738606-44-5	Intermediate	N-3		
	ethyl 7-bromo-2,2-dimethylheptanoate	123469-92-1	Intermediate	N-4		
62	Fingolimod Hydrochloride	162359-56-0	API	N		

	2-Acetamido-2-(4-octylphenethyl)propane-1,3-diyl diacetate	162358-09-0	Intermediate	N-1		
	2-Acetamido-2-(4-octanoylphenethyl)propane-1,3-diyl diacetate	249289-07-4	Intermediate	N-2		
	2-Acetamido-2-[(acetyloxy)methyl]-4-phenylbutyl acetate	162359-95-7	Intermediate	N-3		Interme diate of
	Diethyl acetamido(2-phenylethyl)propanedioate	5463-92-3	Intermediate	N-4		
63	Dapagliflozin propylene glycol hydrate	960404-48-2	API	N		Antidiab etic
	(1S)-1,5-Anhydro-1-C-[4-chloro-3-[(4-ethoxyphenyl)methyl]phenyl]-D-glucitol tetraacetate	461432-25-7	Intermediate	N-1		Interme diate of Dapaglif lozin propylen e glycol hydrate
	2,3,4,6-Tetrakis-O-trimethylsilyl-D-gluconolactone	32384-65-9	Intermediate	N-2		
	5-bromo-2-chloro-4'-ethoxydiphenylmethane	461432-23-5	Intermediate	N-3		
	(5-bromo-2-chlorophenyl)(4-ethoxyphenyl)methanone	461432-22-4	Intermediate	N-4		
64	Empagliflozin	864070-44-0	API	API		Antidiab etic
	Methyl 1-C-[4-chloro-3-[[4-[(3S)-tetrahydro-3-furanyl]oxy]phenyl]methyl]phenyl]-alpha-D-glucopyranoside	1279691-36-9	Intermediate	N-1		Interme diate of Empaglif lozin
	(3S)-3-[4-[(5-Bromo-2-chlorophenyl)methyl]phenoxy]tetrahydro-furan	915095-89-5	Intermediate	N-2		
	(S)-(+)-3-Hydroxytetrahydrofuran	86087-23-2	Intermediate	N-3		
65	Iliconazole	187164-19-8	API	N		Antifungl e
	2,4-dichloro-1-[(1S)-1,2-dichloroethyl]benzene	1428650-20-7	Intermediate	N-1		Interme diate of Iliconaz ole
	(R)-2-chloro-1-(2,4-dichlorophenyl)ethan-1-ol	114446-57-0	API	N-2		
	2-Chloro-1-(2,4-dichlorophenyl)ethanone	4252-78-2	Intermediate	N-3		
66	Sitagliptine phosphate monohydrate	654671-77-9	API	N		Antidiab etic
	(3R)-3-Amino-1-[3-(trifluoromethyl)-5,6,7,8-tetrahydro-1,2,4-triazolo[4,3-a]pyrazin-7-yl]-4-(2,4,5-trifluorophenyl)butan-1-one	486460-32-6	Intermediate	N-1		Interme diate of Sitaglipti ne phospha

	(Z)-3-Amino-1-(3-trifluoromethyl-5,6-dihydro-8H-[1,2,4]triazolo[4,3-a]pyrazin-7-yl)-4-(2,4,5-trifluoro-phenyl)-but-2-en-1-one	767340-03-4	Intermediate	N-2		te monohydrate
	4-Oxo-4-[3-(trifluoromethyl)-5,6-dihydro[1,2,4]triazolo[4,3-a]pyrazin-7(8H)-yl]-1-(2,4,5-trifluorophenyl)butan-2-one	764667-65-4	Intermediate	N-3		
	5-[1-Hydroxy-2-(2,4,5-trifluorophenyl)ethylidene]-2,2-dimethyl-1,3-dioxane-4,6-dione	764667-64-3	Intermediate	N-4		
67	Vildagliptin	274901-16-5	API	N		Antidiabetic
	3-Amino-1-hydroxyadamantane	702-82-9	Intermediate	N-1		Intermediate of Vildagliptin
	(S)-1-(2-Chloroacetyl)pyrrolidine-2-carbonitrile	207557-35-5	Intermediate	N-2		
	L-Prolinamide	7531-52-4	Intermediate	N-3		
68	Linagliptin	668270-12-0	API	API		Antidiabetic
	2-(3R)-3-Piperidinyl-1H-isoindole-1,3(2H)-dione D(-)-tartarate	886588-62-1	Intermediate	N-1		Intermediate of Linagliptin
	8-Bromo-7-(2-butyn-1-yl)-3,7-dihydro-3-methyl-1-[(4-methyl-2-quinazoliny)methyl]-1H-purine-2,6-dione	853029-57-9	Intermediate	N-2		
	3-Methyl-7-(2-butyn-1-yl)-8-bromoxanthine	666816-98-4	Intermediate	N-3		
	2-(Chloromethyl)-4-methylquinazoline, 2-(Chloromethyl)-4-methylquinazoline	109113-72-6	Intermediate	N-4		
69	Lacosamide	175481-36-4	API	API		Anticonvulsant
	(R)-2-Amino-N-benzyl-3-methoxypropanamide	196601-69-1	Intermediate	N-1		Intermediate of Lacosamide
	(R)-Tert-butyl 1-(benzylamino)-3-methoxy-1-oxopropan-2-ylcarbamate	880468-89-3	Intermediate	N-2		
	(R)-2-(Tert-butoxycarbonylamino)-3-methoxypropanoic acid	86123-95-7	Intermediate	N-3		
	(R)-2-(Tert-butoxycarbonylamino)-3-hydroxypropanoic acid	6368-20-3	Intermediate	N-4		
70	Mirabegron	223673-61-8	API	API		Antimuscarinic

	(R)-2-((4-Aminophenethyl)amino)-1-phenylethanol	391901-45-4	Intermediate	N-1		
	(alphaR)-alpha-[[[2-(4-Nitrophenyl)ethyl]amino]methyl]benzenemethano	223673-34-5	Intermediate	N-2	Intermediate of Mirabegron	
	2-Amino-4-thiazoleacetic Acid	29676-71-9	Intermediate	N-3		
	4-Nitrophenethylamine Hydrochloride	29968-78-3	Intermediate	N-4		
71	Remdesivir	1809249-37-3	API	N		Antiviral
	(2R,3R,4R,5R)-2-(4-Aminopyrrolo[2,1-f][1,2,4]triazin-7-yl)-3,4-bis(benzyloxy)-5-((benzyloxy)methyl)tetrahydrofuran-2-carbonitrile	1355357-49-1	Intermediate	N-1	Intermediate of Remdesivir	
	2-ethylbutyl (2S)-2-(chloro(phenoxy)phosphorylamino)propanoate	1355049-92-1	Intermediate	N-2		
	2,3,5-Tri-O-benzyl-D-ribofuranose	55094-52-5	Intermediate	N-3		
72	Ticagrelor	274693-27-5	API	N	Antiplatelet	
	2-(((3aR,4S,6R,6aS)-6-(7-(((1R,2S)-2-(3,4-difluorophenyl)cyclopropyl)amino)-5-(propylthio)-3H-[1,2,3]triazolo[4,5-d]pyrimidin-3-yl)-2,2-dimethyltetrahydro-3aH-cyclopenta[d][1,3]dioxol-4-yl)oxy)ethanol	274693-26-4	Intermediate	N-1	Intermediate of Ticagrelor	
	2-(((3aR,4S,6R,6aS)-6-(7-Chloro-5-(propylthio)-3H-1,2,3-triazolo[4,5-d]pyrimidin-3-yl)tetrahydro-2,2-dimethyl-4H-cyclopenta-1,3-dioxol-4-yl)oxy)ethanol	376608-75-2	Intermediate	N-2		
	5-Amino-4,6-dichloro-2-(propylthio)pyrimidine	145783-15-9	Intermediate	N-3		
	(1R,2S)-2-(3,4-Difluorophenyl)cyclopropanamine	220352-38-5	Intermediate	N-4		
73	Molnupiravir	2349386-89-4	API	N	Antiviral	
	5'-O-Isobutyryl Cytidine	-	Intermediate	N-1	Intermediate of Molnupiravir	
	2-methyl-1-(((propan-2-ylidene)amino)oxy)propan-1-one	-	Intermediate	N-2		
	N-(PROPAN-2-YLIDENE)HYDROXYLAMINE	127-06-0	Intermediate	N-3		

74	Tofacitinib citrate	540737-29-9	API	N	Arthritis	
	N-Methyl-N-((3R,4R)-4-methylpiperidin-3-yl)-7H-pyrrolo[2,3-d]pyrimidin-4-amine	477600-74-1	Intermediate	N-1		Intermediate of Tofacitinib citrate
	4-Chloro-7-tosyl-7H-pyrrolo[2,3-d]pyrimidine	479633-63-1	Intermediate	N-2		
	(3R,4R)-N,4-Dimethyl-1-(phenylmethyl)-3-piperidinamine hydrochloride	1062580-52-2	Intermediate	N-3		
75	Tenofovir disoproxil fumarate	202138-50-9	API	N	Antiviral	
	({(2R)-1-(6-amino-9H-purin-9-yl)propan-2-yl}oxy)methyl)phosphonic acid	147127-20-6 / 107021-12-5	Intermediate	N-1	Intermediate of Tenofovir disoproxil fumarate	
	(2R)-1-(6-amino-9H-purin-9-yl)propan-2-ol	14047-27-9	Intermediate	N-2		
	(4R)-4-methyl-1,3-dioxolan-2-one	51260-39-0	Intermediate	N-3		
	(Diethoxyphosphoryl)methyl 4-methylbenzenesulfonate	31618-90-3	Intermediate	N-4		
76	Aripiprazole	129722-12-9	API	N	Antipsychotic	
	7-{4-[4-(2,3-dichlorophenyl)piperazin-1-yl]butoxy}-1,2,3,4-tetrahydroquinolin-2-one	129722-12-9	Intermediate	N-1	Intermediate of Aripiprazole	
	7-(4-Chlorobutoxy)-3,4-dihydro-2(1H)-quinolinone	120004-79-7	Intermediate	N-2		
77	Fenofibrate	49562-28-9	Intermediate	API	Antilipemic	
	Choline salt of fenofibric acid	856676-23-8	Intermediate	API	Intermediate of Fenofibrate	
	fenofibric acid	42017-89-0	Intermediate	API		
	4-hydroxy-4-chlorobenzophenone	42019-78-3	Intermediate	N-1		
78	Losartan Potassium	124750-99-8	API	N	Antihypertensive	
	(1-((2'-(1H-tetrazole-5-yl)biphenyl-4-yl)2-butyl-4-chloro-1H-imidazole-5-yl)methanol	114798-26-4	Intermediate	N-1	Intermediate of Losartan potassium	
	4'-((2-Butyl-4-chloro-5-(hydroxymethyl)-1H-imidazole-1-yl)methyl)biphenyl-2-carbonitrile	114772-55-3	Intermediate	N-2		
79	Teneligliptin	760937-92-6	API	N	Antidiabetic	
	(2S)-4-Oxo-2-(3-thiazolidinylcarbonyl)-1-pyrrolidinecarboxylic acid tert-butyl ester	401564-36-1	Intermediate	N-1	Intermediate of Teneligliptin	
	1-(3-Methyl-1-phenyl-5-	401566-79-8	Intermediate	N-2		

	pyrazolyl)piperazine					
80	Escitalopram oxalate	219861-08-2	API	N		Anti depressant
	(-)-4-(4-Dimethylamino)-1-(4-fluorophenyl)-1-(hydroxybutyl)-3-hydroxymethyl)-benzoxazole hemi D-(+)-di-p-toloyltartaric acid salt	128173-53-5	Intermediate	N-1		Intermediate of Escitalopram oxalate
	4-(4-(dimethylamino)-1-(4-fluorophenyl)-1-hydroxybutyl)-3-(hydroxymethyl)benzoxazole	103146-25-4	Intermediate	N-2		
	3-(N,N-dimethylamino)-propylmagnesium chloride	19070-16-7	Intermediate	N-3		
	1-(4-Fluorophenyl)magnesium bromide	352-13-6	Intermediate	N-4		
81	Propofol	2078-54-8	API	N		General anesthetic
	4-hydroxy -3,5-diisopropylbenzoic acid	13423-73-9	Intermediate	N-1		Intermediate of Propofol
82	Pioglitazone hydrochloride	112529-15-4	API	N		Antidiabetic
	5-{4-[2-(5-Ethyl-2-pyridinyl)ethoxy]benzyl}-2,4-thiazolidinedione	111025-46-8	Intermediate	N-1		Intermediate of Pioglitazone
	5-{4-[2-(5-Ethyl-2-pyridinyl)ethoxy]benzylidene}-2,4-thiazolidinedione	144809-28-9	Intermediate	N-2		
	4-[2-(5-Ethyl-2-pyridinyl)ethoxy]benzaldehyde	114393-97-4	Intermediate	N-3		
	2-(5-Ethyl-2-pyridinyl)ethylmethane sulfonate	144809-26-7	Intermediate	N-4		
83	R & D				1	
	TOTAL				71	

- 3) 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.
- 4) The proposal was considered in the SEAC video conference meeting dated 15.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System,

Hazardous waste matrix, EMP, CER, Green belt, etc.

7) Committee asked to submit the following:

- To submit the justification of 1 MT/Month proposed R&D quantity.

8) Later on PP submitted following details through email.

- The unit has submitted the justification of R&D products, List of equipments for R&D, List of patents filled by the PP, and list of molecules which are under development stage.

9) Committee found presentation and submission of project proponent satisfactory.

10) 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

11) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 1223(E) dated 27.03.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.

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

Sr. no.	Particulars	Details														
A-1	Project cost															
Total cost of Proposed Project (Rs. in Crores):																
<table border="1"> <tr> <td>Total Project</td> </tr> <tr> <td>Rs. 9.5 Crores</td> </tr> </table>			Total Project	Rs. 9.5 Crores												
Total Project																
Rs. 9.5 Crores																
Break-up of proposed project Cost:																
<table border="1"> <thead> <tr> <th>Details</th> <th>Project Cost (Rs. In Crores)</th> </tr> </thead> <tbody> <tr> <td>Land</td> <td>0.50</td> </tr> <tr> <td>Building</td> <td>1.50</td> </tr> <tr> <td>Machinery</td> <td>4.00</td> </tr> <tr> <td>Env. & Safety</td> <td>0.50</td> </tr> <tr> <td>Miscellaneous</td> <td>3.00</td> </tr> <tr> <td>Total</td> <td>9.50</td> </tr> </tbody> </table>			Details	Project Cost (Rs. In Crores)	Land	0.50	Building	1.50	Machinery	4.00	Env. & Safety	0.50	Miscellaneous	3.00	Total	9.50
Details	Project Cost (Rs. In Crores)															
Land	0.50															
Building	1.50															
Machinery	4.00															
Env. & Safety	0.50															
Miscellaneous	3.00															
Total	9.50															
A-2	Details of CER -															
PP shall carry out CER activities as below:																
<ul style="list-style-type: none"> ✓ To Provide Solar panel system and solar streetlight at primary school of sadthala village and Primary health centre and panchayat office. 																
B	Land / Plot ownership details:															
Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/ANK/ALT/O28833 dated on 18th- September-2021. The plot is on the name of Dr. SiddhathGajera, Dr. JagdishGodhasra& Dr. BhavinThanki. All are the Project Proponent of M/s. Chon																

Chem Industries.

B-1 Plot area

Total Plot area
2439.97 Sq. m..

B-2 Area adequacy

- **Production area**
- Total plot area of the unit is 2439.97 Sq.mt.
- Total production capacity will be 71 MT/Month.
- The unit will develop total 2 Nos. of manufacturing facilities of total area 465.78 Sq.mt. on ground floor.
- Unit has allotted total 100 Sq. mt area for Raw Material.
- ETP area will be 70 Sq.mt.
- Utility area will be 100 Sq.mt.
- Manufacturing facility will be G+2 facility.

Area Adequacy table:

BUILDINGAREASTATEMENT				
NO.	BLDG.NAME	G.F.	TOTAL AREA	% OFTOT ALLAN D
1	GREENBELT-1	720.25	720.25	29.52
2	GREENBELT-2	43.00	43.00	1.76
3	GREENBELT-3	43.00	43.00	1.76
4	SECURITYCABIN	20.00	20.00	0.82
5	ADMINOFFICE	65.00	65.00	2.66
6	U.G.WATERTANK	25.00	25.00	1.02
7	O.H.C.	20.00	20.00	0.82
8	PLANTBLDG.-2	195.78	195.78	8.02
9	PLANTBLDG.-1	270.00	270.00	11.07
10	CYLINDERSTORAG EAREA	30.00	30.00	1.23
11	E.T.P.PANT	70.00	70.00	2.87
12	HAZARDOUSWASTE STORAGEAREA	30.00	30.00	1.23
13	UTILITYBLDG.	100.00	100.00	4.10
14	R.M.STORAGEBLDG.	100.00	100.00	4.10
15	SOLVENTSTORAGEBLDG	80.00	80.00	3.28
15	ROAD&OPENSAPCE	627.94	627.94	25.74
	TOTAL	2439.97	2439.97	100.00

6) 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

	Total (Sq. meter)
Area in Sq. meter	806.25 (Within premises)
% of total area	33.04

Comments:

The condition shall be given that -

- The PP shall develop green belt (806.25 Sq. m i.e. 33.04 % 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

Employment generation

Total
50

D WATER

D-1 Source of Water Supply

- Letter No. GIDC/DEE/WS/BRH/1101 Date:-24/11/2021.

Comments:

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

D-2 Water consumption (KLD)

Category	Quantity KLD
• Domestic	2
• Gardening	2
• Industrial	
Process	10
Washing	2
Boiler	2
Cooling	6

Process Scrubber	1
Others (Scrubber)	2
Industrial Total	23
Grand Total (A+B+C)	27

Comments:

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

D-3 Waste water generation (KLD)

Category	Waste water KLD
(G) Domestic	2
(H) Industrial	
Process	17
Washing	2
Boiler	1
Cooling	1
Others (Scrubber)	1
Total Industrial waste water	22
Total [A + B]	24

Comments:

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

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

02 KLD Domestic Waste Water will be treated in ETP & treated wastewater will be sent to CETP-Saykha.

Comments:

Domestic wastewater generation shall not exceed 02 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.

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

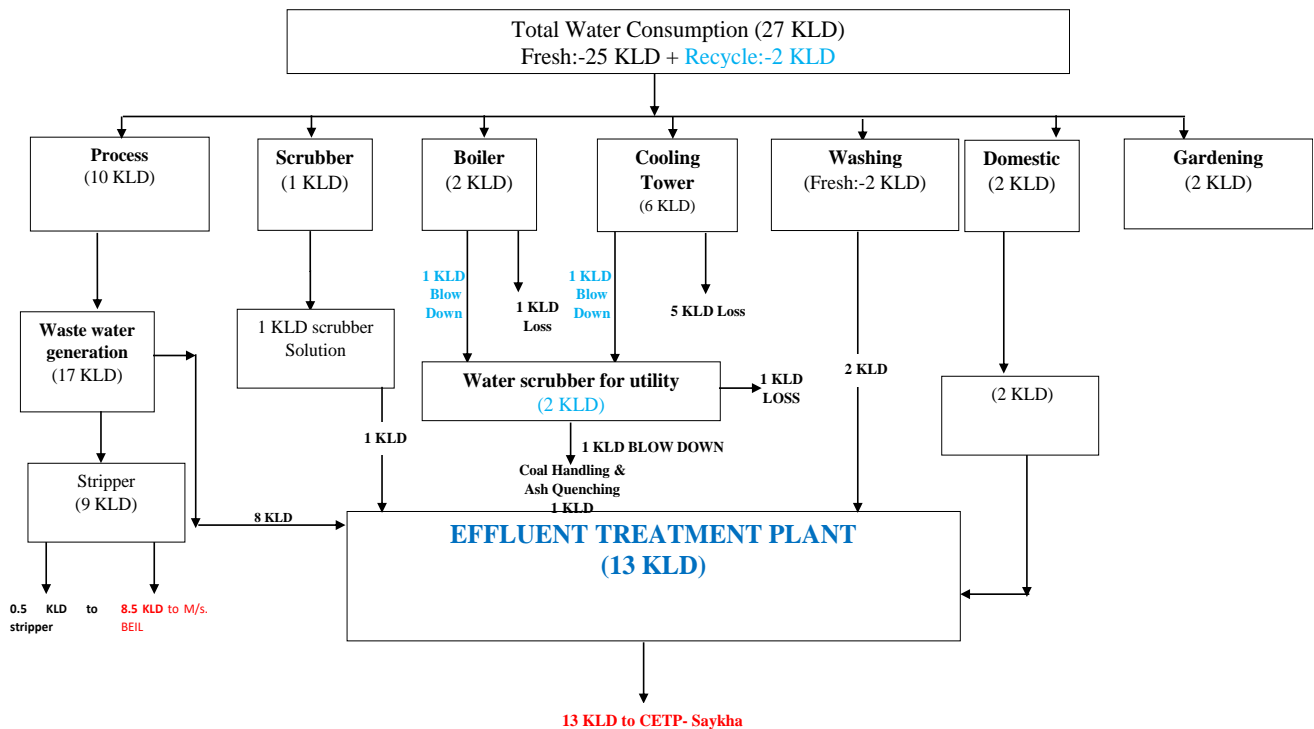
Sr. no.	Quantity KLD	Facility
1	11	CETP Saykha
2	2	Reused
3	9	In house stripper to CMEE of M/s .BEIL
Total	22	

Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)

Membership certificate of M/s:BEIL-Ankleshwar vide no. Ref. BEIL/ANL/2021 dated 21.10.2021

Membership certificate of M/s: CETP-Saykha vide no. Ref. GIDC/BRH/DEE/DRG/684 dated 15.11.2021

D-5b Simplified water balance diagram



D-5c Summary

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	27 KLD	--
Quantity to be recycled (B)	2 KLD	1 KLD Boiler blow down and 1 KLD Cooling tower blow down
Total fresh water requirement (C)	25 KLD	--
Ensure Total water requirement = Fresh water + Recycled water i.e. A = B + C		

Comments:

17. Total water requirement for the project shall not exceed 27 KLD. Unit shall reuse 2 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 25 KLD and it shall be met through

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

18. Management of Industrial effluent shall be as under:

- ✓ Total effluent generation from the manufacturing process shall be 17 KLD.
- ✓ From that, the unit shall segregate 9 KLD high COD effluent and 8 KLD low COD effluent at a source.
- ✓ High COD 9 KLD effluent shall be subjected to in-house stripper and subjected to CMEE of M/s. BEIL.
- ✓ Low COD effluent (8 KLD) along with 1 KLD scrubber solution, 2 KLD washing effluent and 2 KLD domestic effluent shall be treated in to inhouse ETP and send to CETP-Saykha.
- ✓ Treated waste water shall be sent to CETP only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.

19. Unit shall provide ETP with adequate capacity.

20. 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 :500 KVA

E-2 | **Flue gas emission details**

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)
9.	Steam Boiler (2 TPH)	30	Natural Gas OR Agro Waste/ Briquette/Coal	4800M ³ /Day OR 8.5 MT/ Day	PM SO ₂ NO _x	Multi Cyclone Separator + Bag Filter + Water Scrubber
10.	Thermic Fluid Heater 1 Nos. (2 Lack Kcal/hr)		Natural Gas OR Agro Waste/ Briquette/Coal	600 M ³ /Day OR 1 MT/Day	PM SO ₂ NO _x	
11.	DG Set 125 KVA	12	Diesel	20 Lit/Hr.	PM SO ₂ NO _x	Acoustic Enclosure

E-3 | **Process gas**

Sr No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
1	Reaction Vessels (Chlorination) (Bromination) (Sulphonation) (Nitration)	HCl SO ₂ Cl ₂ HBr Br ₂ NOx	22	Water Scrubber followed by Alkali Scrubber
2	Reaction Vessels (Amination)	Ammonia	22	Water scrubber followed by acid scrubber

E-4 Fugitive emission details with its mitigation measures.

- For Fugitive emission such as VOCs, VOC detectors will be installed.
- Leak Detection and Repair (LDAR) program shall be implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment.
- To control fugitive emission from process / reaction, all reactor condensers shall be connected to a scrubber to minimize loss of solvents / fugitive emission in to the atmosphere.

Comments for E2, E3 & E4:

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

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

Product	Solvent	Total solvent	Fresh solvent	Recover solvent	Percent age Recovery
Brexpiprazole	Methanol	207.9	8.316	199.58	96
	Isopropyl alcohol	161	4.83	156.17	97
	Toluene	141.4	4.935	136.065	96.5
	Acetic acid	106.4	3.18	102.82	97
Lurasidone	Toluene	186.2	7.448	178.752	96
	Acetone	154.7	6.188	148.512	96
	Isopropyl alcohol	173.6	5.208	168.392	97

Olanzapine	Isopropyl alcohol	168	5.88	162.12	96.5
	Toluene	321.3	12.852	308.448	96
	Acetonitrile	191.8	5.754	186.046	97
Paliperidone	Acetone	47.6	1.666	45.934	96.5
	Methylene dichloride	296.1	11.844	284.256	96
	Isopropyl alcohol	131.6	3.948	127.652	97
	Methanol	423.5	14.8225	408.6775	96.5
	Toluene	209.3	4.186	205.114	98
Quetiapine	Acetic acid	119	2.975	116.025	97.5
	Toluene	303.8	6.076	297.724	98
	Acetone	77.7	2.331	75.369	97
	Methanol	324.8	9.744	315.056	97
Iloperidone	Toluene	93.1	3.2585	89.8415	96.5
	Methanol	392	17.64	374.36	95.5
	Acetone	141.4	5.66	135.74	96
	Methylene dichloride	102.9	3.09	99.81	97
	Isopropyl alcohol	118.3	4.14	114.16	96.5
Duloxetine Hydrochloride	Isopropyl alcohol	175.7	3.51	172.19	98
	Toluene	210.7	5.27	205.43	97.5
	Dimethyl sulfoxide	136.5	2.73	133.77	98
	Methylene dichloride	160.3	4.81	155.49	97
	Methanol	175.7	5.27	170.43	97
Fluoxetine	Acetone	8.4	0.29	8.11	96.5
Guanfacine HCl	Toluene	205.8	9.26	196.54	95.5
	Methanol	171.5	6.86	164.64	96
	Isopropanol	210.7	6.32	204.38	97
Labetalol HCl	Methylene dichloride	274.4	9.6	264.80	96.5
	Methanol	364	7.28	356.72	98
	Dimethyl formamide	269.5	6.74	262.76	97.5
	Acetone	303.8	12.15	291.65	96
Lercanidipine HCl	Xylene	277.2	8.32	268.88	97
	Methanol	193.2	6.76	186.44	96.5
	Ethylacetate	241.5	4.83	236.67	98
	Isopropyl alcohol	250.6	6.26	244.34	97.5
	Ethyl acetate	438.9	8.78	430.12	98
	Acetonitrile	219.1	6.57	212.53	97
Nebivolol Hydrochloride	Methanol	160.3	4.81	155.49	97
	Acetic acid	182	6.37	175.63	96.5
	Toluene	196.7	8.85	187.85	95.5
	Dimethyl formamide	157.5	3.15	154.35	98
	Methanol	256.9	7.71	249.19	97

	Hexane	15727.6	471.83	15255.77	97
	Ethyl acetate	1887.2	66.05	1821.15	96.5
	Isopropyl alcohol	238	10.71	227.29	95.5
OLMESARTAN MEDOXOMIL	Ethanol	226.8	9.07	217.73	96
	Ethylene dichloride	648.2	19.45	628.75	97
	Hexane	372.4	13.03	359.37	96.5
	Methanol	485.8	9.72	476.08	98
TELMISARTAN	Ethyl acetate	271.6	6.79	264.81	97.5
	Methanol	257.6	5.15	252.45	98
	Acetone	317.1	9.51	307.59	97
	Methanol	623	18.69	604.31	97
BOSANTAN MONOHYDRATE	Methanol	310.1	10.85	299.25	96.5
	Toluene	387.1	17.42	369.68	95.5
	Ethyl acetylate	482.3	19.29	463.01	96
	Dimethyl sulfoxide	436.1	13.08	423.02	97
	Toluene	875	30.63	844.38	96.5
	Dimethyl formamide	546	10.92	535.08	98
BRIVARACETAM	Heptane	210	5.25	204.75	97.5
	Ethyl acetate	387.8	15.51	372.29	96
	Methanol	413	12.39	400.61	97
LAMOTRIGINE	Acetonitrile	198.1	6.93	191.17	96.5
	Methanol	303.8	6.08	297.72	98
	Toluene	280.7	7.02	273.68	97.5
OXCARBAZOL	Methanol	175	3.50	171.50	98
	Toluene	235.9	7.08	228.82	97
TOPIRAMATE	Acetone	210	6.30	203.70	97
	Methylene dichloride	273	9.56	263.45	96.5
ZXONISAMIDE	Methanol	324.1	14.58	309.52	95.5
	Toluene	377.3	15.09	362.21	96
APREMILASIN	Methanol	350	7.00	343.00	98
	Toluene	205.8	9.26	196.54	95.5
	Acetic acid	256.9	5.14	251.76	98
ESOMEPRAZOLE MAGNESIUM TRIHYDRATE	Acetic acid	210	5.25	204.75	97.5
	Methanol	296.1	5.92	290.18	98
	Toluene	526.4	10.53	515.87	98
	Methylene dichloride	421.4	12.64	408.76	97
OMEPRAZOLE	Methanol	210	8.40	201.60	96
	Ethyl acetate	214.2	9.64	204.56	95.5
RABEPRAZOLE	Acetic acid	194.7	7.79	186.91	96
	Methylene dichloride	296.1	5.92	290.18	98
	Toluene	562.8	25.33	537.47	95.5
	Acetone	422.1	8.44	413.66	98

	Acetonitrile	452.9	11.32	441.58	97.5
	Methanol	543.9	10.88	533.02	98
Milnacipran Hydrochloride	Toluene	8.4	0.17	8.23	98
Nicorandil	Ethyl acetate	42.7	1.28	41.42	97
Tramadol Hydrochloride	THF	28.7	1.15	27.55	96
ZOLMITRIPTAN	Ethyl acetate	204.4	9.20	195.20	95.5
	Ethanol	211.4	8.46	202.94	96
	Ethyl acetate	338.1	6.76	331.34	98
ZOLEDRONIC ACID	Toluene	1050	47.25	1002.75	95.5
	Acetone	257.6	5.15	252.45	98
	Methanol	70.7	1.77	68.93	97.5
IBANDRONATE	Methanol	273.7	5.47	268.23	98
	Octane	408.8	8.18	400.62	98
ALENDRONATE SODIUM	Methanol	271.6	8.15	263.45	97
	n-Octane	373.8	14.95	358.85	96
RISEDRONATE SODIUM	Methanol	263.2	11.84	251.36	95.5
	n-Octane	306.6	6.13	300.47	98
Alogliptin benzoate	Acetone	3.99	0.12	3.87	97
Glimepiride	THF	130.9	5.24	125.66	96
	Acetone	252.7	5.05	247.65	98
Rivaroxaban	Methanol	159.6	5.59	154.01	96.5
	Toluene	230.3	4.61	225.69	98
	Isopropylalcohol	102.2	2.56	99.65	97.5
	Acetic acid	505.4	15.16	490.24	97
DABIGATRAN ETEXILATE	Methanol	245	4.90	240.10	98
	Dichloromethane	357	17.85	339.15	95
	Acetone	302.4	12.10	290.30	96
	Isopropyl alcohol	252	7.56	244.44	97
	Dichloromethane	201.6	8.06	193.54	96
Apixaban	Ethanol	20.3	0.41	19.89	98
	THF	23.1	1.04	22.06	95.5
	Ethyl acetate	28.7	0.57	28.13	98
AlfuzosinHCl	Acetic acid	2.8	0.07	2.73	97.5
	Methylene dichloride	10.5	0.21	10.29	98
	Isopropyl alcohol	4.9	0.10	4.80	98
	methanol	5.6	0.17	5.43	97
	Acetone	2.1	0.08	2.02	96
	Toluene	6.3	0.28	6.02	95.5
Silodosin	Toluene	6.3	0.13	6.17	98
	Methanol	11.9	0.36	11.54	97
	Isopropylalcohol	4.9	0.20	4.70	96

	ohol				
Rosuvastatin calcium	Acetone	33.6	0.67	32.93	98
	Ethylacetate	30.1	1.05	29.05	96.5
	Hexane	30.1	0.60	29.50	98
	Toluene	49.7	1.24	48.46	97.5
	Methanol	35.7	1.07	34.63	97
Ranolazine	methanol	33.6	1.34	32.26	96
Sildenafil citrate	Isopropyl alcohol	49.7	0.99	48.71	98
	Methanol	52.5	2.36	50.14	95.5
Vardenafil hydrochloride		1.4			
	Ethanol		0.03	1.37	98
	methanol	1.4	0.03	1.37	97.5
SOLIFINACIN	Ethyl acetate	234.5	4.69	229.81	98
	Methanol	298.2	5.96	292.24	98
	Toluene	188.3	5.65	182.65	97
	Acetone	188.3	7.53	180.77	96
	Toluene	195.3	8.79	186.51	95.5
Darifenacine Hydrobromide	Toluene	13.72	0.27	13.45	98
	Acetone	6.23	0.19	6.04	97
	Methanol	4.69	0.19	4.50	96
Donepezil Hydrochloride	Dichloromethane	47.6	0.95	46.65	98
	Methylene Dichloride	43.4	1.52	41.88	96.5
	Tetrahydrofuran	46.9	0.94	45.96	98
	Ethyl acetate	70	1.75	68.25	97.5
Ropivacaine hydrochloride monohydrate	Toluene	195.35	5.86	189.49	97
	Methanol	298.44	5.97	292.47	98
ALBENDAZOLE	Methanol	350	17.50	332.50	95
	Acetone	200.9	8.04	192.86	96
Montelukast sodium	Tetrahydrofuran	160.3	4.81	155.49	97
	Methylene dichloride	80.5	3.22	77.28	96
	Ethyl acetate	60.2	1.20	59.00	98
	Toluene	43.4	1.95	41.45	95.5
	Methanol	75.6	1.51	74.09	98
Anagrelide Hydrochloride monohydrate	Toluene	13.09	0.33	12.76	97.5
	methanol	14.77	0.30	14.47	98
Adapalene	Acetic acid	12.6	0.25	12.35	98
	Hexane	40.6	1.22	39.38	97
	Acetone	50.4	2.02	48.38	96
	Ethyl acetate	53.2	2.39	50.81	95.5
	Methanol	77.7	1.55	76.15	98
Eltrombopagol amine monohydrate	Methanol	3.1647	0.09	3.07	97
Zolpidem	Ethylene	18.2	0.73	17.47	96

tartrate	dichloride				
	methanol	30.1	0.60	29.50	98
	Acetone	44.8			
			1.57	43.23	96.5
	Ethanol	29.4	0.73	28.67	97.5
	Toluene	25.2	0.76	24.44	97
DapoxetineH Cl	Isopropyl alcohol	39.9	0.80	39.10	98
	Methylene dichloride	66.5			
			3.33	63.18	95
	Hexane	53.2	2.13	51.07	96
	Methylene dichloride	145.6	4.37	141.23	97
	Toluene	116.9	4.68	112.22	96
Rasagiline tartarate	Isopropyl alcohol	124.6	2.49	122.11	98
	methanol	16.1	0.72	15.38	95.5
	Ethyl acetate	4.9	0.10	4.80	98
	Toluene	4.9	0.12	4.78	97.5
	Isopropyl alcohol	5.6	0.11	5.49	98
	methanol	9.1	0.18	8.92	98
Levosimenda n	Acetic acid	86.8	2.60	84.20	97
	methanol	58.8	2.35	56.45	96
Bempeoic acid	Ethyl acetate	175	7.88	167.13	95.5
	Dimethyl sulfoxide	128.8	2.58	126.22	98
	Dichloro methane	368.9	11.07	357.83	97
Dapagliflozin propylene glycol hydrate	Dichloromet hane	140.00	5.60	134.40	96
	Tetrahydrofu ran	181.70	3.63	178.07	98
	Toluene	83.40	2.92	80.48	96.5
	Dichloromet hane	119.15	2.38	116.77	98
	Isopropyl acetate	187.66	4.69	182.97	97.5
	Methanol	134.04	4.02	130.02	97
Empagliflozin	Methanol	167.16	3.34	163.82	98
	Toluene	130.6	6.53	124.07	95
	Dichloro methane	182.84	7.31	175.53	96
Iuliconazole	Hexane	107.14	3.21	103.93	97
	Dichloro methane	190.98	7.64	183.34	96
Sitagliptine phosphate monohydrate	Isopropyl acetate	210.00	4.20	205.80	98
	Methanol	239.47	10.78	228.69	95.5
	sopropanol	162.11	3.24	158.87	98
Vildagliptin	Methanol	140.00	3.50	136.50	97.5
	Dimethyl formamide	164.35	3.29	161.06	98

Lacosamide	Toluene	109.2	4.37	104.83	96
	Dichloromethane	218.4	4.37	214.03	98
	Cyclohexane	149.8	6.74	143.06	95.5
	Ethyl acetate	140	2.80	137.20	98
Mirabegron	Methanol	767.34	19.18	748.16	97.5
	Pyrrolidine	174.96	3.50	171.46	98
	Cyclohexane	174.96	3.50	171.46	98
	Toluene	297.43	8.92	288.51	97
	Acetonitrile	343.51	13.74	329.77	96
Remdesivir	Toluene	350	15.75	334.25	95.5
	Acetic acid	135.66	2.71	132.95	98
	Dichloromethane	520.03	15.60	504.43	97
	Methanol	104.01	4.16	99.85	96
Molnupiravir	Acetone	210.00	4.20	205.80	98
	Dichloromethane	140.00	4.90	135.10	96.5
	Acetone	225	4.50	220.50	98
	1-Butanol	440	11.00	429.00	97.5
Tofacitinib citrate	Acetone	210	6.30	203.70	97
	Toluene	280	5.60	274.40	98
	Methanol	420	21.00	399.00	95
	Hexane	350	14.00	336.00	96
	Acetic acid	490	14.70	475.30	97
Tenofovir disoproxil fumarate	Toluene	350	14.00	336.00	96
	Ethanol	455.02	9.10	445.92	98
	Isopropyl alcohol	409.11	18.41	390.70	95.5
Aripiprazole	DMF	350	7.00	343.00	98
Fenofibrate	Methylene chloride	350	8.75	341.25	97.5
	Acetone	262.43	5.25	257.18	98
	Toluene	546.77	10.94	535.83	98
	Methanol	328.02	9.84	318.18	97
	Isopropyl alcohol	47.11	1.88	45.23	96
Losartan Potassium	Toluene	90.30	4.06	86.24	95.5
	Methanol	174.30	3.49	170.81	98
	Acetone	130.20	3.91	126.29	97
Teneligliptin	Toluene	105.70	4.23	101.47	96
	Dichloromethane	131.60	2.63	128.97	98
	Acetic acid	128.1	4.48	123.62	96.5
	Ethyl acetate	169.4	3.39	166.01	98
Escitalopram oxalate	Tetrahydrofuran	105	2.63	102.38	97.5
	Toluene	160.30	4.81	155.49	97
	Dichloromethane	100.1	2.00	98.10	98
	Isopropyl alcohol	109.9	5.50	104.41	95
Propofol	Toluene	253.4	10.14	243.26	96

	Pioglitazone hydrochloride	Toluene	357.7	10.73	346.97	97
		Isopropyl alcohol	444.5	17.78	426.72	96
		Acetic acid	740.6	14.81	725.79	98
		Methanol	444.5	20.00	424.50	95.5
F-2	VOC emission sources and its mitigation measures					
Measures for achieving maximum solvent recovery and minimize VOC generation:						
<ul style="list-style-type: none"> • The entire manufacturing activities & distillation process will be carried out in a totally closed system. • Maintenance of the pipeline and valves & fittings will be carried out regularly to avoid any leakages. • Reactor will be connected with three numbers of condensers where in the first condenser chilled water will be used whereas in second and third condenser brine solution will be used as media and it will be also equipped with vacuum system as per requirement. • The condenser will be provided with sufficient HTA and residence time to achieve more than 95% recovery. • All the Flange joints of the pipe lines which carry solvents will be covered with flange guards. • VOC detectors will be installed at various places to identify any fugitive emissions. • Minimum number of flanges, joints and valves in pipelines shall be provided. 						
F-3	LDAR proposed:					
Leak Definition						
<ul style="list-style-type: none"> • A leak is detected whenever the measured concentration exceeds the threshold standard (i.e., leak definition) for the applicable regulation. • Leak definitions vary by regulation, component type, service (e.g., light liquid, heavy liquid, gas/vapor), and monitoring interval. • Many equipment leak regulations also define a leak based on visual inspections and observations (such as fluids dripping, spraying, misting or clouding from or around components), sound (such as hissing), and smell. 						
Following steps shall be followed for effective implementation of LDAR Program:						
<ol style="list-style-type: none"> 8. Process Controls 9. Emissions control program 10. Selection of appropriate method for leak detection 11. Scheduling and checklist for Leak Detection 12. Methods for rectification of identified leaks 13. Frequency of Monitoring 14. Record keeping of LDAR Program 						
Comments:						
<ul style="list-style-type: none"> ➤ Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement. ➤ Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs). 						
G	Hazardous waste					

G-1 Hazardous waste management matrix					
Sr . n o.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules	Quantity (MT/ Annum)	Management of HW
1	ETP Waste	From ETP plant	35.3	365	Collection, Storage, Transportation, Disposal at TSDF site
2.	Used Oil	From Lubrication	5.1	5	Collection, Storage & Reused within the premises.
3.	Discarded Drums/Emp ty Barrels/ Containers / Bag/Liners	Packing of raw materials.	33.1	25	Collection, storage, decontamination & disposal by selling to GPCB authorized recycler or recycled back
4.	Spent Caron/ Hyflow	From manufacturing process	28.3	100	Collection, Storage, Transportation & send to Co-processing / Incineration
5.	Spent Catalyst	Generated from product No.29,54,63	28.2	50	Collection, Storage, and sell to regenerator unit.
6.	Distillation Residue	From Solvent Recovery Unit	28.1	500	Collection, storage, Transportation & Send to Co-processing unit / Incineration
7.	Date expired Product	From Manufacturing activity	28.5	1	Collection, storage, transportation, and send to Co-processing / Incineration
8.	Off-specificatio n Product	From Manufacturing activity	28.4	1	
9.	Stripped Solvent	From Stripper	28.6	182.5	Collection, storage, and send to send for Co-processing / send to those units who are having permission of rule-9 / Incineration.
10.	Scrubber Solution* – (Sodium Bromide solution	From Scrubber	--	100	Collection, storage, and send to ETP or send to Rule -9 actual end users.

	(low concentration)				
1 1.	Scrubber Solution* – (Hcl solution) (10% to 12%)	From Scrubber	--	50	Collection, storage and send into ETP.
1 2.	Scrubber Solution* – (SBS solution) (low concentration)	From Scrubber	--	50	Collection, storage, and send to ETP.
1 3.	Scrubber Solution* – (Ammonium sulphate solution) (low concentration)	From Scrubber	--	50	Collection, storage, and send to ETP.
1 4.	Scrubber Solution* (Sodium nitrite/nitrate solution)	From Scrubber	--	65	Collection, storage, and send to ETP.
1 5.	Scrubber solution* (Sodium hypochlorite solution)	From Scrubber	--	50	Collection, storage, and send to ETP

- * We may inform you that due to the low concentration of said scrubber solution, it cannot be accepted by Rule-9 end users hence it will be sent to ETP for further treatment.

Comments:

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

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

- The project proponent has to obtain membership of TSD site & CHWIF before obtaining CTO of GPCB.

G-2 Non- Hazardous waste management matrix

- ✓ Fly Ash generation will be 300 MTPA.

Comments:

- Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.

H SAFETY details

H-1 Details regarding storage of Hazardous chemicals

- Safety details....

Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
1	No. Unit will store all solvents in drums.			

Unit will store all the chemical in drums.

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	Storage in compatible storage unit with flame proof fitting, also provide firefighting measures. Only trained person allowed to handle
CORROSIVE & CHEMICALS	Storage in compatible storage unit with safe distance with other chemicals, Only trained person allowed to handle
TOXIC CHEMICALS	Storage in compatible storage unit with safe distance with other chemicals, Only trained person allowed to handle

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

Comments:

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

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

Type of Process	Safety measures including Automation
Hydrogenation	Total enclosed process system will be adopted. Temperature gauge or temperature indicator will be provided. Pressure gauge will be provided with red mark of S.W.P. Auto cut off temperature and pressure arrangement will be provided.

	<p>Safety valve will be provided on hydrogen gas line header.</p> <p>Safety valve will be provided on reactor.</p> <p>Rupture disc will be provided for additional safety.</p> <p>Vent line will be connected with scrubber in case of Ammonia used.</p> <p>Vent will be terminated above roof level in case of Hydrogen gas used.</p> <p>Flame arrestor will be provided to vent line.</p> <p>Nitrogen blanketing will be provided before the charging of hydrogen and after completion of reaction.</p> <p>The line and reactor will be flushed with Nitrogen gas properly to avoid fire or explosion in reactor.</p> <p>Chilling cooling arrangement and alternative arrangement for water will be provided to the reactor.</p> <p>Alternative power supply arrangement will be provided to autoclave.</p> <p>Blow down (drawing tank) will be connected to transfer complete reaction mass in case of any extreme emergency.</p> <p>Double Body earthing will be provided to autoclave.</p> <p>Flameproof fittings will be provided in the process area.</p> <p>PRV station with shut off valve, safety valve provision will be made for hydrogenation reaction safety.</p> <p>Before Hydrogen Gas charging in to reactor and after completion of reaction Nitrogen flushing will be done.</p> <p>Flame arrestor will be provided on vent line of reactor and it will be extended up to roof level.</p> <p>Open well ventilated and fragile roof will be provided to on reactor.</p> <p>Safe Catalyst charging method will be adopted.</p> <p>SOP will be prepared and operators will be trained for the same.</p> <p>Static earthing and electric earthing (Double) will be provided.</p> <p>Rector vent will extended outside the process area and flame arrestor will be provided on vent line.</p> <p>Jumpers for static earthing on pipeline flanges of flammable chemical will be provided.</p>	
Chlorination	<p>Level gauge will be provided.</p> <p>Scrubber will be provided</p> <p>Required PPEs will be provided to all employees</p> <p>Full body protection will be provided to operator.</p> <p>Caution note and emergency first aid will be displayed and train for the</p>	

	<p>same to all employees.</p> <p>Safety shower and eye wash will be provided in storage area and plant area. Dyke wall will be provided to storage area.</p>	
Bromination	<p>Preventative / Mitigation Measures: Storage & Handling: Protect against physical damage. Store in cool dry area, out of direct sunlight. Separate from combustible, organic or other readily oxidizable materials. Keep above 20F to prevent freezing but avoid heating above atmospheric temperatures as vapor pressure increase could rupture container.</p> <p>Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.</p> <p>Fire fighting: Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool. Following Personal Protective Equipment are to be made compulsory when handling Bromine approved chemical safety goggles at all times when handling Br₂.</p> <p>Use a full face shield over eyewear. Full body protection PVC suite Eyewash fountains should be located in areas where bromine is handled, used or stored. When in danger of contact with liquid bromine, wear an approved chemical resistant suit. Leather or other non-woven ANSI approved steel-toed shoes or Gum boot Protective rubber boots should be worn over shoes for extra protection. Have NIOSH approved respirators and self-contained breathing apparatus available. Gloves: 100% Nitrile rubber gloves or Neoprene gloves</p> <p>Safety Practices in the Work Area</p> <p>We will inform our all employees of the potential hazards of contact with bromine and train them in appropriate first-aid procedures. Bromine handling areas will be clearly marked and restricted to qualified, trained personnel only. Ventilation We will maintain bromine vapor concentration in the work area to less than 0.1 ppm with adequate exhaust hoods, ventilation systems and scrubbers. Analyze air for proper control.</p> <p>Transfer or repackage bromine only in a controlled, closed environment. Exhaust ventilating systems will be used in enclosed areas where bromine is handled.</p>	
Nitration	<p>The over-nitration and the unexpected decomposition can lead to very high Chemical reactivity hazards with dangerous consequences. Such reactions are exothermic leading to generation of heat that can accelerate the reaction causing a rapid temperature and pressure increase in a vessel. Reactant mass in reactor should be added such that surface-to-volume ratio is maintained and run away reaction is prevented.</p> <p>The Reactor will have Temperature control system cascaded with cooling water system consisting of Cooling tower, pumps and circulating system. In case of high temperature the steam will get cut off and cooling water will start circulating through the reactor coils. Alternately Chilled water system is also provided for extreme emergencies.</p> <p>The Reactor will have rupture disc and safety valves which will take care of excess pressure and the outlet of which is connected to the scrubbers.</p> <p>The Reactor will also have a separate high local vent with pressure</p>	

relief valve which is connected to a catch pot with water. The catch pot contents will be separated for recycle purpose. This will be additional safety, if 1 & 2 fail at the same time, which is unlikely.

In case of contact with eyes, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

In case of contact with skin, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Wash with a disinfectant soap and cover the contaminated skin with an antibacterial cream. Get medical attention.

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately. Evacuate the victim to a safe area as soon as possible.

Clean-up should be immediate when nitric acid spills in the laboratory, workshop, or on the industrial floor with lime.

H-3 Details of Fire Load Calculation

Total Plot Area:	2439.7
Area utilized for plant activity:	465.78
Area utilized for Hazardous Chemicals Storage:	30
Number of Floors:	G+2
Water requirement for firefighting in KLD:	7776.68
Water storage tank provided for firefighting in KLD:	200
Details of Hydrant Pumps:	Unit will provide Jockey Pump , Electrical driven Pump, Diesel Pump
Nearest Fire Station :	SEZ Fire station – 23 KM
Applicability of Off Site Emergency Plan:	N.A

Comments:

- The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 200 KL. SEAC found it as per the requirement.

H-4 Details of Fire NOC/Certificate:

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

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

Number of permanent Employee:	50
Number of Contractual person/Labour:	30
Area provided for OHC:	20 Sq.m
Number of First Aid Boxes:	5
Nearest General Hospital:	PHC Saykha
Name of Antidotes to be store in plant:	JayabenModi hospital – 5 KM Diazem – 1 mg/kg

(Intravenous), Epenephia, Efidrine, Folinic acid (Leucovorin), Methylene Blue, 0.4% Benzocaine (Novocaine) solution for eye, Dexona, Avil

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.

Details of Environmental Management Plan (EMP)

As below:

Sr. No	Unit	Details	Capital Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)
1	Waste Water	Installation of Primary, Secondary, Tertiary.	180	141
2	Air	Installation of APCM and its maintenance	20	10
3	Hazardous Management	HWSA, Disposal	20	80
4	Fire & Safety	Safety Equipment (PPE, fire extinguishers, First Aid Kit, Smoke detector, Ventilation, Fire Hydrant System, Fire Proximity Suit, water sprinkler system)	100	20
6	Green Belt Development	Development Green belt area and its maintenance	5	1
7	Occupational Health	First Aid Kit, Medicine, Beds, other facility	5	3
8	Noise Control	Acoustic Encloser	1	3
9	CER Funds	Unit will carried out CER Activities in Sadathala Village	15	4
Total			346	267

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.

13) DELIBERATION AND RECOMMENDATION:

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

Conditions with which Environment Clearance is recommended:**Construction Phase**

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

SPECIFIC CONDITIONS:

1. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after the 31st December 2021, considered as per the provisions in force at that time as mentioned in the Notification vide S.O. 1223 (E) dated 27/03/2020.
2. 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 subsequent amendments.
3. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
4. (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.

5. 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**].
6. 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.
7. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained
8. **Safety & Health:**
 - a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals
 - b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
 - c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
 - d) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
 - e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
 - f) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
 - g) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
 - h) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.

- i) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
- j) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
- k) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
- l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.
- m) Unit shall provide chlorine leakage control emergency kit and FRP hood with scrubber system for chlorine safety
- n) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for nitration vessel safety
- o) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for exothermic reaction vessel safety.

WATER

9. Total water requirement for the project shall not exceed 27 KLD. Unit shall reuse 2 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 25 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
10. The industrial effluent generation from the project shall not exceed 22 KLD.
11. Management of Industrial effluent shall be as under:
 - ✓ Total effluent generation from the manufacturing process shall be 17 KLD.
 - ✓ From that, the unit shall segregate 9 KLD high COD effluent and 8 KLD low COD effluent at a source.
 - ✓ High COD 9 KLD effluent shall be subjected to in-house stripper and subjected to CMEE of M/s. BEIL.
 - ✓ Low COD effluent (8 KLD) along with 1 KLD scrubber solution, 2 KLD washing effluent and 2 KLD domestic effluent shall be treated in to in-house ETP and send to CETP-Saykha.
 - ✓ Unit shall follow SOP for the treatment of waste water containing Cyanide stream.
 - ✓ Unit shall send waste water to Common MEE only after achieving inlet norms prescribed by GPCB ensuring content of effluent for COD so as not to get air borne during spray drying after APCM in order to achieve no adverse impacts on Environment and Human Health.
 - ✓ Treated waste water shall be sent to CETP only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
12. Domestic wastewater generation shall not exceed 02 KL/Day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
13. Unit shall provide ETP with adequate capacity.
14. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.
15. The unit shall provide metering facility at the inlet and outlet of ETP, Stripper and maintain records for the same.

16. Proper logbooks of ETP, Stripper, reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

17. Unit shall not exceed fuel consumption for Steam Boiler, TFH and D G Set as per the point no. E-2 as mentioned above.

18. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.

19. Unit shall provide adequate APCM with process gas generation sources as the point no. E-3 as mentioned above.

20. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.

- Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
- Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
- A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.

21. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.

22. For control of fugitive emission, VOCs, following steps shall be followed :

- ✓ Closed handling and charging system shall be provided for chemicals.
- ✓ Reflux condenser shall be provided over Reactors / Vessels.
- ✓ Pumps shall be provided with mechanical seals to prevent leakages.
- ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.

23. Solvent management shall be carried out as follows:

- ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
- ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
- ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
- ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.

- ✓ Solvents shall be stored in a separate space specified with all safety measures.
- ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
- ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.

24. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, HCl, Cl₂, Br₂, NH₃, HBr and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

25. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
26. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
27. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
28. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
29. 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.
30. 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

31. The PP shall develop green belt [806.25 Sq. m i.e. 33.04 % of the total plot area] as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

32. The project proponent shall carry out the entire activities [To Provide Solar panel system and solar street light at primary school of sadthala village and Primary health centre and panchayat office.] proposed under CER shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.

33. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

34. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.

35. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.

36. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.

37. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.

38. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.

39. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.

40. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com& (b) seacgujarat@gmail.com

06	SIA/GJ/IND3/244793/2021	M/s. Skova Pharmachems Plot no. 6110, Notified GIDC Industrial Estate, Ankleshwar- 393 002, Dist. Bharuch, State: Gujarat, India.	EC
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Category of the unit: **5 (f)**

Project status: **Expansion**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.1. Type of application:

EC-Expansion

1.2. Proposal no.	SIA/GJ/IND3/244793/2021
1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	14.12.2021
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. &Date :	Not applicable as project is categorized as B2
1.7. Technical expert / Environmental Consultant :	M/s. Siddhi Green Excellence Pvt. Ltd.
1.8. SEAC Meeting No. and Date:	381 st meeting dated 15.03.2022
1.9. Compliance of Existing EC & CCA	Earlier EC Details. EC Copy vide letter no.: SEIAA/GUJ/EC/5(f)/296/2021 dated 18/03/2021 Unit has obtained EC & CTE after EC. EC to CTE copy No.: CTE-48002 dated 22/07/221

2) This is a proposed expansion unit for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

Product Table

S r. N o.	Name of Products	CAS No. (Product)	Type/ Category of Product (API/ Intermediate)	Production Capacity (MT/Month)			In case of Intermediate stage of API			Said API is used for/End Use of said API		
				Existing as per EC	Proposed additional	Total after expansion	Stage i.e. n-1, n-2, etc.	Name of API in which Intermediate Used/ End use of said Intermediate	CAS no. (API)			
33.	4-Amino 1,2,4 Triazole	584-13-4	API Intermediate	100	-50	50	n-1	Fluconazole	86386-73-4	To treat mouth, throat, esophagus, urinary tract infections		
34.	Sodium / Potassium / Ammonium Thioglycolate	367-51-1 /34452-51-2 /5421-46-5	API				--	--	--	--	--	It is used in Inflammation
35.	Benzamide	55-	API				--	--	--	--	--	Benzamide

		21-0							derivatives possess different kinds of pharmacological activities like analgesic, anti-inflammatory, anticancer, cardiovascular, and other biological activities.
36.	Benzene Sulphonamide	98-10-2	API Intermediate			n-3	Celecoxib	1695 90-42-5	Celecoxib is a nonsteroidal anti-inflammatory drug (NSAID). Celecoxib is used to treat pain or inflammation caused by many conditions such as arthritis, ankylosing spondylitis, and menstrual pain
37.	Benzyl Benzoate	120-51-4	API			--	--	--	Benzyl Benzoate is used to treat lice & scabies infestations.
38.	2-Bromo-2-Nitro-1,3-Propanediol (Bronopol)	52-51-7	API			--	--	--	Bronopol is used as a microbicide or microbiostat
39.	Dimethyl Diselenide (DMDS)	7101-31-7	API Intermediate			n-2	L-Seleno Methionine	3211 -76-5	Nutraceuticals
40.	2-	79-	API			n-2	Calcium	2245	To treat

	Hydroxyethanoic acid (50% Solution)	14-1	Intermediate					Orotate	4-86-0	conditions caused by low calcium levels such as osteoporosis, osteomalacia /rickets, decreased activity of the hypoparathyroidism
41.	1-[2-(2-Hydroxy Ethoxy Ethyl)] Piperazine (HEEP)	13349-82-1	API Intermediate				n-2	Quetiapine	111974-69-7	Quetiapine tablets may be used as part of a treatment program to treat bipolar disorder and schizophrenia in children and teenagers. Quetiapine is in a class of medications called atypical antipsychotics. It works by changing the activity of certain natural substances in the brain.
42.	Isopropyl Chloro Acetate	105-48-6	API Intermediate				n-4	Phenylephrine hydrochloride	61-76-7	It is used for temporary relief of stuffy nose, sinus, and ear symptoms caused by the common cold, flu, allergies, or other

									breathing illnesses
43.	Methyl Benzoate	93-58-3	API Intermediate				n-4	Rizatriptan	1452 02-66-0 Rizatriptan is used to treat the symptoms of migraine headaches
44.	n-Butyl Bromide	109-65-9	API Intermediate				n-4	Oxyphenbutazone	50-33-9 Used to relieve pain, inflammation, and fever
45.	n-Propyl Bromide	106-94-5	API Intermediate				n-4	Sodium Valproate	1069-66-5 It is used to treat epilepsy and bipolar disorder.
46.	Thio Glycolic Acid (50%) Solution	68-11-1	API Intermediate				n-4	Budesonide	513 33-22-3 It is used to treat Crohn's disease
47.	Doxazosin base	74191-85-8	API Intermediate				n-1	Doxazosin Mesylate	7788 3-43-3 High blood pressure (hypertension)
48.	Alfuzosin base	81403-80-7	API Intermediate				n-1	Alfuzosin HCl	8140 3-68-1 Enlarged prostate (benign prostatic hyperplasia-BPH).
49.	Tamsulosin base	10613 3-20-4	API Intermediate				n-1	Tamsulosin HCl	1064 63-17-6 Enlarged prostate (benign prostatic hyperplasia-BPH).
50.	Amlodipine Free Base	88150-42-9	API Intermediate	0	70	70	n-1	Amlodipine Besylate	1114 70-99-6 Hypertension and angina pectoris
51.	Tetrazole compound	288-94-8	API Intermediate				n-1	Losartan Potassium	1247 50-99-8 Treat high blood pressure (hypertension)
52.	2,4,Disulphonamide – 5, chloroaniline (DSA)	4205-90-7	API Intermediate				n-1	Hydrochlorothiazide	58-93-5 Treat edema (fluid retention; excess fluid held in body tissues)
53.	Benazapril free base	86541-75-5	API Intermediate				n-1	Benazepril HCl	8654 1- Treat high blood

			diate						74-4	pressure (hypertension)
54.	Spiro base	765-46-8	API Intermediate				n-1	Irbesartan	1384 02-11-6	Treat high blood pressure (hypertension)
55.	Eprosartan	13304 0-01-4	API Intermediate				n-1	Eprosartan Mesylate	1441 43-96-4	Treat high blood pressure (hypertension)
56.	Benzimidazole methyl biphenyl-2-carboxylate (Telmisartan)	11477 2-38-2	API Intermediate				n-1	Telmisartan	1447 01-48-4	Treat high blood pressure (hypertension)
57.	N-Substituted cynobiphenyl methyl ester	48257 7-59-3	API Intermediate				n-1	Valsartan	1378 62-53-4	High blood pressure and heart failure
58.	Bisoprolol Epoxide	66722 -44-9	API Intermediate				n-1	Bisoprolol Hemifumarate	1043 44-23-2	Treat high blood pressure (hypertension)
59.	Lercandipine Base	10042 7-26-7	API Intermediate				n-1	Lercanidipine HCl	1328 66-11-6	Treat hypertension, chronic stable angina pectoris, and Prinzmetal's variant angina
60.	Nisoldipine Base	63675 -72-9	API Intermediate				n-1	Nisoldipine HCl	5452 7-84-3	Treat high blood pressure (hypertension)
61.	Dihydroartemisinin	71939 -50-9	API Intermediate				n-1	Artemether	7196 3-77-4	Antimalarial, drug used to treat malaria.
62.	2D-N-Butyl-1-(2,7-dichloro-9H-Fluorenyl) Ethanol	69759 -61-1	API Intermediate				n-1	Lumefantrine	8218 6-77-4	Antimalarial, agent used to treat acute uncomplicated malaria.
63.	R & D products*	--	API / API	0.5	0	0.5	--	--	--	--

			Interme diate						
	Total			100. 5	20	120.5			

***Note:** In existing granted EC, 0.5 MT/Month R & D products were granted only for Bromination, After expansion unit shall carry out R & D for all type of API & API intermediates. Existing production capacity will be decreased to 50 MTM and production capacity of new products will be 70 MTM. Hence, Overall addition of production capacity will be 20 MTM.

- 3) The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27thMarch, 2020.
- 4) The proposal was considered in the SEAC video conference meeting dated 15.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) Earlier PP obtained EC. EC Copy vide letter no.: SEIAA/GUJ/EC/5(f)/296/2021 dated 18/03/2021. Unit has obtained EC & CTE after EC. EC to CTE copy No.: CTE-48002 dated 22/07/221. PP submitted that there is no legal court case and public complaint against unit. Compliance found satisfactory.
- 8) Committee asked to submit the following:
 - ✓ Submit revised site plan showing separate stair case.
 - ✓ Submit revised Air Emission details showing increased stack height and Bag filter to be added in Briquette based boiler.
 - ✓ Submit NOC/Membership certificate of CMEE for the confirmation of Effluent acceptance.
 - ✓ Submit EMP & CER budget including total cost (As per existing EC + Proposed EC).
 - ✓ Ensure compatibility of Hazardous chemicals during storage in warehouse. Also submit Risk assessment report of critical chemicals.
- 9) Later on PP submitted following details through email
 - ✓ Revised site plan showing separate stair case has been submitted.
 - ✓ Revised Air Emission details showing increased stack height and Bag filter to be added in Briquette based boiler has been submitted.
 - ✓ NOC of M/s. BEIL, Dahej for CMEE has been submitted
 - ✓ EMP & CER budget including total cost has been submitted
 - ✓ We have classified hazardous chemicals as per their compatibility properties and shall provide segregated storage facility in warehouse as per classification. Unit is committed to ensure safe storage and handling of hazardous chemicals as per MSDS. Classification of Hazardous chemicals as per compatibility and proposed segregation in warehouse has been submitted. Report of Consequence analysis of critical chemicals also submitted.
- 10) Committee found presentation and submission of project proponent satisfactory.
- 11) 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

12) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 1223(E) dated 27.03.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.

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

Sr. no.	Particulars	Details		
A-1	Project cost			
Total cost of Proposed Project (Rs. in Crores):				
<table border="1"> <tr> <td>Total Project</td> </tr> <tr> <td>Rs. 8.2908 Crore</td> </tr> </table>			Total Project	Rs. 8.2908 Crore
Total Project				
Rs. 8.2908 Crore				

Break-up of proposed project Cost:

Group	Particulars	Nos.	Cost (Rs. in lakhs)
Land	--	Existing	
Process Plant	Reactors (4KL)	5	70
	Condenser (16M2)	10	35
	Hydrogenated reactor	NA	
	Centrifuge (CF) 36"	2	22
	Dryers (96trays)	2	58
	Tanks (15KL)	4	2
	Process pumps (3HP)	10	3.5
	Ejectors (1Torr)	1	6
	Valve and Instruments (1.5")	120	6.5
	Columns (12" dia)	1	8
Utilities	Boiler (800kg)	1	13
	Brine (25TR)	1	10
	D.G Set (50KVA)	1	5
	Chilling plant	NA	
	Nitrogen plant	NA	
	Compressors (20CFM)	1	1
	Cooling tower (400TR)	2	20
Storage Tanks	Water Storage Tank (15KL)	2	4
	Raw material storage tank / Vertical Cylindrical (15KL)	4	2
Environment	Effluent treatment plant (ETP)	1	16
	Sewage treatment plant (STP)	NA	
	Green Belt Development	1	3
	Air Pollution Control Devices (APCD)	Scrubber	7
	Hazardous storage facilities	1	3

Occupational Health & safety	Fire Hydrant system, Sprinklers, Extinguishers	1	7				
	PPEs	1	1				
	Automation systems-PLC based	NA					
	Occupational Health center & other FMO charges	NA					
Civil	Plant building civil and structural work	1	60				
	Preoperative expenses	1	5				
	Piping Installation	1	08				
	Insulation & Painting	1	08				
	Safety Items	1	5				
	Electrical installation	1	9				
	Miscexpenses:- Lab, office, ware house, furniture & fixtures, office & lab requirement	1	10				
	Total		408				
	Contingencies		42				
	Grand Total		450				
-							
A-2	Details of CER -						
<p>PP shall carry out CER activities as below:</p> <ul style="list-style-type: none"> ✓ Provision of Computers, Printers, Books in library, Projector, Cupboard, RO plant with complete structure & Benches for primary schools ✓ Provision of Dustbins at various street, mosquito fogging machines in village. ✓ Provision of 30 Nos. Solar street light (Solar pole, battery, panel, LED light complete) <ul style="list-style-type: none"> ✓ Solar Electrification through installation of Roof top system of 6 KW 							
B	Land / Plot ownership details:						
<p>Plot No. 6110, Notified GIDC Industrial Estate, Ankleshwar-393 002, Dist. Bharuch, State-Gujarat, India was allotted to M/s. Skova Pharmachems In 2005. (Linking between Land ownership and PP is required.)</p>							
B-1	Plot area						
<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%;">Total Plot area</td> </tr> <tr> <td></td> <td>3538 Sq. m.</td> </tr> </table>					Total Plot area		3538 Sq. m.
	Total Plot area						
	3538 Sq. m.						
-							
B-2	Area adequacy						
<p>Existing built up area: 355 sq. m Proposed built up area: 1415 sq. m.</p>							
Area Adequacy table:							
Storage	Period of storage	Maximum storage required (MT)	Type of storage	Required Space sq. m	Allocated space sq. m		
Raw Material Store	3 days	80.18	~100 Nos. of Drums (200 L each) ~800 Nos. of Carboys (50 L each- Stacked in 3 layers)	80.18	120		

			~400 Nos. of Bags (50 kg each-Stacked in 3 layers) 10 Nos. Of Bromine Crates (60 Glass bottles)		
Finished Good store	10 days	40	~800 Nos. of Bags (50 kg each-Stacked in 3 layers)	40	190
Solvent Storage	3 days	50	~250 Nos. of Drums (200 L each) Recovered and fresh solvent	50	60
HW Storage	30 days	100	Drums and bags in stacking arrangement	33	45
Utility area	--	--	--	50	60

➤ 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

	Total (Sq. meter)
Area in Sq. meter	857 inside + 1120 outside in GIDC
% of total area	24% Inside + 32% Outside

Comments:

The condition shall be given that -

- The PP shall develop green belt [857 m² (24%) inside plant premises + 1120 m² (32%) at Common Plot in Ankleshwar GIDC= Total: 1977 Sq. m.) i.e. 56 % 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.

C Employment

Employment generation

	Total
	22

D WATER

D-1 Source of Water Supply

➤ GIDC supply

Comments:

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

D-2 Water consumption (KLD)

Category	As per Existing EC KLD (1)	After Decreasing production capacity KLD (2)	EC applied for additional quantity KLD (3)	Total after EC Expansion KLD (2+3)	Remarks
(A) Domestic	1.00	1.00	1.00	2.00	--
(B) Gardening	3.42	3.42	0.00	3.42	Recycled Quantity: 1.6 KLD Treated Water from STP shall be used for greenbelt development and maintenance purpose. Hence, the fresh water requirement for greenbelt development & maintenance will be reduced from 3.42 to 1.82 KLD.
(C) Industrial					
Process	3.35	1.68	61.32	63.00	Total fresh water requirement for Production is 63 KLD
Washing	4.00	2.00	3.00	5.00	Recycled Quantity: 5 KLD. (Utility blow down water (Boiler: 2 KLD + Cooling tower: 3 KLD = 5 KLD) shall be passed through cartridge filter and shall be used for washing purpose. So fresh water requirement for Washing shall be NIL.)
Boiler	23.00	11.5	30.7	42.20	Recycled quantity: 25 KLD Note: At Start up stage (First Batch) the Fresh Water Consumption for boiler is 42.2 KLD & second batch onwards Fresh water consumption is reduced to 17.2 KLD from 42.2 KLD due to recycling condensate.
Cooling	4.00	2.00	30.00	32.00	--

Others(APCM)	0.89	0.45	1.25	1.70	Total fresh water requirement for APCM is 1.7 KLD.
Industrial Total	35.24	17.63	126.27	143.90	Total Fresh water requirement : 113.9 KLD, Recycled quantity: 30 KLD
Grand Total (A+B+C)	39.66	22.05	127.27	149.32	Total Fresh water requirement : 117.72 KLD, Recycled quantity: 31.6 KLD

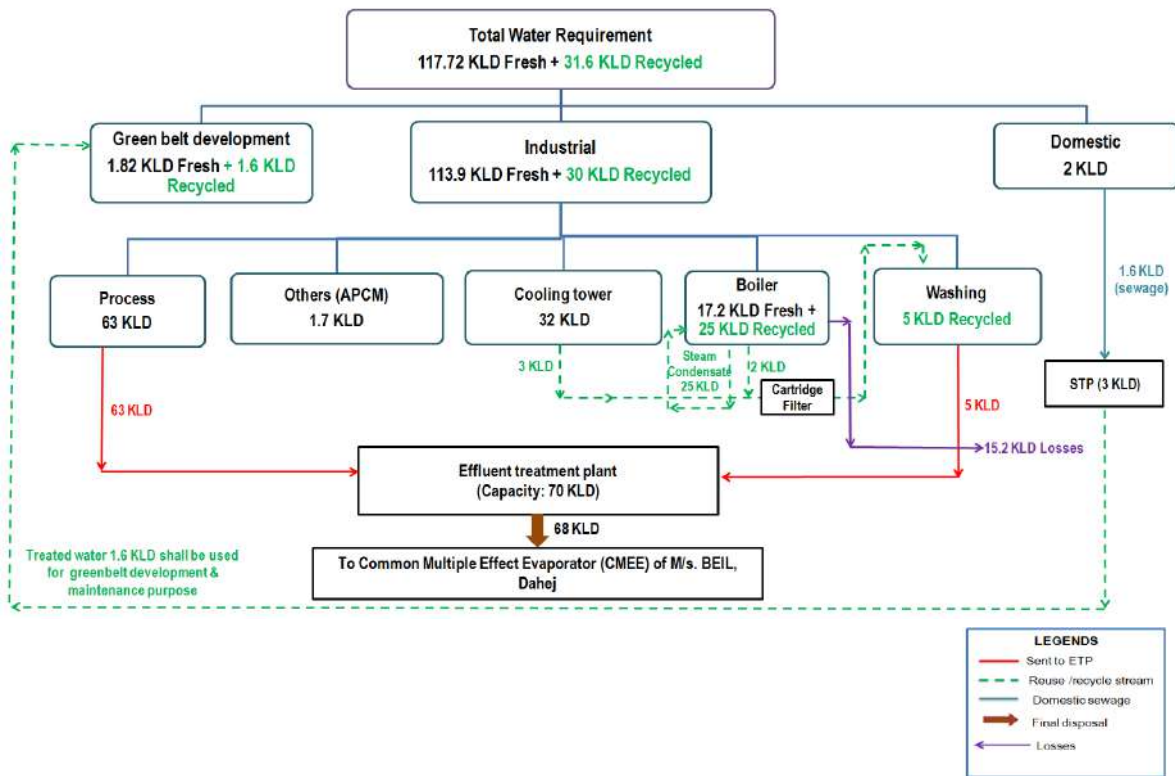
Comments:

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

D-3 Waste water generation (KLD)

Category	As per Existing EC KLD (1)	After Decreasing production capacity KLD (2)	EC applied for additional quantity KLD (3)	Total after EC Expansion KLD (2+3)	Remarks
(A) Domestic	0.80	0.80	0.80	1.60	To STP
(B) Industrial					
Process	0.00	0.00	63.00	63.00	To ETP
Washing	4.00	2.00	3.00	5.00	To ETP
Boiler	1.15	0.58	1.42	2.00	Boiler blow down of 2 KLD shall be passed through cartridge filter and shall be used for washing purpose and then shall be given primary treatment in ETP.
Cooling	0.25	0.13	2.87	3.00	Cooling tower blow down of 3 KLD shall be passed through cartridge filter and shall be used for washing purpose and then shall be given primary treatment in ETP.
Others(APCM)	0.00	0.00	0.00	0.00	--
Total Industrial waste water	5.40	2.71	70.29	73.00	Recycled Quantity: 5 KLD. Discharge quantity: 68 KLD. After expansion, 68 KL/day effluent shall be treated in ETP consist of primary treatment and treated effluent

					shall be sent to CMEE (Common Multi-Effect Evaporator) of M/s. BEIL, Dahej for total evaporation.
Total (A+B)	6.20	3.51	71.09	74.60	--
<p>Comments:</p> <ul style="list-style-type: none"> ➤ 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)				
<p>1.6 KLD Domestic Waste Water will be treated in STP & treated wastewater will be reused in gardening purpose within premises.</p> <p>Comments:</p> <ul style="list-style-type: none"> ➤ Domestic wastewater generation shall not exceed 1.6 KL/day for proposed expansion project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB. ➤ Unit shall provide STP with adequate capacity. 					
D-5a	Break-up of waste water disposal & facility (For Industrial)				
	Sr. no.	Quantity KLD	Facility		
	1	68 KLD	After expansion, 68 KL/day effluent shall be treated in ETP consist of primary treatment and treated effluent shall be sent to CMEE (Common Multi-Effect Evaporator) of M/s. BEIL, Dahej for total evaporation.		
	Total	68 KLD	After expansion, 68 KL/day effluent shall be treated in ETP consist of primary treatment and treated effluent shall be sent to CMEE (Common Multi-Effect Evaporator) of M/s. BEIL, Dahej for total evaporation.		
	Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)				
	NOC of M/s:BEIL-Ankleshwar vide no. Ref. BEIL/ANK/2022 dated: 16.03.2022				
D-5b	Simplified water balance diagram				



D-5c

Summary

Summary of water requirement	Existing KLD (1)	After Decreasing production capacity KLD (2)	Proposed (Additional) KLD (3)	Total after Expansion KLD (2+3)	Remarks
Total water requirement for the project (A)	39.66	22.05	127.27	149.32	--
Quantity to be recycled (B)	10.50	10.6	21	31.6	--
Total fresh water requirement (C)	29.16	11.45	106.27	117.72	--
	Ensure Total water requirement = Fresh water + Recycled water i.e. A = B + C				

Comments:

- Total water requirement for the project shall not exceed 149.32 KLD. Unit shall reuse 31.6 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 117.72 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
- Management of Industrial effluent shall be as under:
 - ✓ The sewage is presently disposed through soak pit via septic tank. After expansion, sewage shall

be treated in STP (5 KLD) & treated water shall be used for Greenbelt development & maintenance purpose.

- ✓ After expansion, 68 KL/day effluent shall be treated in ETP consist of primary treatment and treated effluent shall be sent to CMEE (Common Multi-Effect Evaporator) of M/s. BEIL, Dahej for total evaporation.

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

24. 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 :75 KVA

E-2 Flue gas emission details

-Existing

Stack 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.	Steam Boiler (1 No.) (Capacity- 1 TPH)	20	Natural Gas OR	350 m ³ /day OR	SPM SO ₂ NO _x	Adequate stack height provided OR Multi Cyclone separator + water scrubber
			Briquette s of Bio coal	3.5 MT/day		
2.	*Spray Dryer (Capacity- 0.5 KL/h)	18	Natural Gas OR	200 m ³ /day OR	HC VOC	Cyclone separator followed by scrubber
			Briquette s of Bio coal	2 MT/Day		
3.	DG Set (Standby) Capacity: 125 KVA	9	HSD	55 L/h	SPM SO ₂ NO _x	Adequate stack height will be provided

*Spray dryer (Capacity- 0.5 KL/h) shall be discontinued after proposed expansion.

- Total after Expansion

Stack 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. (Existing)	Steam Boiler (1 No.) (Capacity- 1 TPH) - Existing	30	Natural Gas OR	175 m ³ /day OR	PM SO ₂ NO _x	Adequate stack height provided OR Multi Cyclone separator + Bag filter + water scrubber
			Briquettes of Bio coal	1.75 MT/day		
2. (New)	Steam Boiler (1 No.) (Capacity- 800 Kg/hr) - New	20	Natural Gas	300 Nm ³ /day	PM SO ₂ NO _x	Adequate stack height shall be provided
	Thermic Fluid Heater (1 no.) (Capacity- 1 lakh Kcal/hr) -		Natural Gas	330 Nm ³ /day		

	New					
3. (Existing)	DG Set (Standby) Capacity: 125 KVA (1 No.) - Existing	11	Diesel	55 L/h	PM SO ₂ NO _x	Adequate stack height shall be provided
	DG Set (Standby) Capacity: 50 KVA (1 No.) - New		Diesel	25 L/h		
E-3		Process gas				
- Total After Expansion						
Stack no.	Specific Source of emission (Name of the Product & Process)	Type of emission	Stack/ Vent Height (meter)	Air Pollution Control Measures (APCM)		
1. (Existing)	Process vent -1 (Product no. 6, 12, 13) - Bromination	Br ₂ /HBr	18	Two Stage Alkali Scrubber		
2. (New)	Reaction Vessels - N- Substuted cynobiphenyl methyl ester & 2D-N-Butyl-I-(2,7, Di chloro) 9H Flourenyl Ethanol	HCl, SO ₂	20	Two stage water & Alkali Scrubber		
-						
E-4		Fugitive emission details with its mitigation measures.				
Sr. No.	Probable sources	Proposed Control measures				
1.	Pump glands and seals	All pumps handling HAP chemicals with low V.Ps & pressurized gas shall have mechanical seals which are presently best for preventing emissions.				
2.	During reactions & Solvent recovery systems	All reactors shall be closed and provided with condenser with chilled brine water and cooling water circulation for maximum vapor recovery Solvent recovery from distillation of more than 95% is achieved Temperature and pressure conditions shall be stringently controlled as per the process requirement and optimized with low temperature and vacuum conditions wherever feasible.				
3.	Vents of storage tanks – during withdrawal to day tanks	Liquid raw materials will be charged by pumping & closed loops. Dedicated measuring tanks for each reactor. Suitable stoichiometric calculations will be done and followed to regulate the quantity of reactants to be charged to reaction vessels in order to avoid use of excess chemicals, which in turn will minimize organic load in the effluent.				
4.	Pressure Relief Valve Emissions from pipelines	For highly pressurized lines, pressure equalization shall be followed with return lines so that the pipelines as well as connected equipment do not get pressurized unduly.				
5.	Release from Sampling Lines	Shall be carried out using a closed loop sampling system.				

6.	Emissions from Bulk Storage Tanks during storage, loading and unloading	PSVs, Rupture discs to be provided wherever applicable. Tank Pressure equalization shall be applied wherever required Closed Transfer systems
7.	Valves, Flanges, plugs and instrument connections	Welded pipes to be used wherever feasible Suitable gasket material to be used Suitable gland packing to be used in valves Periodic inspection and maintenance of pipes and pipe fittings
8.	Chemical vapors during filtration and drying process	Covered systems to be adopted, workers shall be provided PPE, dust extraction systems, local exhausts and roof top ventilators, wherever required
9.	Drum filling machinery	Covered transfers systems shall be adopted, workers shall be provided PPEs, minimum manual operations, local exhausts and roof top ventilators
10.	Warehouse storing drums and bags	Spillages shall be strictly prevented by providing drip pans, proper handling equipment, Spill control procedures and equipment shall be provided

Comments for E2, E3 & E4:

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

F Solvent management, VOC emissions etc.

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

Solvent Recovery Table

Product Sr. No.	Product	Solvent	Solvent subject to distillation per batch (kg)	Recovered Solvent	
				per batch (kg)	% Recovery
15	Doxazosin base	Chloroform	1026	984	96
		Acetone	869	861	99
		Toluene	427	410	96
		n-Butanol	641	615	96
16	Alfuzosin base	Methylene Dichloride	2200	2090	95
		Methanol	2480	2356	95
17	Tamsulosin base	Methanol	1740	1650	95
		Ethyl Acetate	2000	1920	96
		Hexane	520	495	95
		Ethanol	1040	1020	98
18	Amlodipine Free Base	Toluene	1176	1129	96
		Ethyl Acetate	409	388	95
		Cyclohexane	1412	1340	95

		Acetic acid	1908	1813	95
		Denatured Spirit with Toluene	72	70	97
19	Tetrazole compound	Mono Chloro benzene	285	270	95
		Toluene	792	753	95
		Methanol	428	406	95
20	2,4,Disulphonamide – 5, chloroaniline (DSA)	Methanol	237	225	95
21	Benazapril free base	Toluene	660	627	95
22	Spiro base	Methylene Dichloride	1053	1000	95
		Dimethyl formamide	321	305	95
		Isopropyl alcohol	402	382	95
23	Eprosartan	Ethanol	1425	1354	95
		Dimethyl Formamide	400	380	95
		Hexane	625	593	95
24	Benzimidazol methyl biphenyl-2-carboxylate(Telmi-I)	Dimethyl Formamide	1240	1178	95
		Acetone	380	361	95
25	N-Substuted cynobiphenyl methyl ester	Methanol	412	391	95
		Toluene	540	515	95
		Monochloro Benzene	540	515	95
26	Bisoprolol Epoxide	Toluene	723	686	95
		Isopropoxy Ethanol	1212	1151	95
		Epichlorohydrin (EPH)	336.8	320	95
27	Lercandipine Base	Monochloro Benzene	568	545	96
		Isopropyl alcohol	284	270	95
		Toluene	1136	1080	95
28	Nisoldipine Base	Isopropyl alcohol	5443.00	5170.00	95
		Methanol	2675.00	2565.00	96
29	Dihydroartemisin	Methanol	1916.00	1824.00	95
30	2D-N-Butyl-I-(2,7, Dichloro) 9H Flourenyl	Dimethyl Formamide	1100.00	1050.00	95
		Methanol	2235.00	2125.00	95
		Ethylene	630.00	600.00	95

	Ethanol	Dichloride					
		Ethyl Acetate	350.00	333.00	95		
F-2	VOC emission sources and its mitigation measures						
Handling of chemicals will be in closed system. Primary and secondary condensers are proposed.							
F-3	LDAR proposed:						
<ul style="list-style-type: none"> ➤ Volatile organic solvent Chloroform, Acetone, Toluene, n-Butanol, Methylene Dichloride, Methanol, Ethyl Acetate, Hexane, Ethanol, Cyclohexane, Mono Chloro benzene, Acetic acid, Denatured Spirit with Toluene, Dimethyl formamide, Iso Propyl Alcohol, Isopropoxy Ethanol, Epichlorohydrin (EPH), Ethylene Dichloride shall be covered in LDAR program. ➤ Solvent recovery shall be carried out by simple distillation directly from reactor vessels provided with distillation assembly or by fractional distillation in dedicated distillation units depending on the solvent composition. ➤ Recovered solvents are reused in process without any storage at the premises ➤ Distillation assembly on reactors shall comprise of packed column, primary condensers with cooling water circulation and secondary condensers with chilled water/ chilled brine circulation to obtain minimum 95% recovery ➤ Vent from secondary condenser shall be connected to Activated Carbon tower to trap solvent traces if any. Efficiency of tower shall be maintained by maintaining Iodine value of carbon. ➤ All unit processes, unit operations, related temperature and pressure conditions shall be stringently controlled through interlocks and closed systems. ➤ Liquid raw materials shall be charged by pumping & closed loops. ➤ Use of mechanical seals in pumps, agitators and compressors where VOC shall be handled. ➤ Pipelines connected with reactors and scrubbers will be installed with minimum number of flanges, joints and valves. 							
Regular internal & external VOC monitoring would be carried out.							
Comments:							
<ul style="list-style-type: none"> ➤ Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement. ➤ Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs). 							
G	Hazardous waste						
G-1	Hazardous waste management matrix						
Sr . no.	Type/ Name of Hazardou s waste	Specific Source of generati on (Name of the Activity, Product etc.)	Cate gory and Sch edul e as per HW Rule s	Quantity (MT/Annum)		Management of HW	
				As per Existi ng EC (1)	After Discon tinuati on of Existin g spray dryer & decrea sing produc tion capacit y (2)	EC applied for additio nal quantit y (3)	Total after EC Expa nsion (2+3)

14.	Used OR Spent oil	D. G. Set & machinery	Cat.: 5.1 Sch. : I	0.1	0.1	0.2	0.3	Maximum quantity will be reuse in plant & machinery as lubricant and balance quantity will be disposed by selling to authorize re-refiners / recycler approved by GPCB/CPCB
15.	Empty Barrels/ Containers / Liners contaminated with hazardous chemicals / wastes	Raw materials & finished products	Cat.: 20.3 Sch. : I	20	18	30	48	Collection, Storage, Decontamination, Transportation and Disposal by reuse after in-house decontamination or send it to authorized decontamination facility / recycler or send back to supplier.
16.	Chemical sludge from waste water treatment	From ETP	Cat.: 35.3 Sch. : I	9.66	4.83	191.17	196	Collection, Storage, Transportation & Disposal to common TSDF facility
17.	Process residue	From production of product no. 7, 9, 10, 11, 12, 13, 14, 19, 29, 31	Cat.: 28.1 Sch. : I	22.68	11.34	92.66	104	Collection, Storage, Transportation and Disposal by incineration in common incinerator OR co-processing at Cement Industry OR Co-processing facility
18.	Distillation Residue	From production of product no. 6, 12, 13, 16, 23, 25, 26, 27, 28	Cat.: 20.3 Sch. : I	21.16	10.58	483.42	494	Collection, Storage, Transportation and Disposal by incineration in common incinerator OR co-processing at Cement Industry OR Co-processing facility
19.	Spent Carbon	From production of	Cat.: 28.3 Sch.	0	0	328	328	Collection, Storage, Transportation and

		product no. 26 & 28	: I					Disposal by incineration in common incinerator OR co-processing at Cement Industry OR Co-processing facility
20.	Spent Solvent	From production of product no. 15 to 30	Cat.: 28.6 Sch. : I	0	0	5000	5000	Recovered solvent shall be Reused in production through distillation columns having Primary and secondary condensers inbuilt with reactors
21.	Spray dryer salt	Spray dryer	Cat.: 35.3 Sch. : I	28.74	0	0	0	Spray dryer has been discontinued. Collection, Storage, Transportation & Disposal to common TSD facility
22.	Off specification products	Manufacturing process – Batch failure & R&D	Cat.: 28.4 Sch. : I	2	1	1	2	Collection, Storage, Transportation and Disposal by incineration in common incinerator OR co-processing at Cement Industry OR Co-processing facility
23.	Sodium Bromide (25-40%)	Scrubber (Product no. 6, 12, 13)	Cat.: B10 Sch. : II	1631.7	815.85	0	815.85	Collection, Storage, Transportation & Disposal by sell out to authorized users who are having authorization with valid CTO and permission under Rule 9
24.	Sodium Chloride (20-30%)	Process (Product no. 5, 8, 9, 16)	Cat.: B10 Sch. : II	770.85	385.42	0	385.42	Collection, Storage, Transportation & Disposal by sell out to authorized users who are having

								authorization with valid CTO and permission under Rule 9
25.	Ammonium Chloride (28%)	Process (Product no. 3, 4)	Cat.: B10 Sch. : II	532.88	266.44	0	266.44	Collection, Storage, Transportation & Disposal by sell out to authorized users who are having authorization with valid CTO and permission under Rule 9
26.	Potassium Sulphate	Process (Product no. 5)	Cat.: B10 Sch. : II	1129.02	564.51	0	564.51	Collection, Storage, Transportation & Disposal by sell out to authorized users who are having authorization with valid CTO and permission under Rule 9
27.	Dil. Sulphuric Acid (20-40%)	Process (Product no. 13)	Cat.: B15 Sch. : II	272.85	136.42	0	136.42	Maximum quantity 54.6 MT/Year will be reused in product no. 11 and remaining quantity 81.82 MT/Year will be disposed by selling to authorized end user having Rule - 9 permission after getting prior permission from GPCB.
28.	30% HCl Solution	Scrubber (Product no. 25 & 30)	Cat.: B15 Sch. : II	0	0	594	594	Collection, Storage, Transportation & Disposal by use in ETP for neutralization OR sell out to authorized users who are having authorization with valid CTO and permission under Rule 9
29.	Sodium	Scrubber	Cat.:	0	0	306	306	Collection,

	sulfite solution	(Product no. 25)	B10 Sch. : II					Storage, Transportation & Disposal by sell out to authorized users who are having authorization with valid CTO and permission under Rule 9
<p>Comments:</p> <ul style="list-style-type: none"> ➤ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement. ➤ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB. 								
G-2	Non- Hazardous waste management matrix							
	➤ NOT APPLICABLE							
H	SAFETY details							
H-1	Details regarding storage of Hazardous chemicals							
<p>-</p> <p>-</p> <p><u>Safety details....</u></p> <ul style="list-style-type: none"> ➤ Applicability of PESO: No. <p><u>Comments:</u></p> <ul style="list-style-type: none"> ➤ 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:							
Exothermic Reaction - Not Applicable								
Type of Process		Safety measures including Automation						
Hydrogenation process		<ul style="list-style-type: none"> • Hydrogen cylinder should be placed at distance (min 15 m) from reactor area. • Safety relief valve to be provided. Effective earthing to be provided between the cylinders and vehicle to reduce risk of ignition from a leak. • Clamping device to minimize relative movement of the cylinders without causing unfavourable stresses. • Metal to metal contact to be avoided between the cylinders and cylinder and frame structure. 						

	<ul style="list-style-type: none"> • Manifolding should minimize the possibility of vibrations. • PLC automation to be implemented. • Interlocking / Cut-off system shall be provided • Special training shall be provided for the operators for operating hydrogenation. • Hydrogenator shall be never left unattended when in operation. • Line jumpers and proper earthing shall be provided for static discharge. • Hydrogen detectors shall be available at Hydrogenation plant.
Chlorination process	<ul style="list-style-type: none"> • Chlorine tonner shed – Chlorine tonners shall be stored separately and isolated area in compliance with requirement of Gas Cylinder Rules, 2016. • Shall be closed shed with chlorine kit, FRP hood with scrubber system, chlorine detectors and fully equipped with tonner resting and movement facilities. • Each tonner shall be examined, while receiving. • Personnel Protective Equipment to be issued to workers & operatives. • Displayment of notice for filled and empty tonners. • Water shower with eye-washer to be provided. • Chlorine tonner shed shall be provided with all necessary gas containment and absorption equipment and facility to prevent and control chlorine tonner leakage scenario consisting of: Chlorine kit, neutralizing media, chlorine absorption hood and scrubber. • Chlorine gas monitors shall be installed which should be maintained and inspected regularly for effectiveness and set alarm level. • Chlorine gas is heavier than air so gas monitors should be mounted approximately two feet from the floor for quick and accurate detection. • Training to be given to selected workers for using the chlorine emergency kit, SCBA and scrubber hood. • Regular training and mock drills for using FRP hood and chlorine kit and emergency action for tonner leak should be conducted.

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

Total Plot Area:	3538 sq. m.
Area utilized for plant activity:	~1799 sq. m.
Area utilized for Hazardous Chemicals Storage:	
Number of Floors:	G.F.+2
Water requirement for firefighting in KLD:	~ 4.5 KL
Water storage tank provided for firefighting in KLD:	200 KL dedicated u/g fire water tank shall be provided after proposed expansion.
Details of Hydrant Pumps:	Jockey pump: 10.8 m ³ /h
Nearest Fire Station :	Disaster Prevention & Management Centre, Ankleshwar which is fully equipped for handling of industrial emergencies & disasters such as fire & rescue, chemical spills, toxic release / gas leaks, road & rail accidents, natural calamities like flood, cyclone , earthquake

		etc., rural fires, etc.			
	Applicability of Off Site Emergency Plan:	Not Applicable			
Comments:					
➤ The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 200 KL. SEAC found it as per the requirement.					
H-4	Details of Fire NOC/Certificate:				
Shall be developed as per requirement.					
H-5	Details of Occupational Health Centre (OHC):				
-					
	Number of permanent Employee:	Existing: 8 Nos. Proposed additional: NIL			
	Number of Contractual person/Labour:	Existing: 14 nos. Proposed additional: NIL			
	Area provided for OHC:	15 sq. m.			
	Number of First Aid Boxes:	2 Nos.			
	Nearest General Hospital:	Shrimati Jayaben Modi General Hospital, GIDC Ankleshwar			
	Name of Antidotes to be store in plant:	Milk of magnesia, Oxygen, Vinegar, Avil, Eye Drops, Antisnake venom, Tetanus Vaccine, Charcoal (Tab), Baking Soda, Soframmicene			
-					
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.					
Details of Environmental Management Plan (EMP)			As below:		
Sr. No	Particulars	Capital Cost (Existing as per EC + Proposed additional = Total)	Basis of cost estimation	Additional Recurring Cost Per Annum (Existing as per EC + Proposed additional = Total)	Basis of cost estimation
		(Rs. In lakh)		[Rs. In lakh]	
1	Air Pollution Control	(12.2+7=19.2)	Installation of Scrubber systems for process gas emission control, and construction of stacks with platform and sampling arrangements, local exhaust and ventilation systems	(4.25+10=14.25)	Power and material consumption of APCM, manpower costs, maintenance of APCM systems
2	Water Pollution Control	(25+20=45)	Augmentation of Effluent treatment plant, Effluent	(73.46+70=143.46)	Treatment cost including cost of

			drainage network, drains around plants, storages & Installation of STP		treatment chemicals, pumping costs, manpower costs, power consumption, charges of CMEE, Ankleshwar
3	Fire & Safety (Automation control system - PLC)	(18+20=38)	Fire extinguishers & fire hydrant, PLC based system	(6.2+7=13.2)	Fire-fighting & fire hydrant maintenance, maintenance of PLC System
4	Environment Monitoring & Management	(0+2=2)	In-house analytical facilities	(2+3=5)	EMS cell activities, third party monitoring expenses
5	Occupational Health & Safety	(2.5+5=7.5)	First Aid centre, PPE and medical facilities	(2+2.5=4.5)	Medical examinations and FMO charges, First aid centre expenses
6	Green Belt development & maintenance	(2+1=3)	Plantation of green belt areas	(0.6+1=1.6)	Maintaining the greenbelt by hiring agency, irrigation and fertilizer, pesticides costs
7	Solid waste management	(3.8+10=13.8)	Construction of storage areas for different types of wastes in compliance with the HW rules together with necessary infrastructure and equipment for collection and transport	(2.35+80=82.34)	Manpower costs, transportation costs, charges for disposal at common disposal facilities
	TOTAL :-	(63.5+65=128.5)		(90.85+173.5=264.35)	
	CER Budget: CER Activities: ✓ Provision of Computers, Printers, Books in library, Projector, Cupboard, RO plant with complete structure & Benches for primary schools			(14.58+4.5=19.08)	

- | | | |
|--|---|--|
| | <ul style="list-style-type: none"> ✓ Provision of Dustbins at various street, mosquito fogging machines in village. ✓ Provision of 30 Nos. Solar street light (Solar pole, battery, panel, LED light complete) ✓ Solar Electrification through installation of Roof top system of 6 KW | |
|--|---|--|

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.

14) DELIBRATION AND RECOMMENDATION:

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

Conditions with which Environment Clearance is recommended:

Construction Phase

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

SPECIFIC CONDITIONS:

1. Project Proponent (PP) shall strictly abide by the outcome/decision of Hon'ble Supreme Court of India in Civil Appeal no. 8478/2020 regarding operation of the Hon'ble NGT orders dated 10/07/2019 & 14/11/2019.(In case of earlier CEPI area only i.e. GIDC- Vapi, Sachin, Pandesara, Ankleshwar, Panoli, Nandesari, Vatva, Odhav etc.)
2. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after the 31st December 2021, 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 subsequent amendments.
4. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
5. (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.
6. 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**].
7. 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.
8. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained
9. **Safety & Health:**
 - a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals
 - b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
 - c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.

- d) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
- e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
- f) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
- g) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
- h) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
- i) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
- j) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
- k) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
- l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.
- m) Unit shall provide chlorine leakage control emergency kit and FRP hood with scrubber system for chlorine safety

WATER

10. Total water requirement for the project shall not exceed 149.32 KLD. Unit shall reuse 31.6 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 117.72 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.

11. The industrial effluent generation from the project shall not exceed 73 KLD.

12. Management of Industrial effluent shall be as under:

- ✓ After expansion, 68 KL/day effluent shall be treated in ETP consist of primary treatment and treated effluent shall be sent to CMEE (Common Multi-Effect Evaporator) of M/s. BEIL, Dahej for total evaporation.
- ✓ Unit shall send waste water to Common MEE only after achieving inlet norms prescribed by GPCB ensuring content of effluent for COD so as not to get air borne during spray drying after APCM in order to achieve no adverse impacts on Environment and Human Health.

13. Domestic wastewater generation shall not exceed 1.6 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off into soak pit. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
14. 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.
15. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
16. Unit shall provide STP and ETP with adequate capacity.
17. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.
18. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
19. Proper logbooks of ETP, reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

20. Unit shall not exceed fuel consumption for Steam Boiler, TFH and D G Set as per the point no. E-2 as mentioned above.
21. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
22. Unit shall provide adequate APCM with process gas generation sources as the point no. **E-3** as mentioned above.
23. The fugitive emission in the workzoneenvironment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
 - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
 - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
 - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
24. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
25. For control of fugitive emission, VOCs, following steps shall be followed :
 - ✓ Closed handling and charging system shall be provided for chemicals.
 - ✓ Reflux condenser shall be provided over Reactors / Vessels.
 - ✓ Pumps shall be provided with mechanical seals to prevent leakages.

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

26. Solvent management shall be carried out as follows:

- ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
- ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
- ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
- ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
- ✓ Solvents shall be stored in a separate space specified with all safety measures.
- ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
- ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.

27. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, HCl, Br₂, HBr and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

28. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.

29. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.

30. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.

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

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

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

GREENBELT AREA

34. The PP shall develop green belt [857 m² (24%) inside plant premises + 1120 m² (32%) at Common Plot in

Ankleshwar GIDC= **Total: 1977 Sq. m.) i.e. 56 % 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.

OTHERS:

35. The project proponent shall carry out the entire activities[Provision of Computers, Printers, Books in library, Projector, Cupboard, RO plant with complete structure & Benches for primary schools, Provision of Dustbins at various street, mosquito fogging machines in village., Provision of 30 Nos. Solar street light (Solar pole, battery, panel, LED light complete), Solar Electrification through installation of Roof top system of 6 KW] proposed under CER shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
36. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

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

07	SIA/GJ/IND3/245893/2021	M/s. 4HEALTH LLP Survey no. 406, Village- Rupal, Taluka- Bavla, District- Ahmedabad, Gujarat- 382220.	EC
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Category of the unit: **5 (f)**

Project status: **New**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	SIA/GJ/IND3/245893/2021
1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	18.12.2021
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. &Date :	Not applicable as project is categorized as B2
1.7. Technical expert / Environmental Consultant :	M/s. T.R. Associates- Environmental Consultant
1.8. SEAC Meeting No. and Date:	381 st meeting dated 15.03.2022
1.9. Compliance of Existing EC & CCA	Not Applicable

2) This is a new project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

Product Table

Sr. No.	Name of the Products	CAS no.	Quantity MT/Month	*End-use of products
1	n- Benzylhydroxylamine. HCl	29601-98-7	6	Ticagrelor
2	(S)-1,1- Diphenylprolinol (for CBS Catalyst)	112022-81-8		Ticagrelor
3	Calcium-l-methyl Folate	26560-38-3		Neutraceutical as RBC Promoter
4	Levo- methyltetrahydrofolate calcium	151533-22-1		Neutraceutical as RBC Promoter
5	Folinic Acid calcium	1492-18-8		Neutraceutical as

		salt (leucovorin)			RBC Promoter
6		Iron carboxymaltose (Ferric carboxymaltose)	9007-72-1		Anti-anemic
7		Ironisomaltoside	1370654-58-2		Anti-anemic
8		4-Tert-Butyl Benzene Sulfonamide	6292-59-7		Bosentan
9		Ferric Citrate	3522-50-7		Antipsychotic
10		5-Amino - 4, 6-Dichloro -2-(propylthio) pyrimidine	145783-15-9	6	Ticagrelor Blood thinner
11		4,6-Dichloro-5-nitro-2-(propylthio) pyrimidines	145783-14-8		Ticagrelor Blood thinner
12		(1R, 2R)-Ethyl-2-(3,4-difluorophenyl) cyclopropane carboxylic Acid	220352-36-3		Ticagrelor Blood thinner
13		(1R,2S)-2-(3,4-difluorophenyl) cyclopropane amine Hydrochloride	1156491-10-9 1402222-66-5		Ticagrelor Blood thinner
14		(1R,2S)-2-(3,4-difluorophenyl) cyclopropane amine D(-) Mandalate	376608-71-8		Ticagrelor Blood thinner
15		2,6-Dihydroxyacetophenone	699-83-2		Antiasthmatic
16		Bosentan	147536-97-8		Anti-hypertension
17		(3aR, 4S, 6R, 6aS)-6-Amino-2, 2-dimethyl-tetrahydro-3aH-cyclopenta[d][1,3]dioxol-4-ol	155899-66-4		Ticagrelor Blood thinner
18		2-((3aR, 4S, 6R, 6aS)-6-Amino-2,2-dimethyl-tetrahydro-3aH-cyclopenta [d][1,3]dioxol-4-yloxy)ethanol Tart rate	376608-65-0		Ticagrelor Blood thinner
19		2-((3aR, 4S, 6R, 6aS)-6-Amino-2,2-dimethyl-tetrahydro-3aH-cyclopenta [d][1,3]dioxol-4-yloxy)ethanol Oxalate	1215268-15-7		Ticagrelor Blood thinner
20		4-(4-nitrophenyl)morpholin-3-one	446292-04-2	Rivaroxaban	
21		5-Chlorothiophene-2-carboxylic acid	24065-33-6	Rivaroxaban	
22		4-(4-aminophenyl)morpholin-3-one	438056-69-0	Rivaroxaban	
23		3-Amino Adamantn-1-	702-82-9	Vildagliptin	

	Ol			
24	R-3-Amino-t-Boc-piperidine	309956-78-3		Linagliptin
25	l-Prolinamide	7531-52-4		Vildagliptin
26	6-Fluoro-3-(4-piperidinyl)-1,2-benzisoxazole hydrochloride	84163-13-3		Paliperidone, Iloperidone & Risperidone
27	2-Aminoacetophenone	551-93-9	6	Linagliptin
28	Defrasirox	201530-41-8		Chronic Iron Reduction
29	BCBA 5-Bromo-2-chloro Benzoic Acid	21739-92-4		Empagliflozin & Dapagliflozin KSM
30	Ticagrelor	274693-27-5		Ticagrelor
31	Sodium cromoglycate	16110-51-3		Antiasthmatic
32	Rivaroxaban	366789-02-8		Antithrombotic and Anticoagulant (clot buster)
33	Vildagliptin	274901-16-5		Anti-diabetic
34	Voglibose	83480-29-9		Anti-diabetic
35	Iloperidone	133454-47-4		Antipsychotic
36	2-Nitroacetophenone	577-59-3		Linagliptin
37	2-Chloromethyl-4-methylquinazoline	109113-72-6		Linagliptin
38	8-Bromo-3-methylxanthine	93703-24-3		Linagliptin
39	8-bromo-7-(but-2-ynyl)-3-methyl-1H-purine-2,6(3H,7H)-dione	666816-98-4	6	Linagliptin
40	1-bromobut-2-yne	3355-28-0		Linagliptin
41	Linagliptin	668270-12-0		Anti-diabetic
42	Risperidone	106266-06-2		Antipsychotic
43	Paliperidone	144598-75-4		Antipsychotic
44	Glibenclamide	10238-21-8		Anti-diabetic
45	5-Chloro-2-methoxy-N-[2-(4-sulfamoylphenyl)ethyl] Benzamide	16673-34-0		Glibenclamide
46	Tamsulosin Hydrochloride	106463-17-6		BPH
47	Iron Polymaltose Complex	53858-86-9		Iron Supplement
R&D			0.1	
Total			30.1	

Brief Note:

- No of Manufacturing Plant: 1 nos
- Brief note regarding no of product to be manufactured considering plant capacity;

Unit will manufacture product of each group as per market demand. Unit will manufacture individual product

or all products in group but shall not exceed maximum given production capacity. However, while considering resources requirements and waste generation, worst case scenarios has been taken into consideration. Out of total 47 proposed products, at a time 4 products to be manufactured within the premises.

- 3) The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27thMarch, 2020.
- 4) The proposal was considered in the SEAC video conference meeting dated 15.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) PP submitted satellite map showing that there is no any water bodies, villages, School, monuments etc. within 500 m radius of the project site. Aerial distance of nearest habitat of village Rupal is at 0.85 km. PP also submitted that there are no Eco sensitive zones, wild life sanctuaries within the 10 km area from the boundary of the project site.
- 8) Committee found presentation and submission of project proponent satisfactory.
- 9) 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
- 10) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 1223(E) dated 27.03.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.
- 11) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details		
A-1	Project cost			
	Total cost of Proposed Project (Rs. in Crores):			
	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Total Project</td> </tr> <tr> <td>Rs. 6.46 Crores</td> </tr> </table>		Total Project	Rs. 6.46 Crores
Total Project				
Rs. 6.46 Crores				
	Break-up of proposed project Cost:			
	Details	Project Cost (Rs. In Crores)		
	Land	Rent		
	Building	1.5		

Machinery	3.43
Env. & Safety	1.18
Miscellaneous	0.35
Total	6.46

A-2 Details of CER -

PP shall carry out CER activities as below:

- ✓ Provision of Drinking water facility and Solar Panel

B Land / Plot ownership details:

- ✓ Land is on rent.
- ✓ Land Owner: Mr Narendrakumar Patel & Mr. Kunj Navnitkumar patel
- ✓ Land use conversion: Non agriculture (multi purpose) Land use obtained by the owner dated on 9th November, 2021 for 8320 m² area.
- ✓ Notarized Rent agreement was prepared dated on 17th December 2021 between land owner and M/s. 4health LLP which is valid upto 17th December 2031 (10 years).

B-1 Plot area

Total Plot area
8320 Sq. m.

B-2 Area adequacy**Area Adequacy table:**

Details of Land	Area (in Sq.mt.)	% of Total Area
Admin / QC/QA Building	375	4.51
Raw material / finish good warehouse	502.5	6.04
API / Intermediate plant	480	5.77
Utility building	200	2.40
Solvent recovery plant	50	0.60
Solvent yard	61.04	0.73
Solvent drum storage	366	4.40
ETP/SHW area & MEE plant	130	1.56
Boiler house	110	1.32
Solid fuel storage	50	0.60
Security cabin	9.1	0.11
OHC	16.02	0.19
Hydrogenation area	146.82	1.76
Greenbelt area	2831.13	34.03
Open area	96.1	1.16
Road area	2896.29	34.81
Total	8320	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

	Total (Sq. meter)
Area in Sq. meter	2831.13
% of total area	34.03%

Comments:

The condition shall be given that -

- The PP shall develop green belt (2831.13 Sq. m i.e. 34.03 % 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

Employment generation

Total
45

D WATER

D-1 Source of Water Supply

- Source- Borewell, CGWA NOC Application no. - 21-4/8646/GJ/IND/2022 dated 11th March, 2022.

Comments:

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

D-2 Water consumption (KLD)

Category	Quantity KLD	Remarks
(J) Domestic	3.75	Fresh water
(K) Gardening	6.04	Fresh water
(L) Industrial		
RO 1	65.78 (12+40.63+13.15)	RO Permeate (Process + Boiler) & RO Rejected
Washing	1.5	Fresh water
Cooling	12.22	Fresh water
Scrubber (Flue and process gas scrubber)	4.72	Fresh Water
Industrial Total	84.22	23.10 KLD Fresh water + 61.09 KLD

		Reuse water
Grand Total (A+B+C)	94.01	Fresh water: 32.92 KLD + Reuse water: 61.09 KLD

-
Comments:

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

D-3 Waste water generation (KLD)

Category	Waste water KLD	Remarks
(I) Domestic	3.52	To ETP
(J) Industrial		
RO 1	13.15	
Process	53.84	
Boiler	1.2	
Washing	1.5	
Cooling	1.22	
Flue gas Scrubber	1.5	
Process gas Scrubber	0.69	ETP
Total Industrial waste water	73.1	
Total [A + B]	76.62	

-
Comments:

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

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

3.52 KLD Domestic Waste Water shall be treated in ETP & treated wastewater shall be reused in Industrial purpose.

Comments:

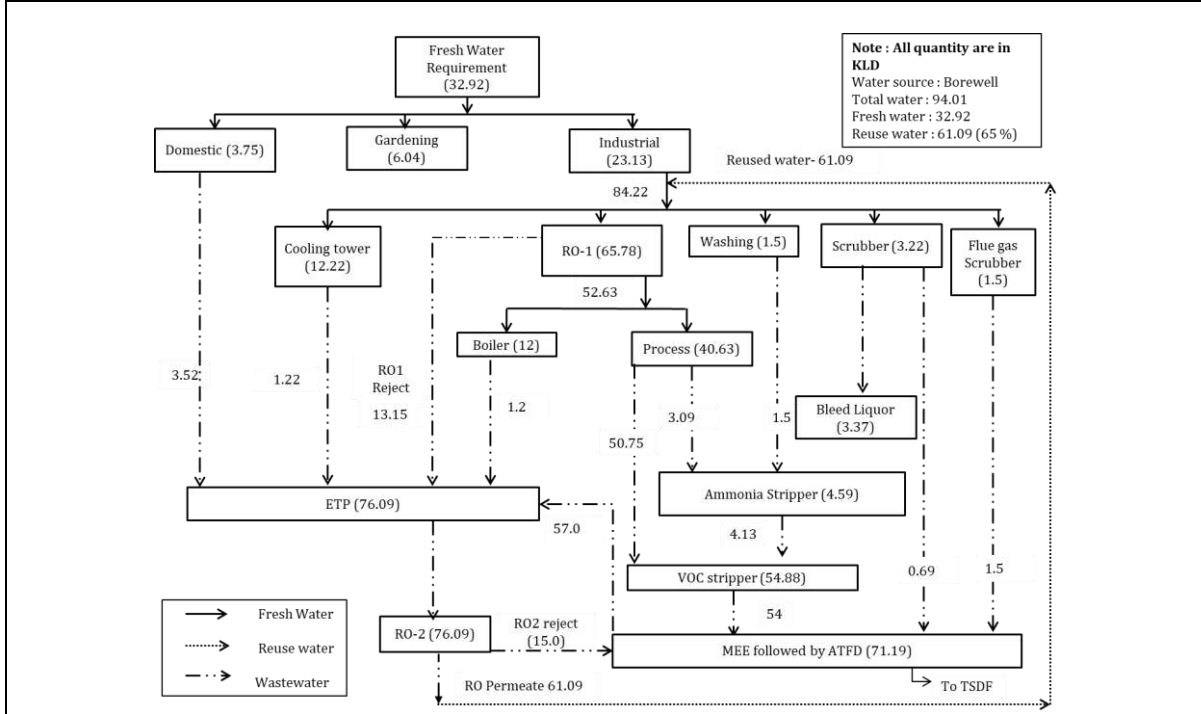
- Domestic wastewater generation shall not exceed 3.52 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.

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

Sr. no.	Quantity KLD	Facility
1	13.15	ETP in-house
2	53.84	MEE followed by ETP in-house
3	1.2	ETP in-house
4	1.5	MEE followed by ETP in-house
5	1.22	ETP in-house

6	1.5	MEE followed by ETP in-house
7	0.69	MEE followed by ETP in-house
Total	73.1	

D-5b Simplified water balance diagram



D-5c Summary

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	94.01	--
Quantity to be recycled (B)	61.09	Treated water from tertiary unit of ETP will be reused for industrial activity
Total fresh water requirement (C)	32.92	--
Ensure Total water requirement = Fresh water + Recycled water i.e. A = B + C		

Comments:

- Total water requirement for the project shall not exceed 94.01 KLD. Unit shall reuse 61.09 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 32.92 KLD and it shall be met through Borewell only. Prior permission from concerned authority for withdrawal of water shall be obtained.

Management of Industrial effluent shall be as under:

- Total 3.52 KL/Day domestic wastewater shall be generated which shall be treated in ETP.
- Concentrated stream i.e., from Process (3.09 KLD Ammonical wastewater and 50.75 KLD Non-Ammonical Wastewater), washing 1.5 KLD, Scrubber (3.37 KLD Bleed liquor and 0.69 wastewater and Flue gas Scrubber 1.5 KLD wastewater shall be generated. Out of

which, 3.09 KLD Ammonical Wastewater and 1.5 KLD washing wastewater shall be passed through Ammonical Stripper (Output 4.13 KLD from Ammonia Stripper). 50.75 KLD Non-Ammonical wastewater and 4.13 KLD from Ammonia Stripper wastewater shall be treated in VOC stripper (Output 54 KLD from VOC Stripper). Now, this 54 KLD wastewater from VOC stripper, 0.69 KLD wastewater from scrubber, 1.5 KLD wastewater from flue gas scrubber and 15.0 KLD RO-2 reject shall be treated in MEE followed by ATFD.

- MEE and ATFD condensate 57.0 KLD, 1.2 KLD Boiler Blowdown, 1.22 KLD Cooling Tower Blowdown, 3.52 KLD Domestic Wastewater and 13.15 RO-1 reject shall be treated in ETP.
- ETP sludge and MEE residue shall be disposed off to TSDF site. In this way unit shall maintain zero liquid discharge.
- Unit shall send waste water to in-house MEE for evaporation only after achieving inlet norms prescribed by GPCB ensuring content of effluent for COD so as not to get air borne during evaporation after APCM in order to achieve no adverse impacts on Environment and Human Health.
- Complete Zero Liquid Discharge [ZLD] status shall be maintained all the time and there shall be no drainage connection from the premises
- Unit shall provide ETP with adequate capacity.
- 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 : 300 KVA (UGVCL)

E-2 Flue gas emission details

S r. n o.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantit y of Fuel MT/ Day	Type of emissio ns i.e. Air Polluta nts	Air Pollution Control Measures (APCM)
12.	Boiler (3 TPH)	30 m	Imported or Indonesian Coal / Briquettes	(7.9 MT/day) / (10.9 MT/Day)	SPM, SO ₂ , NO _x	Multi cyclone separator followed by bag filter followed by Alkaline scrubber
13.	TFH (3,00,000 Kcal/hr)	30 m	Imported or Indonesian Coal / Briquettes	(1.09 MT/day) / (1.5 MT/Day)	SPM, SO ₂ , NO _x	Multi cyclone separator followed by Alkaline scrubber
14.	D.G. set (1*300 kVA)	12 m	Diesel	(84 lit/hr.)	PM, SO ₂ , NO _x	--

E-3 Process gas

Sr No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
1	Reaction Vessel	HCl, VOCs	12	Dual stage condenser system followed by the Dual stage Scrubber followed (Primary water + secondary media) followed by common activated carbon column
2	Reaction Vessel	HCl, VOCs	12	Dual stage condenser system followed by the Dual stage Scrubber followed (Primary water + secondary media) followed by common activated carbon column
3	Reactor vessel	Br ₂ , SO ₂ , VOCs	12	Dual stage condenser system followed by the Dual stage Scrubber followed (Primary water + secondary media) followed by common activated carbon column
4	Reactor vessel	NH ₃ , VOCs	12	Dual stage condenser system followed by the Dual stage Scrubber followed (Primary water + secondary media) followed by common activated carbon column
5	Dryer (5 Nos.)	VOCs	12	Activated carbon column
6	RCVD (1 No.)	VOCs	12	Activated carbon column
7	Hood attached to bromine handling area	Br ₂	12	Dual stage Scrubber followed (Primary water + secondary media) followed by common activated carbon column

E-4 Fugitive emission details with its mitigation measures.

- Fugitive emissions due to raw material handling and transportation of finished goods & VOC emission generated due to the handling and storage of the solvents & other raw materials.
- Mitigation measures :
- All the raw materials shall be stored in isolated storage area and containers shall be kept tightly closed. So it shall reduce the chances of fugitive emissions as well

	<p>as VOCs Emissions.</p> <ul style="list-style-type: none"> • Entire manufacturing activity shall be carried out in closed reactors/ vessels and regular checking and maintenance of the same shall be carried out to avoid any leakages. • All the motors of pumps for the handling of hazardous chemicals shall be flame proof and provided with suitable mechanical seal with stand-by arrangement. • The control of all parameters on a continuous basis shall be done by adequate control valves, pressure release valves and safety valves etc. • All the flange joints of the pipe lines shall be covered with flange guards. • The spillages / leakages of specific chemical shall be collected and it shall be drained to effluent treatment plant. • Precautionary measures shall be taken while handling various hazardous chemicals. • Adequate ventilation system in process plant and hazardous chemical storage area should be provided. • A regular preventive maintenance shall be planned to replace or rectify all gaskets, joints, valve, pump and other equipment etc. • Periodic monitoring of work area will be carried out to check the fugitive emission as per the norms of Gujarat Factory Rules. • Transporters shall be instructed to cover the trucks by tarpaulin sheets. • TREM card shall be provided to the driver during the transportation of Hazardous raw materials/products. • Sufficient information and training regarding characteristics and immediate actions in case of any spillage or accident during transportation of hazardous chemical shall be provided to the driver. • The unit shall also develop green belt area within the factory premises to control the fugitive emissions from spreading into surrounding environment. • To control the odour (if any) generated during the process, unit shall install turbo jet ventilators on the roof top of the industrial shed area. • Solvent recovery will not be less than 90% under any case 	
	<p><u>Comments for E2, E3 & E4:</u></p> <ul style="list-style-type: none"> ➤ The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities. ➤ The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities. 	
	<p>F Solvent management, VOC emissions etc.</p>	
	<p>F-1 Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.</p>	

Solvent Recovery Table

Solvent Name	Consumption	Generation	Recovery %	Loss %
	MT/Month	MT/Month		
1-Ethyl-nitro benzene*	7.98	7.8	97.74	0.18
Acetic Acid*	129	90.72	70.33	38.28
Acetone*	138	129.17	93.60	8.83
Acetonitrile*	85.2	80.04	93.94	5.16
Chloroform*	36	34.2	95.00	1.8
Cyclohexane*	18	17.16	95.33	0.84
Dichloroethane*	60	57	95.00	3
Dimethylformamide*	24	11.4	47.50	12.6
Ethanol*	238.2	223.2	93.70	15
Ethyl acetate*	345.91	331.61	95.87	14.3
Ethyl acetoacetate*	6.9	2.22	32.17	4.68
Ethylene dichloride*	76.71	69.68	90.84	7.03
Formaldehyde*	45	42.72	94.93	2.28
Isopropyl Acetate*	36	33	91.67	3
Isopropyl alcohol*	32.1	30.12	93.83	1.98
Isopropyl ether*	12	11.4	95.00	0.6
MDC (dichloro methane)*	1621.71	1575.4615	97.15	46.2485
Methanol	403.06	376.46	93.40	26.6
Methyl Cyclohexane*	2.4	2.28	95.00	0.12
n-Hexane*	103.85	100.28	96.56	3.57
Pyridine*	63.96	57	89.12	6.96
THF* (TETRAHYDROFURAN)	180	157.8	87.67	22.2
Toluene*	7.98	7.8	97.74	0.18
TBME* (TERT-BUTYL-METHYL-ETHER)	15.96	15.36	96.24	0.6

F-2 VOC emission sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- The entire manufacturing activities & distillation process shall be carried out in a totally closed system.
- Maintenance of the pipeline and valves & fittings shall be carried out regularly to avoid any leakages.
- Reactor shall be connected with two numbers of condensers where in the first condenser chilled water shall be used whereas in second brine solution shall be used as media and it shall be also equipped with vacuum system as per requirement.
- The condenser shall be provided with sufficient HTA and residence time to achieve more than 90% recovery.
- All the Flange joints of the pipe lines which carry solvents shall be covered with flange guards.

- VOC detectors shall be installed at various places to identify any fugitive emissions.
- Minimum number of flanges, joints and valves in pipelines shall be provided.

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F-3 | LDAR proposed:

LDAR programmer would not be applicable for,

- heavy liquids with vapor pressure < 0.3 kPa, it shall be desirable to check for liquid dripping as indication of leak
- Equipment and line sizes less than 2.54 cm, less than 300 hr service and in vacuum service.
- Equipment and piping during start up and shut down.
- Pumps (canned, diaphragm, magnetic), Valves (Diaphragm, bellow) and close loop Sampling points; and
- Non accessible points to the extent of 5% of total plant.

Leak detection and repair methods can be applied in order to reduce fugitive emissions from process unit sources. Leak detection methods are used to identify equipment components that are emitting significant amounts of VOC. Emissions from leaking sources may be reduced by three general methods.

- Repair,
- Modification

- Replacement of the source. In the case of open ended lines, however, equipment leaks are treated more effectively by installation of control equipment.

-

Components	Average quantity	Average Uncontrolled VOC Emissions (ton/year)	Percentage of total emission	Preventive Measures
Pumps	16	3.04	22.76	<ul style="list-style-type: none"> ➤ Use Sealless design ➤ Use Dual mechanical seal with barrier fluid maintained at a higher pressure than the pumped fluid ➤ Provide Closed-vent system ➤ Use Spare pumps at the time of repair. ➤ Tightening the packing glands ➤ The pump shall be flushed much as possible before seal replacement.
Valves	70	3.86	28.90	<ul style="list-style-type: none"> ➤ Use Sealless design. ➤ Plug type valves can be lubricated with grease to reduce emissions. ➤ Many valves have no means of in-service repair and must be isolated from the process.

Connectors	50	0.84	6.27	➤ Weld together In some cases, leaks from flanges can be reduced by replacing the flange gaskets.
Open ended lines	10	0.16	1.20	➤ Use of Blind, cap, plug, or second valve shall make 100% Control Over Leakage
Sampling Connections	30	4.13	30.88	➤ Provide Closed-loop sampling
Pressure relief valves	24	1.33	9.98	➤ Use of Rupture disk assembly shall make 100% Control Over Leakage

Comments:

- Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

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

Sr. no.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules	Quantity (MT/Annum)	Management of HW
21.	ETP Sludge	From ETP	35.3	273.92	Collection, Storage, transportation and send to TSDF for safe disposal.
22.	MEE Residue	From ETP	35.3	256.10	Collection, Storage, transportation and send to TSDF for safe disposal.
23.	Distillation Residue	From Manufacturing process	20.3	630.72	Collection, Storage, Transportation and Incinerated at CHWIF
24.	Spent Carbon	From Manufacturing process	28.3	475.92	Collection, Storage, Transportation and Incinerated at CHWIF.

25.	Spent Hyflow	From Manufacturing process	-	307.68	Collection, Storage, transportation and send to TSDF for safe disposal.
26.	Process residue	From Manufacturing process	28.1	13.68	Collection, Storage, Transportation, disposal at CHWIF site
27.	Spent Catalyst	From Manufacturing process	28.3	7.2	Collection, Storage, Transportation and Incinerated at CHWIF or send for regeneration to the authorized recycler
28.	Off Specification Drugs	From Manufacturing process	28.4	1.0	Collection, Storage, Transportation and Incinerated at CHWIF.
29.	Date Expired Product	From Manufacturing process	28.5	1.0	Collection, Storage, Transportation and Incinerated at CHWIF.
30.	Used Oil	From Machineries	5.1	0.5	Collection, storage and used within premises as a lubricant / sold to registered recycler.
31.	Spent solvent	From Manufacturing process	28.6	3463.88	Collected, Treated and Recover & Reuse in process.
32.	Discarded Plastic Bags / Barrels / Liners	From Manufacturing process	33.1	101.30	Collection, storage & sold to authorized recycler.
33.	Bleed liquor	From scrubber	35.1	101.1	Sell under Rule 9
<p>Comments:</p> <ul style="list-style-type: none"> ➤ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement. ➤ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB. 					
G-2	Non- Hazardous waste management matrix				
<p style="text-align: center;">✓ Fly Ash generation shall be 285.6 MTPA.</p> <p>Comments:</p> <ul style="list-style-type: none"> ➤ Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit. 					
H	SAFETY details				

H-1	Details regarding storage of Hazardous chemicals
	<ul style="list-style-type: none"> ○ Brief note on Storage of Hazardous chemicals in tanks: <ul style="list-style-type: none"> ○ Construction of Dyke walls around storage tanks to keep liquid from flowing out in case of damage to tank. ○ Proper earthing shall be provided to all storage tank to prevent the firing due to static charges. ○ In order to avoid the accident due to spillages or overflow the level indicators are placed which helps to know the exact level inside the tank. ○ Display boards shall be provided on all storage area and tanks which includes the name of the product, stored material of construction, calibration of tanks and date of painting. ○ Breathe valves and Flame arrestors shall be provided on flammable liquid storage tanks to prevent the firing. ○ Brief note on Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc. <ul style="list-style-type: none"> ○ 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 <p>-</p> <p><u>Safety details....</u></p> <ul style="list-style-type: none"> ➤ Applicability of PESO: Yes. Unit shall obtain PESO License for storage of chemicals. <p><u>Comments:</u></p> <ul style="list-style-type: none"> ➤ 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:
	<p>1. Sulfonation:</p> <ul style="list-style-type: none"> ➤ Sulfonation is exothermic reaction leads to runaway reaction. So, entire process of Sulfonation is to be followed as per standard operating procedure established by industry. ➤ All engineering controls w.r.t Sulfonation process i.e. temperature and pressure controller, jacket surrounding to reactor etc. shall be provided. ➤ Chilled water to control exothermic reaction during nitration. ➤ SO_x fumes shall be scrubbed in ventury Scrubber from the Sulfonation reactor.

- Only trained person shall be allocated for handling Sulfonation process.
- Programmable Logic Controller (PLC) based control plan shall be provided for Sulfonation.
- Direct Contact with skin and eyes shall be avoided.
- Appropriate personal protective equipment's like Safety Gloves, Goggles, shoes etc., shall be provided to workers.
- Periodically inspection of scrubber system shall be carried out.

2. Chlorination:

- All adequate engineering controls i.e. temperature and pressure controller, jacket surrounding to reactor etc. shall be provided for reactor containing chlorine.
- Traces of un-reacted chlorine shall be scrubbed in alkali scrubber followed by water scrubber system.
- SCBA shall be made readily available to handle leak of chlorine gas.
- Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing.
- Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools.

Accidental release measures:

- Chlorine gas is denser than air, thus it shall tend to remain at ground level rather than dispersing. So, at the time of chlorine leakage, evacuate persons at assembly point (above ground level)
- Leaked Chlorine shall be absorbed in Sodium hydroxide through closed hood system.
- Chlorine leak shall be handled by trained experienced person wearing SCBA.
- Ammonia Torch shall be provided for detection of Chlorine leak.

3. Bromination:

- Bromination is exothermic reaction leads to runaway reaction. So, entire process of bromination is to be followed as per standard operating procedure established by industry.
- All engineering controls w.r.t bromination process i.e. temperature and pressure controller, jacket surrounding to reactor etc. shall be provided.
- Chilled water to control exothermic reaction during bromination.
- Only trained person shall be allocated for handling bromination process.
- Programmable Logic Controller (PLC) based control plan shall be provided for Bromination.
- Direct Contact with skin and eyes shall be avoided.
- Appropriate personal protective equipment's like Safety Gloves, Goggles, shoes etc., shall be provided to workers.
- Periodically inspection of scrubber system shall be carried out.

Accidental release measures:

- Absorb with an inert material and put the spilled material in an appropriate waste disposal.
- Clean up spills immediately, observing precautions in the Protective Equipment section. (i.e. Self contain breathing apparatus, rubber coated shoes, acid proof gloves etc.). Remove all sources of ignition. Absorb spill with an alkaline material such as sodium thio-sulfate or lime. Carefully scoop up and place into appropriate disposal container. Provide ventilation. Do not get water inside containers.
- At workplace; higher concentration of Bromine vapours shall be absorb using sodium carbonate / sodium thiosulphate scrubber.

4. Nitration:

- Nitration is exothermic reaction leads to runaway reaction. So, entire process of nitration is to be followed as per standard operating procedure established by industry.
- All engineering controls w.r.t nitration process i.e. temperature and pressure controller, jacket surrounding to reactor etc. shall be provided.
- Chilled water to control exothermic reaction during nitration.
- NOx fumes shall be scrubbed in ventury Scrubber from the Nitration reactor.
- Only trained person shall be allocated for handling nitration process.
- Programmable Logic Controller (PLC) based control plan shall be provided for Nitration.
- Direct Contact with skin and eyes shall be avoided.
- Appropriate personal protective equipment's like Safety Gloves, Goggles, shoes etc., shall be provided to workers.
- Periodically inspection of scrubber system shall be carried out.

5. Hydrogenation

- Hydrogenation process shall be carried out in the separate dedicated process plant as mention in the plant layout.
- Building design has been carried out as per high pressure process vessel installation (As per Safety rule 1948).
- SOP for Hydrogenation :
- First of all clean the rector which is going to use for hydrogenation.
- Before reaction start first check for earthing of reactor. (light methods)
- After that purge nitrogen gas in the reactor at pressure of 2 kg/cm² for 15 min. Repeat this purging twice. At that time also check for pressure in the reactor with the help of pressure gauge. So we can insure that there is no leakage in the reactor.
- After that also check for oxygen level in the reactor with the help of oxygen analyser. Oxygen level shall be maintained less than 2 % for safety aspect.
- We shall use automatic gas regulator for controlled hydrogen purging.
- PLC base process controls and operation of plant shall be installed.
- Area shall be designed Flame proof type. Total enclosed process system. Instrument & Plant Air System. Nitrogen blanketing in Hydrogenation reactor.
- Safety valve and Rupture disc provided on reactor.
- Cooling Chilling and power alternative arrangement have been made on reactor.
- Trained skilled labour only allowed in the process area.
- Static earthing and electric earthing (Double) shall be provided for reactor and for hydrogen cylinder caring truck for static charges.
- Jumpers for static earthing on pipeline flanges of flammable chemical shall be provided.
- PRV station with shut off valve, safety valve provision shall be made for hydrogenation reaction safety. (two PRV with different pressure shall be provided)
- Standard Operating procedure shall be made for Before Hydrogen Gas charging in to reactor and after completion of reaction Nitrogen flushing shall be done.
- Flame arrestor shall be provided on vent line of reactor and it shall be extended above the roof level.
- Safe Catalyst charging method shall be adopted. SOP shall be prepared and operators shall be trained for the same.
- Hydrogen gas detector shall be installed for early detection of gas and it shall be connected to SCADA/PLC system. PPE shall be provided to operators.

H-3 Details of Fire Load Calculation

Total Plot Area:

8320 m²

Area utilized for plant activity:	2435.37 m2
Area utilized for Hazardous Chemicals Storage:	366 m2
Number of Floors:	G+3
Water requirement for firefighting in KLD:	18.67 KL
Water storage tank provided for firefighting in KLD:	270 KL Under ground and 30 KL Above ground
Details of Hydrant Pumps:	Jockey Pump 1 Nos. and Electrical and diesel pump 3 Nos.
Nearest Fire Station :	Sanand Nagarpalika Fire station 22km in NNE direction
Applicability of Off Site Emergency Plan:	Applicable

Comments:

- The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 300 KL. SEAC found it as per the requirement.

H-4 Details of Fire NOC/Certificate:

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

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

Number of permanent Employee:	45
Number of Contractual person/Labour:	No any
Area provided for OHC:	15 Sq. m.
Number of First Aid Boxes:	14
Nearest General Hospital:	Anaya Surgical Hospital 4.3km in N direction
Name of Antidotes to be store in plant:	10

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.

Details of Environmental Management Plan (EMP)

As below:

Sr. No	Unit	Details	Capital Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)
1	Waste Water	ETP, RO, MEE	0.3	1.3734
2	Air	APCM system	0.565	0.0505
3	Hazardous Management	Storage area and membership charges	0.0068	3.4131
4	Fire & Safety	Safety systems	0.4504	0.005
6	Green Belt Development	Development of green belt	0.0247	0.005
7	Occupational	Occupational	0.0255	0.005

	Health	health		
8	Noise Control	Noise enclosures	0.0012	0.0028
9	CER Funds	Solar panel and drinking facility	0.1267	--
Total			1.5353	4.87

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.

12) DELIBERATION AND RECOMMENDATION:

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

Conditions with which Environment Clearance is recommended:**Construction Phase**

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

SPECIFIC CONDITIONS:

1. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after the 31st December 2021, considered as per the provisions in force at that time as mentioned in the Notification vide S.O. 1223 (E) dated 27/03/2020.
2. 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 subsequent amendments.
3. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
4. (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.
5. 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**].
6. 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.
7. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained
8. **Safety & Health:**
 - a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals
 - b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
 - c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
 - d) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.

- e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
- f) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
- g) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
- h) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
- i) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
- j) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
- k) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
- l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.
- m) Unit shall provide chlorine leakage control emergency kit and FRP hood with scrubber system for chlorine safety
- n) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for nitration vessel safety
- o) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for exothermic reaction vessel safety.

WATER

9. Total water requirement for the project shall not exceed 94.01 KLD. Unit shall reuse 61.09 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 32.92 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
10. The industrial effluent generation from the project shall not exceed 73.10 KLD.
11. Management of Industrial effluent shall be as under:
 - Total 3.52 KL/Day domestic wastewater shall be generated which shall be treated in ETP.
 - Concentrated stream i.e., from Process (3.09 KLD Ammonical wastewater and 50.75 KLD Non-Ammonical Wastewater)), washing 1.5 KLD, Scrubber (3.37 KLD Bleed liquor and 0.69 wastewater and Flue gas Scrubber 1.5 KLD wastewater shall be generated. Out of which, 3.09 KLD Ammonical Wastewater and 1.5 KLD washing wastewater shall be passed through Ammonical Stripper (Output 4.13 KLD from Ammonia Stripper). 50.75 KLD Non-Ammonical wastewater and 4.13 KLD from Ammonia Stripper wastewater shall be treated in VOC stripper (Output 54 KLD from VOC Stripper). Now, this 54 KLD wastewater from VOC stripper, 0.69 KLD wastewater from scrubber, 1.5 KLD wastewater from flue gas scrubber and 15.0 KLD RO-2 reject shall be

treated in MEE followed by ATFD.

- MEE and ATFD condensate 57.0 KLD, 1.2 KLD Boiler Blowdown, 1.22 KLD Cooling Tower Blowdown, 3.52 KLD Domestic Wastewater and 13.15 RO-1 reject shall be treated in ETP.
- ETP sludge and MEE residue shall be disposed off to TSDF site. In this way unit shall maintain zero liquid discharge.
- Unit shall feed waste water to in-house MEE for evaporation only after achieving inlet norms prescribed by GPCB ensuring content of effluent for COD so as not to get air borne during evaporation after APCM in order to achieve no adverse impacts on Environment and Human Health.
- Complete Zero Liquid Discharge [ZLD] status shall be maintained all the time and there shall be no drainage connection from the premises.

12. Domestic wastewater generation shall not exceed 3.52 KL/Day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
13. Unit shall provide ETP with adequate capacity.
14. The unit shall provide metering facility at the inlet and outlet of ETP, Stripper, MEE & RO and maintain records for the same.
15. Proper logbooks of ETP, Stripper, MEE & RO; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

16. Unit shall not exceed fuel consumption for Steam Boiler, TFH and D G Set as per the point no. E-2 as mentioned above.
17. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
18. Unit shall provide adequate APCM with process gas generation sources as the point no. **E-3** as mentioned above.
19. The fugitive emission in the workzoneenvironment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
- Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
 - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
 - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
20. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
21. For control of fugitive emission, VOCs, following steps shall be followed :
- ✓ Closed handling and charging system shall be provided for chemicals.

- ✓ Reflux condenser shall be provided over Reactors / Vessels.
- ✓ Pumps shall be provided with mechanical seals to prevent leakages.
- ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.

22. Solvent management shall be carried out as follows:

- ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
- ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
- ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
- ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
- ✓ Solvents shall be stored in a separate space specified with all safety measures.
- ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
- ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.

23. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, HCl, Br₂, HCl, NH₃, and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

24. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
25. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
26. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
27. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
28. 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.
29. 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

30. The PP shall develop green belt [2831.13 m² (34.03%)] as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

31. The project proponent shall carry out the entire activities [Drinking water facility, Provision of Solar Panel] proposed under CER shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.

32. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

33. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local newspapers within seven days, about the Environment Clearance order accorded.

34. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.

35. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.

36. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.

37. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.

38. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.

39. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com & (b) seacgujarat@gmail.com

08	SIA/GJ/IND3/245978/2021	M/s. Riddhi Life Care Plot no. 606, GIDC Panoli, Ta. -Ankleshwar, Dist.: Bharuch, Gujarat-394116	EC
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Category of the unit: **5 (f)**

Project status: **New**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	SIA/GJ/IND3/245978/2021
1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	18.12.2021
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. &Date :	Not applicable as project is categorized as B2
1.7. Technical expert / Environmental Consultant :	M/s. Ecopreneur Incorporate
1.8. SEAC Meeting No. and Date:	381 st meeting dated 15.03.2022
1.9. Compliance of Existing EC & CCA	Not Applicable (if New)

2) This is a new project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

Product Table

Sr. No.	Name of Products	Quantity (MT/Month)
1.	API & Intermediates	30.0
2.	R & D	0.1

SR. No.	NAME OF PRODUCT	API OR INTERMEDIATE	CAS No.	Quantity MT/Month	End-use of the Products
1	Bisoprolol Fumarate & its intermediates	API	104344-23-2	30 TPM (Sr. No. 1 to 33)	Bisoprolol Fumarate is used to treat high blood pressure (hypertension) and heart failure.
2	Eflornithine Hydrochloride & its	API	66640-93-5		Eflornithine Hydrochloride is

	intermediates				used as an anticancer agent and as a chemoprevention agent.
3	Finofibrate & its intermediates	API	49562-28-9		Finofibrate is used along with a proper diet to help lower "bad" cholesterol and fats (such as LDL, triglycerides) and raise "good" cholesterol (HDL) in the blood.
4	2-n-propyl-4-methyl-6-(1-methyl benzimidazole-2-yl) benzimidazole	Interme diate	152628-02-9		Telmisartan is used to lower high blood pressure.
5	4'-Bromomethyl-biphenyl-2-carboxylic acid methyl esters	Interme diate	114772-38-2		Telmisartan is used to lower high blood pressure.
6	4,7- Di chloroquinoline(4,7-DCQ)	Interme diate	86-98-6		Telmisartan is used to lower high blood pressure.
7	Ethyl 2-(3-cyano-4-isobutoxyphenyl)-4-methyl-5-thiazolecarboxylate	Interme diate	160844-75-7		Febuxostat is used to treat hyperuricemia (constantly high levels of uric acid) in adults who have gout. It helps decrease your symptoms of gout.
8	6 chloro-4- hydroxy- 2- methyl-2H thieno [2,3-e] [1,2] thiazine- 3- carboxylate- 1,1-dioxide	Interme diate	70415-50-8		Lornoxicam is Used for the treatment of various types of pain, especially resulting from inflammatory diseases of the joints, osteoarthritis, surgery, sciatica, and other inflammations.
9	Cis Bromo Benzoate	Interme diate	61397-56-6		Ketoconazole is used to treat skin infections such as athlete's foot, jock itch, ringworm, and certain kinds of dandruff.
10	4-(4-Aminophenyl) morpholin-3-one	Interme diate	438056-69-0		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)
11	(S)-Glycidyl phthalimide	Interme diate	161596-47-0		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)
12	(S)-4-(4-(5-(Aminomethyl)-2-oxooxa szolidin-3-yl)phenyl)morpholin-3-one	Interme diate	446292-10-0		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)
13	6-Fluoro-3,4-dihydro-2H-1-benzopyran-2-carboxylic acid	Intermediate	129050-20-0	Nebivolol is used to treat high blood pressure. Nebivolol is in a class of medications called beta blockers.
14	Trityl Olmesartan medoximil	Intermediate	144690-92-6	Olmesartan is used to treat high blood pressure. Lowering high blood pressure helps prevent strokes, heart attacks, and kidney problems.
15	2-butyl-4-chloro-5-formyl imidazole	Intermediate	83857-96-9	Losartan is a medication used to treat high blood pressure. It is also used for diabetic kidney disease, heart failure, and left ventricular enlargement.
16	4'-[[2-butyl-4-chloro-5-(hydroxymethyl)-1H-imidazol-1-yl] methyl]-[1,1'-biphenyl]-2-carbonitrile	Intermediate	114772-55-3	Losartan is a medication used to treat high blood pressure. It is also used for diabetic kidney disease, heart failure, and left ventricular enlargement.
17	1,2,3,9-Tetrahydro-9-methyl-4H-carbazol-4-one	Intermediate	27387-31-1	Ondansetron HCl is used alone or with other medications to prevent nausea and vomiting caused by cancer drug treatment (chemotherapy) and radiation therapy. It is also used to prevent and treat nausea and vomiting after surgery.
18	N-T-Butylglycine hydrochloride	Intermediate	6939-23-7	Tigecycline is an antibiotic-Treatment of Bacterial infection
19	9-Aminomino cycline sulfate	Intermediate	149934-21-4	Tigecycline is an antibiotic-Treatment of Bacterial infection
20	4-(2-methoxyethyl) 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.
21	1-(isopropylamino)3-[4-(2-methoxyethyl) phenoxy] propane-2-ol	Intermediate	56392-17-7	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.
22	4-Hydroxycarbazole	Intermediate	52602-39-8		Carvedilol is used to treat high blood pressure (hypertension). High blood pressure adds to the workload of the heart and arteries.
23	4-(2,3-epoxypropoxy) carbazole	Intermediate	51997-51-4		It is used to treat high blood pressure (hypertension). High blood pressure adds to the workload of the heart and arteries.
24	2-(2-methoxyphenoxy) ethylamine	Intermediate	1836-62-0		Carvedilol is used to treat high blood pressure (hypertension). High blood pressure adds to the workload of the heart and arteries.
25	2-Amino-5-methyl thiazole	Intermediate	7305-71-7		Meloxicam is Anti-inflammatory- used to treat pain and inflammation in rheumatic diseases and osteoarthritis.
26	7-(4-Chlorobutoxy)-3,4-dihydro-2(1H) quinolinone	Intermediate	129722-34-5		Aripiprazole is An antipsychotic- used in the treatment of schizophrenia and bipolar disorder and other uses include as an add-on treatment in major depressive disorder
27	1-(2,3-Dichlorophenyl) piperazine hydrochloride	Intermediate	119532-26-2		Aripiprazole is An antipsychotic- used in the treatment of schizophrenia and bipolar disorder and other uses include as an add-on treatment in major depressive disorder
28	Ethyl chloro[(4-methoxyphenyl) hydrazono] acetate	Intermediate	27143-07-3		Apixaban is used to prevent serious blood clots from forming due to a certain irregular heartbeat (atrial fibrillation) or after hip/knee replacement surgery. With atrial fibrillation, part of the heart does not beat the way it should.
29	3-chloro-5,6-dihydro-1-(4-nitrophenyl)-2(1H)-pyridinone	Intermediate	536760-29-9		Apixaban is used to prevent serious blood clots from forming due to a certain irregular heartbeat (atrial fibrillation) or after hip/knee

					replacement surgery. With atrial fibrillation, part of the heart does not beat the way it should.
30	Phthalimido amlodipine	Intermediate	88150-62-3		Amlodipine is used to treat high blood pressure. Lowering high blood pressure helps prevent strokes, heart attacks, and kidney problems.
31	2-(dibutylamino)-1-(2,7-dichloro-9H-fluoren-4-yl)ethanol	Intermediate	69759-61-1		Lumefantrine is used to treat non-severe malaria. Artemether and lumefantrine is for use in adults and children at least 2 months old or who weigh at least 11 pounds.
32	Methyl-4-methoxy acetoacetate	Intermediate	41051-15-4		Dolutegravir is an antiviral medicine that is used with other medications to treat HIV, the virus that can cause the acquired immunodeficiency syndrome (AIDS).
33	3-(1-hydroxy-2-(methylamino)ethyl) phenol	Intermediate	1477-63-0		Phenylephrine is used for the temporary relief of stuffy nose, sinus, and ear symptoms caused by the common cold, flu, allergies, or other breathing illnesses
34	R & D	---	---	0.1	---
TOTAL					30.1 MT/Month

- 3) 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.
- 4) The proposal was considered in the SEAC video conference meeting dated 15.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) Committee found presentation and submission of project proponent satisfactory.
- 8) 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
- 9) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 1223(E)

dated 27.03.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.

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

Sr. no.	Particulars	Details														
A-1	Project cost															
Total cost of Proposed Project (Rs. in Crores):																
<table border="1"> <tr> <td>Total Project</td> </tr> <tr> <td>Rs. 4.0 Crores</td> </tr> </table>			Total Project	Rs. 4.0 Crores												
Total Project																
Rs. 4.0 Crores																
Break-up of proposed project Cost:																
<table border="1"> <thead> <tr> <th>Details</th> <th>Project Cost (Rs. In Crores)</th> </tr> </thead> <tbody> <tr> <td>Land</td> <td>0.74</td> </tr> <tr> <td>Building</td> <td>0.50</td> </tr> <tr> <td>Machinery</td> <td>1.00</td> </tr> <tr> <td>Env. & Safety</td> <td>1.76</td> </tr> <tr> <td>Miscellaneous</td> <td>--</td> </tr> <tr> <td>Total</td> <td>4.0</td> </tr> </tbody> </table>			Details	Project Cost (Rs. In Crores)	Land	0.74	Building	0.50	Machinery	1.00	Env. & Safety	1.76	Miscellaneous	--	Total	4.0
Details	Project Cost (Rs. In Crores)															
Land	0.74															
Building	0.50															
Machinery	1.00															
Env. & Safety	1.76															
Miscellaneous	--															
Total	4.0															
-																
A-2	Details of CER -															
PP shall carry out CER activities as below: Rain water harvesting system at Gram panchayat																
<ul style="list-style-type: none"> ✓ Water tank: 20 KL, Approx. cost Rs. 2,45,000 ✓ Installation of Pipelines, Valves, Joints, water flow meter, water pressure meter etc. cost: Rs. 2,85,000 ✓ Maintenance cost: Rs. 1,70,000 ✓ Primary medical check-up at village 																
B	Land / Plot ownership details:															
Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/ANK/TRF/FTO/PAN1/371, date: -25/10/2021. (Plot is transfer from BODAL CHEMICALS LTD to RIDDHI LIFE CARE)																
B-1	Plot area															
<table border="1"> <tr> <td>Total Plot area</td> </tr> <tr> <td>1554.75 Sq. m.</td> </tr> </table>			Total Plot area	1554.75 Sq. m.												
Total Plot area																
1554.75 Sq. m.																
-																
B-2	Area adequacy															
Land Break-up																
Sr.No.	Area	Ground Floor	First Floor	Second Floor	Sq. M.	%										
1	Production Area	0	170	170	340	0.00										
2	R.M. Storage	100	0	0	100	6.43										
3	F.G. Storage	70	0	0	70	4.50										
4	Utility Area	80	0	0	80	5.15										

5	ETP Area	90	0	0	90	5.79
6	Fresh Solvent Storage Area	30	0	0	30	1.93
7	Recover Solvent Storage Area	65	0	0	65	4.18
8	Solid waste storage /Hazardous Waste storage	50	0	0	50	3.22
9	Green Belt Area	513.0675	0	0	513	33.0 0
10	Office Area/OH centre	40	40	40	120	2.57
11	Open Area	516.6825	0	0	517	33.2 3
	TOTAL	1554.75				100

Area Adequacy table:

S. N.	Name of chemical	Quantity (Nos.)	Total (Nos.)	Total Qty. to be store
Non PESO solution				
1	Sulphuric Acid	250 Lit	31 Nos.	7.7 KL
2	Nitric Acid	250 Lit	40 Nos.	9.9 KL
3	Hydrochloric Acid	250 Lit	9 Nos.	2.3 KL
PESO Solution				
1	Acetic acid	250 Lit	14 Nos.	3.5 KL
2	Acetone	250 Lit	33 Nos.	8.17 KL
3	Chloroform	250 Lit	23 Nos.	5.74 KL
4	DMF	250 Lit	33 Nos.	8.17 KL
5	Ethanol	250 Lit	33 Nos.	8.31 KL
6	Ethyl acetate	250 Lit	34 Nos.	8.4 KL
7	IPA	250 Lit	34 Nos.	8.54 KL
8	MDC	250 Lit	30 Nos.	7.61 KL
9	Methanol	250 Lit	37 Nos.	9.22 KL
10	Toluene	250 Lit	39 Nos.	9.68 KL
Set of Cylinder and Bottle				
1	Hydrogen Gas	60 Kg	6 Nos.	0.33 m ³
2	Bromine Solution	3 Kg	583 Nos.	1.75 MT

- Area required for ETP 100.0 m².
- 65.0 m² area provided for the Boiler House.
- 340.0 m² (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: 280 Nos. (1 Bag=0.6 m ²)	7	46	70
2	Raw Material Storage area (1 week inventory) (G)	Drums: 100 Nos. (1 Drum = 0.5 m ²)	20	50	60
3	Raw Material Storage area	Drums: 160 Nos.	8	32	40

	(1 week inventory) (G)	(1 Bag=0.6 m ²)			
4	Solvent Storage Area (PESO) (Storage at a time)	Drums: 140 Nos. (1 Drum = 0.5 m ²)	35	70	95
5	Hydrogen Cylinder Storage Area	--	0.33	6	10
6	Bromine Storage Area	--	1.75	35	40
			72.08 MT	239 m²	315 m²

➤ 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

	Total (Sq. meter)
Area in Sq. meter	513 Sq. m.
% of total area	(Approx. 33 % of total plot area inside the premises)

Comments:

The condition shall be given that -

- The PP shall develop green belt (513.0 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

Employment generation

Total
10-15

-

D | WATER

D-1 | Source of Water Supply

- GIDC Water Supply
- NAO/PNK/3134, Dated: 12/01/2022

Comments:

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

D-2 Water consumption (KLD)

-

Category	Quantity KLD
(M) Domestic	1.0
(N) Gardening	1.5
(O) Industrial	
Process	6.89
Washing	1.50
Boiler	4.50
Cooling	1.72
Others (Scrubber)	0.85
Industrial Total	15.46
Grand Total (A+B+C)	17.96

-

Comments:

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

D-3 Waste water generation (KLD)

-

Category	Waste water KLD
(K) Domestic	0.5
(L) Industrial	
Process	6.98
Washing	1.50
Boiler	0.79
Cooling	0.44
Others (Scrubber)	0.00
Total Industrial waste water	9.71
Total [A + B]	10.21

-

Comments:

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

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

0.5 KLD Domestic Wastewater will shall be treated in ETP & treated wastewater sent to CMEE

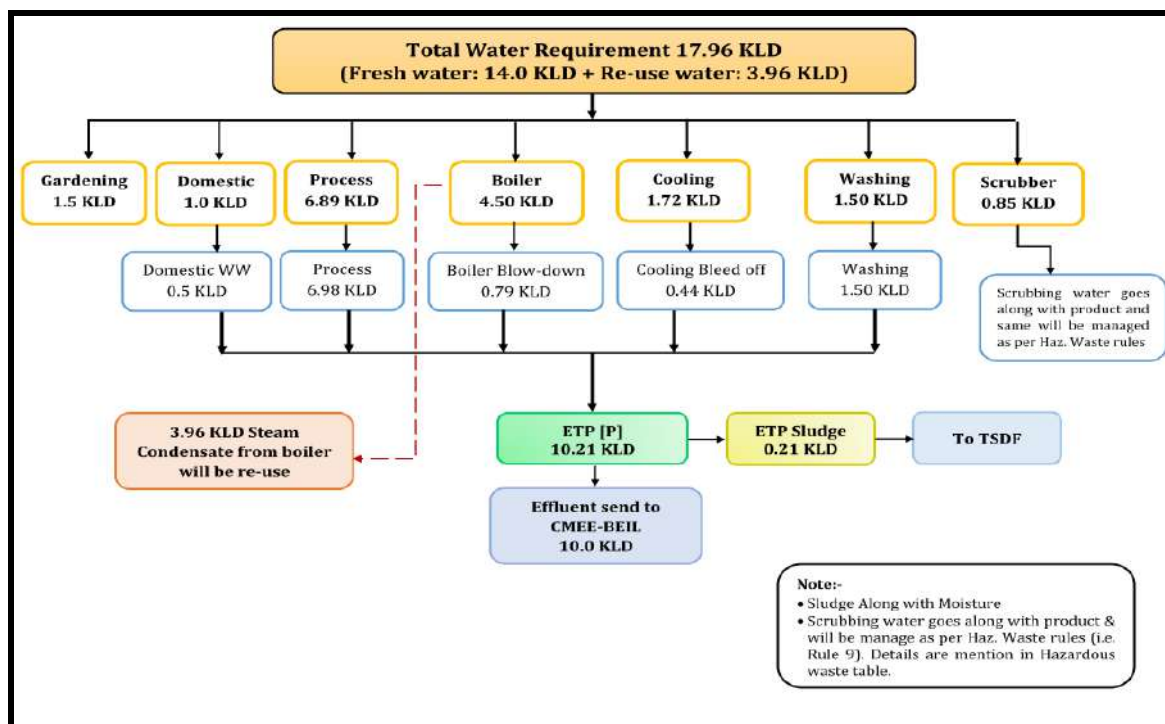
Comments:

- Domestic wastewater generation shall not exceed 0.5 KL/day for proposed project and it shall be treated in ETP.

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

Sr. no.	Quantity KLD	Facility
1	9.71 KLD	Effluent generated from Process, Utilities and Washing section shall be mixed with effluent generated from Domestic and treated into ETP [Primary] treatment plant and after adequate treatment effluent send to CMEE-BEIL for further disposal.
Total	9.71 KLD	

Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)
Membership certificate of M/s: BEIL- Ankleshwar vide no. Ref. BEIL/ANL/2022 dated 08.01.2022

D-5b Simplified water balance diagram**D-5c Summary**

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	17.96	
Quantity to be recycled (B)	3.96	
Total fresh water requirement (C)	14.0	

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

Comments:

25. Total water requirement for the project shall not exceed 17.96 KLD. Unit shall reuse 3.96 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 14.0 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.

26. Management of Industrial effluent shall be as under:

- ✓ 9.71 Effluent generated from Utilities and Washing section shall be mixed with 0.5 KLD effluent generated from Domestic hence total 10.21 KLD treated into ETP [Primary] and after adequate treatment effluent sent to CMEE-BEIL.
- ✓ Unit shall send waste water to Common MEE only after achieving inlet norms prescribed by GPCB ensuring content of effluent for COD so as not to get air borne during spray drying after APCM in order to achieve no adverse impacts on Environment and Human Health.

✓

27. Unit shall provide ETP with adequate capacity.

28. 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 :110 KVA

E-2 Flue gas emission details

S r. n o.	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)
15.	Boiler [Cap. 1. TPH]	33	Natural Gas And/or Briquettes /Agro Waste	700 SCM/Day And/or 1.25 MT/Day	PM, SO ₂ , NO _x	Adequate Stack Height And/or Multi Cyclone Separator + Bag Filter + Water scrubber
16.	Thermic Fluid Heater [Cap. 2 lakh Kcal/Hr.]	33	Natural Gas And/or Briquettes /Agro Waste	925 SCM/Day And/or 1.0 MT/Day	PM, SO ₂ , NO _x	Adequate Stack Height And/or Multi Cyclone Separator + Bag Filter +

							Water scrubber
17.	Hot air generator [Cap. 2 lakh Kcal/Hr.]	33	Natural Gas And/or Briquettes /Agro Waste	450 SCM/Day And/or 0.7 MT/Day	PM, SO ₂ , NO _x	Adequate Stack Height And/or Multi Cyclone Separator + Bag Filter + Water scrubber	
18.	D.G. Set [Cap. 30 KVA]	15	Diesel	20 Lit/Day	PM, SO ₂ , NO _x	Adequate Stack Height	
-							
E-3	Process gas						
-							
Sr No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)			
1	Reaction Vessel-1 [Product no. 3,9,10,13,15,18,19,27,31]	HCl	20	Two Stage Scrubber [Water Scrubber + Alkali Scrubber]			
2	Reaction Vessel-2 [SO ₂ : - Product no. 3] [HBr: - Product No. 9]	SO ₂ , HBr	20	Two Stage Alkali Scrubber			
-							
E-4	Fugitive emission details with its mitigation measures.						
<ul style="list-style-type: none"> - For Fugitive emission such as VOCs, VOC detectors will be installed. - Leak Detection and Repair (LDAR) program shall be implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment. - To control fugitive emission from process / reaction, all reactor condensers shall be connected to a scrubber to minimize loss of solvents / fugitive emission in to the atmosphere. 							
Comments for E2, E3 & E4:							
<ul style="list-style-type: none"> ➤ The fuel to be used is approved fuel for the requirement of the heat energy and has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities. ➤ The air pollution control measures, has been proposed by PP for checking flue gas emission, Process gas emission, fugitive gas emission, with adequate systems of reaction/ reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities. 							
F	Solvent management, VOC emissions etc.						

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

Solvent Recovery Table

Sr. No.	Name of Product	Name of Solvent	Boiling Point	Solvent Quantity	Solvent Recovered	Percentage Recovery
				(MT/M)	(MT/M)	%
1	Bisoprolol Fumarate	2 Isopropoxy Ethanol	143°C	12.000	11.400	95.0
		Toluene	110.6 °C	7.500	7.125	95.0
		Epichlorohydrin	117.9 °C	7.500	7.125	95.0
		Methanol	64.7 °C	7.500	7.125	95.0
		Isopropyl amine	34 °C	7.500	7.125	95.0
		Acetone	56 °C	6.000	5.700	95.0
2	Eflornithine	Methanol	64.7 °C	16.500	15.675	95.0
		P-Diethyl Benzene	183.7 °C	6.000	5.700	95.0
		Toluene	110.6 °C	9.000	8.550	95.0
		Isopropyl alcohol		18.000	17.100	95.0
		Tetrahydrofuran (THF)	66 °C	7.500	7.125	95.0
3	Finofibrate	Chlorolorm	61.2 °C	24.590	23.361	95.0
		Acetone	56 °C	14.754	14.016	95.0
4	2-n-Propyl-4-methyl-6-(1-methyl benzimidazole-2yl) Benzimidazole	Chlorobenzene	132 °C	9.868	9.375	95.0
		Ethyl acetate	77.1 °C	15.789	15.000	95.0
		Glacial acetic acid	118 °C	8.882	8.438	95.0
		Ethanol	78.37 °C	6.908	6.563	95.0
		Methanol	64.7 °C	8.882	8.438	95.0
5	4'-Bromomethyl-biphenyl-2-carboxylic acid methyl esters	MDC	39.6 °C	9.000	8.550	95.0
		Acetone	56 °C	7.500	7.125	95.0
		Cyclohexane	80.75 °C	28.500	27.075	95.0
6	4, 7-DICHLOROQUINOLINE	Skellysolve	36.0 °C	33.582	31.903	95.0
		Dowtherm	258° C	29.104	27.649	95.0
7	Ethyl-2-(3-Cyano-4-isobutoxyphenyl)-4-methyl-1,3-thiazole-5-carboxylate	DMF	153 °C	30.000	28.500	95.0
		Methanol	64.7 °C	7.500	7.125	95.0
8	6 Chloro-4-Hydroxy-2-Methyl-2H-Thieno[2,3-e] [1,2] thiazine-3-Carboxylate-1,1-dioxide	Methanol	64.7 °C	13.500	12.960	96.0
		Toluene	110.6 °C	16.500	15.840	96.0
9	Cis- bromo benzoate	Toluene	110.6 °C	31.579	30.000	95.0
		Methanol	64.7 °C	19.737	18.947	96.0
10	4-(4-aminophenyl)morpholin-3-one	Toluene	110.6 °C	6.000	5.760	96.0
11	(S)-Glycidyl phthalimide	Methanol	64.7 °C	9.091	8.636	95.0
		IPA	82.5 °C	45.455	43.182	95.0
12	(S)-4-(4-(5-Aminomethyl)-2-oxooxazolidin-3-yl)phenyl)morpholin-3-one	THF	66 °C	10.500	9.975	95.0
		Ethanol	78.37 °C	15.000	14.250	95.0
13	6-Fluoro-3,4-Dihydro 2h-1- Benzopyran-	Ethylene dichloride (EDC)	83.47 °C	15.000	14.250	95.0

	Benzoyl 2-Carboxylic Acid	Ethyl acetate	77.1 °C	11.250	10.688	95.0
		Acetic acid	118 °C	15.000	14.250	95.0
14	Trityl Olmesartan medoximil	Ethyl acetate	77.1 °C	11.379	10.924	96.0
15	2-Butyl-4-Chloro-1H-imidazole-5-carbaldehyde	Methanol	64.7 °C	6.000	5.760	96.0
16	4-(2-butyl-4-chloro 5-hydroxymethyl)imidazolymethyl-biphenyl – carbonitrile	Toluene	110.6 °C	26.250	24.938	95.0
		Methanol	64.7 °C	10.500	9.975	95.0
17	1,2,3,9-Tetrahydro-9-methyl-4H-carbazol-4-one	methylene dichloride	39.6 °C	45.000	42.750	95.0
18	N-T-Butylglycine hydrochloride	Isopropyl alcohol	82.5 °C	27.000	25.650	95.0
		Hexane	69 °C	9.000	8.550	95.0
		Methanol	64.7 °C	12.000	11.400	95.0
19	9-Amininocycline sulfate	Isopropyl alcohol	82.5 °C	18.000	17.100	95.0
		Hexane	69 °C	9.000	8.550	95.0
		Methanol	64.7 °C	12.000	11.400	95.0
		Toluene	110.6 °C	9.000	8.550	95.0
20	4-(2-METHOXYETHYL)PHENOL	Ethylene dichloride	83.47 °C	22.500	21.375	95.0
		Methanol	64.7 °C	20.000	19.000	95.0
21	1-(isopropylamino)3-[4-(2-methoxyethyl)phenoxy] propane-2-ol	Isopropyl alcohol	82.5 °C	33.000	31.350	95.0
23	4-(2,3-epoxypropoxy)-carbazole	IPA	82.5 °C	31.500	29.925	95.0
24	2-(2-Methoxyphenoxy)-ethylamine	MDC	39.6 °C	13.500	12.825	95.0
		EDC	83.47 °C	25.500	24.225	95.0
25	2-Amino 5-Methyl Thiazole	Toluene	110.6 °C	15.000	14.400	96.0
26	7-(4-Chlorobutoxy)-3,4-dihydro-2(1H)quinolinone	Dimethyl acetamide	165 °C	30.395	28.875	95.0
27	1-(2,3 Di Chloro Phenyl) Piperazine Hydrochloride	Methanol	64.7 °C	51.000	48.960	96.0
28	Ethyl chloro[(4-methoxyphenyl)hydrazono] acetate	Ethyl Acetate	77.1 °C	17.964	17.066	95.0
		IPA	82.5 °C	26.946	25.599	95.0
29	3-chloro-5,6-dihydro-1-(4-nitrophenyl)-2(1H)-pyridinone	Isopropyl alcohol	82.5 °C	21.000	19.950	95.0
		Acetone	56 °C	16.500	15.675	95.0
		Methylene Dichloride	39.6 °C	21.000	19.950	95.0
30	Phthaloyl amlodipine	Methanol	64.7 °C	50.000	47.500	95.0
31	2-(dibutylamino)-1-(2,7-dichloro-9H-fluoren-4-yl)ethanol	Methanol	64.7 °C	24.000	22.800	95.0
32	methyl-4-methoxy acetoacetate	Toluene	110.6 °C	35.385	33.615	95.0
33	3-(1-hydroxy-2-(methylamino)ethyl)phenol	Methanol	64.7 °C	16.500	15.765	95.5
		Chloroform	61.2 °C	7.500	7.200	96.0
		IPA	82.5 °C	12.300	11.808	96.0
		L(+) Tartaric acid	399 °C	6.000	5.760	96.0

		Acetone	56 °C	3.000	2.880	96.0	
F-2	VOC emission sources and its mitigation measures						
Measures for achieving maximum solvent recovery and minimize VOC generation:							
<ul style="list-style-type: none"> • The entire manufacturing activities & distillation process will be carried out in a totally closed system. • Maintenance of the pipeline and valves & fittings will be carried out regularly to avoid any leakages. • Reactor will be connected with three numbers of condensers where in the first condenser chilled water will be used whereas in second and third condenser brine solution will be used as media and it will be also equipped with vacuum system as per requirement. • The condenser will be provided with sufficient HTA and residence time to achieve more than 90% recovery. • All the Flange joints of the pipe lines which carry solvents will be covered with flange guards. • VOC detectors will be installed at various places to identify any fugitive emissions. • Minimum number of flanges, joints and valves in pipelines shall be provided. 							
F-3	LDAR proposed:						
Leak Definition							
<ul style="list-style-type: none"> • A leak is detected whenever the measured concentration exceeds the threshold standard (i.e., leak definition) for the applicable regulation. • Leak definitions vary by regulation, component type, service (e.g., light liquid, heavy liquid, gas/vapor), and monitoring interval. • Many equipment leak regulations also define a leak based on visual inspections and observations (such as fluids dripping, spraying, misting or clouding from or around components), sound (such as hissing), and smell. 							
Following steps shall be followed for effective implementation of LDAR Program:							
<ol style="list-style-type: none"> 15. Process Controls 16. Emissions control program 17. Selection of appropriate method for leak detection 18. Scheduling and checklist for Leak Detection 19. Methods for rectification of identified leaks 20. Frequency of Monitoring 21. Record keeping of LDAR Program 							
Comments:							
<ul style="list-style-type: none"> ➤ Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement. ➤ Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs). 							
G	Hazardous waste						
G-	Hazardous waste management matrix						

1					
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	60	Collection, Storage, Transportation, reuse or send back to supplier or sell to authorize 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	77	Collection, Storage, Transportation and sent to Common TSDF site (Through GPS mounted vehicle)
4.	Process waste	From Product No. 5,11,14,18,19,20,22 Max Generation From: 4-(2-METHOXYETHYL) PHENOL	28.1	108	
5.	Distillation Residue	From Product No. 1 to 21, 23 to 33	20.3	45	Collection, Storage, transportation and sent for co-processing in cement industries disposal at CHWIF. (Through GPS mounted vehicle)
6.	Spent Carbon	From Product No. 5,10,13,14,18,19,27,33 Max generation from: 4'-Bromomethyl-biphenyl-2-carboxylic acid	28.3	22	

		methyl esters			
7.	Spent Catalyst	From Product No. 20,22 Max generation from: 4-(2-METHOXYETHYL)PHENOL	28.2	12	
8.	HCl Sol. [28-33%]	Scrubber & From Product No. 3,9,10,13,15,18,19, 27,31 Max generation from: 2-Butyl-4-Chloro-1H-imidazole-5-carbaldehyde	SCH-II-/B(15)	302	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
9.	Sodium Bromide Solution [15-20%]	Scrubber & From Product No. 9 Max generation from: Cis- bromo benzoate	--	330	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
10.	Sodium bisulfite Sol. [30-40%]	Scrubber & From Product No. 3 Max Generation From: Finofibrate	--	230	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
11.	Spent Solvent	From Product No. 1 to 21, 23 to 33	28.6	715	Collection, Storage, Recovery and Recycle for manufacturing of product.
12.	Off-Specification Products	Process	28.4	10.0	Collection, Storage, transportation and sent for co-processing/Incineration in cement industries disposal at CHWIF. (Through GPS mounted vehicle)
13.	Sodium hypo Chlorite	From Scrubber	0.0	15	Collection, storage and sent to ETP for further Treatment.
-					
Comments: <ul style="list-style-type: none"> ➤ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details 					

	provided and found it as per requirement. ➤ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.																																																																																															
G-2	Non- Hazardous waste management matrix																																																																																															
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	<ul style="list-style-type: none"> • Adequate ventilation. • Use of drum pump for transferring. • Emergency shower and eyewash provided. • Check valve, hoses, pipes, gland, clips, and pumps. • PPE and First Aid is provided.
TOXIC CHEMICALS	<ul style="list-style-type: none"> • All the toxic chemicals are pumped in closed loop to the reactors to avoid fugitive emission • All the toxic chemicals will be stored under adequate safe condition. The storage of corrosive and toxic chemicals will be segregated from each other. • Smoking is prohibited inside the factory. • Employees will be properly trained for handling of toxic and corrosive chemicals. All pipe joints will be provided with heavy duty gaskets to prevent any leakage. Self-breathing apparatus will be provided and workers will be trained about their use also. • Spare barrels of sufficient quantity will be kept ready for any emergency spillage or leakage. • Drum trolley will be used for the movement of drums of hazardous chemicals. • Liquid chemicals will be transferred by mechanical seal pump through closed pipeline.
<p>➤ Applicability of PESO: Yes. Unit will obtain PESO License for storage of chemicals.</p> <p>Comments:</p> <p>➤ 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.</p>	
H-2	Types of hazardous Processes involved and its safety measures:
Type of Process	Safety measures including Automation
Hydrogenation process:-A	<p>For Hydrogen cylinders</p> <ol style="list-style-type: none"> 1. Hydrogen cylinders will be stored in cylinder storage area. Cylinder storage license will be obtained from PESO as per Gas cylinder rules. 2. Hydrogen cylinder storage area will be made well ventilated and safe distance will be maintained as per gas cylinder rule. 3. Sprinkler system provision will be made in cylinder storage area. 4. Gas detectors will be provided in Hydrogen cylinder storage area. 5. Copper tube will be used for Hydrogen cylinder connection with header. PRV station will be provided for Hydrogen and nitrogen cylinder header. 6. Non sparking tools will be used for cylinder connection with header. FLP type area will be provided. 7. Total enclosed process system. 8. Instrument & Plant Air System. DCS operational plant. 7. Nitrogen blanketing in Hydrogenation reactor.

8. Safety valve and Rupture disc provided on reactor.
 11. Cooling Chilling and power alternative arrangement have been made on reactor.
 12. Hydrogen and Nitrogen Cylinder bank away from the autoclave reactor.
 13. PRV station with shut off valve, safety valve provision will be made for hydrogenation reaction safety.
 11. Before Hydrogen Gas charging into reactor and after completion of reaction Nitrogen flushing will be done.
 12. Flame arrestor will be provided on vent line of reactor and it will be extended up to roof level.
 16. Open well ventilated and fragile roof will be provided to on reactor.
 17. Safe Catalyst charging method will be adopted.
 18. SOP will be prepared and operators will be trained for the same.
 17. Static earthing and electric earthing (Double) provided.
 20. Rector vent extended out side the process area and flame arrestor provided on vent line.
 21. Dumping vessel arrangement will be made.
 22. Jumpers for static earthing on pipeline flanges of flammable chemical will be provided.

Details regarding project safety aspects of Hydrogenation as per the prevailing norms.

Hydrogenation Plant:

- FLP type area will be provided.
- Total enclosed process system.
- Instrument & Plant Air System.
- Nitrogen blanketing in Hydrogenation reactor.
- Safety valve and Rupture disc provided on reactor.
- Cooling Chilling and power alternative arrangement have been made on reactor.
- Hydrogen and Nitrogen Cylinder bank away from the auto clave reactor.
- PRV station with shut off valve, safety valve provision will be made for hydrogenation reaction safety.
- Before Hydrogen Gas charging in to reactor and after completion of reaction Nitrogen flushing will be done.
- Flame arrestor will be provided on vent line of reactor and it will be extended up to roof level.
- Open well ventilated and fragile roofs will be provided to on reactor.
- Safe Catalyst charging method will be adopted.
- SOP will be prepared and operators will be trained for the same.
- Static earthing and electric earthing (Double) provided.
- Reactor vent extended outside the process area and flame arrestor provided on vent line.
- Dumping vessel arrangement will be made.
- Jumpers for static earthing on pipeline flanges of flammable chemical will be provided.

Process Safety:

- Safety measures will be adopted from the design stage.
- Safety Valve and pressure gauge will be provided on reactor

		<p>and its jacket (if jacket is provided).</p> <ul style="list-style-type: none"> • Utility like Chilling, cooling, vacuum, steaming and its alternative will be provided to control reaction parameters in a safe manner. • Free Fall of any flammable material in the vessel will be avoided. • Static earthing provision will be made at design stage to all solvent handling equipments, reactors, vessels & powder handling equipments. • Any reaction upsets will be confined to the reaction vessel itself. • All emergency valves and switches and emergency handling facilities will be easily assessable. • Further all the vessels will be examined periodically by a recognized competent person under the Gujarat Factory Rules. • All the vessels and equipments will be earthed appropriately and protected against Static Electricity. Also for draining in drums proper earthing facilities will be provided. • Materials will be transferred by pumping through pipeline or by vacuum from drums. • All solvents and flammable material storage tanks will be stored away from the process plant and required quantity of material will be charge in reactor by pump. • Jumpers will be provided on all solvent handling pipeline flanges. • Caution note, safety posters, stickers, periodic training & Updatation in safety and emergency preparedness plan will be displayed and conducted. • Flame proof light fittings will be installed in the plant. • All the Plant Personnel will be provided with Personal Protection • Equipments to protect against any adverse health effect during operations, leakage, spillages or splash. PPE like Helmets, Safety Shoes, Safety • Glasses, Acid-Alkali Proof Gloves etc. will be provided to the employees. • All employees will be given and updated in Safety aspects through periodic training in safety. <p>➤ Material Safety Data Sheets of Raw Materials & Products will be readily available that the shop floor</p>	
	<p>Bromination</p>	<p>Bromine bottle Storage & Handling Safety</p> <p>The amount of bromine in storage kept to a minimum.</p> <ul style="list-style-type: none"> • Floors of impervious construction, preferably concrete. • Bromine bottle wooden carriage stored on collection pallets • Area where bromine used or stored enclosed so that unauthorized persons are prevented from entering the area. • Personnel escape routes clearly marked and it maintained without any obstructions including adequately sized doors and windows. • Facilities like offices, eating, showering and changing rooms, located in up wind direction and remote from the area where bromine will be handled or stored. Provide an adequate supply of clean water for washing and showers. • Emergency siren, telephone provided in storage area for the reporting of accidents or emergency situations. The emergency telephone numbers displayed at prominent locations and it include 	

		<p>the fire department, ambulance service, emergency response team, hospital and police.</p> <ul style="list-style-type: none"> • A wind sock provided which will clearly visible from all points on the site and replaced as required. This will be required for indicating wind strength and direction. • Emergency respirator equipment cabinets (Cupboard) installed not more than 30 meters or 10 seconds walking distance from any location in the storage area. • Showers and eyewash fountains provided, clearly marked, well lit and with unobstructed access. • Signs posted prominently at the site entrance and throughout the installation with area maps showing access ways, hydrant locations, emergency showers, location of emergency equipment and emergency telephone numbers. • All management and operating personnel involved in the use or handling of bromine will undergo safety training, in addition to specific task training. • Only experienced well-trained operators allowed to handle Bromine. • Bromine glass bottle capacity 1 liters and six bottles stored in one packing box. • Bromine stored in dry and cool place and well ventilated area. • The driver and assistant driver of any vehicle transporting bromine should be comply with the following requirements: • Open space separated from public highway and public dwellings, where public does not normally pass. No passengers will be allowed. • The driver or driver's assistant may not open a package containing bromine. • Parking brakes will be to be applied whenever parked. • If the vehicle will be parked on a road at night or with poor visibility, warning signs are to be placed 10 meters ahead of and behind the vehicle. • TREM CARD will be provided to all transporters and trained for transportation Emergency of Hazardous chemicals. • American National Standards Institute (ANSI) approved chemical safety goggles will be there at all times when handling Br₂. • Full face shield over eyewear provided.. • Full body protection PVC suite provided. • Eyewash fountains should be located in areas where bromine will be handled, used or stored. • When in danger of contact with liquid bromine, wear an approved chemical resistant suit. • Leather or other non-woven ANSI approved steel-toed shoes or Gum boot provided. • Protective rubber boots should be worn over shoes for extra protection. ➤ Have NIOSH approved respirators and self-contained breathing apparatus available. 	
	Nitration process	Not Applicable	
	Exothermic Reaction	Not Applicable	

Chlorination Process safety measures: (Chlorine Gas)	Not Applicable				
H-3	Details of Fire Load Calculation				
Total Plot Area:		1554.75 m ²			
Area utilized for plant activity:		525.0 m ²			
Area utilized for Hazardous Chemicals Storage:		315.0 m ²			
Number of Floors:		G+2			
Water requirement for firefighting in KLD:		2625.0 L			
Water storage tank provided for firefighting in KLD:		200 KL			
Details of Hydrant Pumps:		25			
Nearest Fire Station :		3 km			
Applicability of Off Site Emergency Plan:		Yes			
Comments:					
<ul style="list-style-type: none"> ➤ The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 200 KL. SEAC found it as per the requirement. 					
H-4	Details of Fire NOC/Certificate:				
Unit will obtain Fire NOC after receipt of EC and before getting CTO.					
H-5	Details of Occupational Health Centre (OHC):				
-					
Number of permanent Employee:		15			
Number of Contractual person/Labour:		10			
Area provided for OHC:		30 m ²			
Number of First Aid Boxes:		10 nos			
Nearest General Hospital:		5 Km			
Name of Antidotes to be store in plant:		Artificial respiration, First Aid, etc.			
-					
Comments					
<ul style="list-style-type: none"> ➤ 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. 					
Details of Environmental Management Plan (EMP)					As below:
Sr. No	Unit	Details	Capital Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)	
1	Waste Water	Construction cost of ETP [P] + Treatment cost of CMEE-BEIL+ Maintenance cost of ETP	0.40	2.19	
2	Air	Installation Cost of Boiler (1	0.25	0.07	

		nos.) + THF (1 no.) + HAG (1 No.) & DG Set, and stack + 2 Nos. of Scrubbers and stack + APCM for flue gas emission + Process Gas Emission + Maintenance cost		
3	Hazardous Management	Membership cost of TSDF + Construction of Hazardous waste storage yard + Cost for TSDF disposal + Co-processing Waste+ incineration disposal	0.20	0.66
4	Fire & Safety	Cost of Fire Extinguisher, Fire Trolley, Fire Proximity Suit + Fire hydrant line + all pumps and additional cost + Emergency Fund allocation Installation cost of all the Safety Equipment's/ Control Measures [i.e., Personal protective Equipment, Noise Control system, Process Safety] + Installation Cost of PLC Based SCADA System for Hydrogenation process, Bromination and Distillation Process + Monitoring cost of 3 rd party Risk assessment	0.55	0.27
6	Green Belt Development	33% of the plant area will be developed as greenbelt.	0.01	0.0075
7	Occupational Health	Occupational health needs attention during construction, operation & maintenance phases. Cost of medical room, oxygen cylinder, Bed facilities, First Aid Box and basic amenities. Monitoring cost of Periodic Medical Examination of All workers.	0.10	0.10
8	Noise Control	Installation cost of VOC-LDAR Monitoring + Monitoring instrument and laboratory Expense + Analysis Instrument-COD, BOD, pH meter + Maintenance/ 3 rd party monitoring cost	0.25	0.12
9	CER Funds	CER Activity	--	0.08
Total			1.76	3.4975 Crore/ Annum

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.

11) DELIBRATION AND RECOMMENDATION:

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

Conditions with which Environment Clearance is recommended:**Construction Phase**

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

SPECIFIC CONDITIONS:

1. Project Proponent (PP) shall strictly abide by the outcome/decision of Hon'ble Supreme Court of India in Civil Appeal no. 8478/2020 regarding operation of the Hon'ble NGT orders dated 10/07/2019 & 14/11/2019.(In case of earlier CEPI area only i.e. GIDC- Vapi, Sachin, Pandesara, Ankleshwar, Panoli, Nandesari, Vatva, Odhav etc.)
2. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after the 31st

December 2021, 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 subsequent amendments.
4. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
5. (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.
6. 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**].
7. 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.
8. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained
9. **Safety & Health:**
 - a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals
 - b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
 - c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
 - d) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
 - e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.

- f) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
- g) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
- h) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
- i) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
- j) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
- k) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
- l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.
- m) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for nitration vessel safety
- n) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for exothermic reaction vessel safety.

WATER

10. Total water requirement for the project shall not exceed 17.96 KLD. Unit shall reuse 3.96 KLD of steam condensate from boiler within premises. Hence, freshwater requirement shall not exceed 14.0 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
11. The industrial effluent generation from the project shall not exceed 9.71 KLD.
12. Management of Industrial effluent shall be as under:
 - ✓ 9.71 Effluent generated from Utilities and Washing section shall be mixed with 0.5 KLD effluent generated from Domestic hence total 10.21 KLD treated into ETP [Primary] and after adequate treatment effluent sent to CMEE-BEIL.
 - ✓ Unit shall send waste water to Common MEE only after achieving inlet norms prescribed by GPCB ensuring content of effluent for COD so as not to get air borne during spray drying after APCM in order to achieve no adverse impacts on Environment and Human Health.
13. Domestic wastewater generation shall not exceed 0.5 KL/Day for proposed project, and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
14. Unit shall provide ETP with adequate capacity.
15. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

16. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
17. Proper logbooks of ETP, reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

18. Unit shall not exceed fuel consumption for Steam Boiler, HAG, TFH and D G Set as per the point no. E-2 as mentioned above.
19. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
20. Unit shall provide adequate APCM with process gas generation sources as the point no. E-3 as mentioned above.
21. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
- Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
 - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
 - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
22. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
23. For control of fugitive emission, VOCs, following steps shall be followed :
- ✓ Closed handling and charging system shall be provided for chemicals.
 - ✓ Reflux condenser shall be provided over Reactors / Vessels.
 - ✓ Pumps shall be provided with mechanical seals to prevent leakages.
 - ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.
24. Solvent management shall be carried out as follows:
- ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
 - ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
 - ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
 - ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum

solvent recovery.

- ✓ Solvents shall be stored in a separate space specified with all safety measures.
- ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
- ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.

25. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, HCl, Br₂, HCl, NH₃, HBr and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

26. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
27. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
28. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
29. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
30. 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

31. The PP shall develop green **belt [513 m² (33%) inside plant premises]** as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

32. The project proponent shall carry out the entire activities [Rain water harvesting system at Gram panchayat] proposed under CER shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
33. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and

spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

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

09	SIA/GJ/IND2/246180/2021	M/s. Nigam Industries Plot No. 5059,5060& 5064, IDC Ankleshwar, Bharuch, Gujarat 393002.	EC
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Category of the unit: **5 (f)**

Project status: **Expansion**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.10. Type of application:	EC-Expansion
1.11. Proposal no.	SIA/GJ/IND2/246180/2021
1.12. Category of Project :	5 (f) – B2
1.13. Date of application :	24.01.2022

1.14. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.15. TOR No. &Date :	Not applicable as project is categorized as B2
1.16. Technical expert / Environmental Consultant :	M/s. Jyoti Om Chemical Research Centre Pvt. Ltd.
1.17. SEAC Meeting No. and Date:	381 st meeting dated 15.03.2022
1.18. Compliance of Existing EC & CCA	No earlier EC. Consent order no.: AWH-44460, Date of Validity: 30/09/2030 Existing Products dropped from this EC. Self-compliance report submitted with application.

- 2) This is an expansion project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

Product Table

Sr. No.	Name of products	CAS No	Exiting Quantity MT/Month as per CCA-AWH-44460	Proposed Quantity MT/Month	Total Quantity MT/Month	End Uses
1	DDVP 76.5%EC	---	195	-195	0	---
2	FENVALERATE 20.25% EC	---	95	-95	0	---
3	CYPERMETHRIN E 10.15% EC	---	93	-93	0	---
4	2-4-D ETIYL ESTER 38% EC	---	51.25	-51.25	0	---
5	METHYL PARTHEON 50.5% EC	---	54	-54	0	---
6	HEXACONAZOLE 5% EC	---	45	-45	0	---
7	PROFENOFOS 50.5% EC	---	56.25	-56.25	0	---
8	CHLOROPYRIPHOS 40.5% EC	---	96	-96	0	---
9	CHIOROPYRIPHOS 48.5% EC	---	108	-108	0	---
10	PRITILS CHLOR 48,5% EC	---	50	-50	0	---
11	LIMDA CYHAIOTHIN 5% EC	---	100	-100	0	---
12	LIMDA CYHALOTHIN 2.5% EC	---	100	-100	0	---
13	ALPHA METHERINE 10% EC	---	92	-92	0	---
14	BUTACHLOR 50% EC	---	100	-100	0	---
15	TRIAZOPHOS 40% EC	---	100	-100	0	---
16	MONOCROTOPHOS 36%EC	---	200	-200	0	---

17	IMEDATCHLOPRIDE 17.8% EC	---	53.7	-53.7	0	---
18	GLYOHOSATE 41%SL	---	105	-105	0	---
19	ACEPHATE 75% SP	---	150	-150	0	---
20	ACETAMIPRIDE 20%	---	20	-20	0	---
21	MANCOZED 75 %WP	---	250	-250	0	---
22	SULPHAR 85% DP	---	200	-200	0	---
23	METHYLE PARATHION 2%DP	---	200	-200	0	---
24	SULPHAR 80% WDC	---	200	-200	0	---
25	SULPHAR 40% HC	---	100	-100	0	---
26	CARTAP HYDROCHLORIDE 4% GR	---	300	-300	0	---
27	NITRO BENZENE 20%W/W	---	20	-20	0	---
28	METRIBUZIN 70% DP	---	20	-20	0	---
29	CLOROPYRIPHOS 50% + CYPERMETHERINE EC	---	108	-108	0	---
30	TRICYCLOZIL 75% WP	---	20	-20	0	---
31	CHLOROPYRIPHOS 20% EC	---	96	-96	0	---
32	CYPERMETHRINE 25%EC	---	96.5	-96.5	0	---
33	QUNOLPHOS 25% EC	---	96.5	-96.5	0	---
34	TRICYLAZOLE 75% WP	---	45.3	-45.3	0	---
GROUP-A PIPERAZINE GROUP (TOTAL 50 MT/MONTH)						
1.	Piperazine Citrate AND/OR	144-29-6	--	50	50	Anthelmintic
2.	PiperazineAdipate AND/OR	142-88-1				Anthelmintic
3.	PiperazineHexahydrate AND/OR	142-63-2				Anthelmintic
4.	Piperazine Phosphate AND/OR	18534-18-4				Anthelmintic
5.	PiperazineDihydrochloride	142-64-3				Anthelmintic
GROUP-B MISCELLANEOUS GROUP (TOTAL 75 MT/MONTH)						
6.	ChlorohexadineHCl	3697-42-5	--	75	75	Anti-Bacterial
7.	Chlorohexadine Acetate	56-95-1	--			Anti-Bacterial
8.	ChlorohexadineGluconate	18472-51-0	--			Anti-Bacterial
9.	Cetrimide Solution 40 %	1119-97-7	--			Anti-Bacterial
10.	Glycine	56-40-6	--			Glycine is used for treating schizophrenia, stroke, benign prostatic hyperplasia (BPH, and some rare inherited metabolic disorders)
GROUP-C API & ITS INTERMEDIATES (TOTAL 50 MT/MONTH)						
11.	Losartan Potassium &	124750-	--	50	50	Anti-

	Intermediates AND/OR	99-8				hypertensive
	4-[[2-butyl-4chloro-5-(hydroxymethyl)-1H-imidazol-1-yl]methyl]biphenyl-2-carbonitrile (Stage – A)	114772-55-3				
	2-n-butyl-4-chloro-5hydroxymethyl-1-[[2''-(1H-tetrazole-5-yl)-biphenyl-4-yl]methyl]imidazole (Stage – B)	124751-00-4				
	2-n-butyl-4-chloro-5hydroxymethyl-1-[[2''-(1H-tetrazole-5-yl)-biphenyl-4-yl]methyl]imidazole potassium (Stage – Final)	124750-99-8				
	Metoprolol Tartrate & Intermediates AND/OR	37350-58-6				
12.	(2-[[4-(2-methoxyethyl)phenoxy]oxirane) (Stage – A)	56718-70-8				
	(1-[4-2-methoxyethyl)phenoxy]-3-(propane-2-ylamino)propan-2ol) (Stage – B)	51384-51-1				
	(±)1-(Isopropylamino)-3-[p-(β-methoxyethyl)phenoxy]-2-propanol (+)-tartrate salt,	37350-58-6				
	Metoprolol Succinate & Intermediates AND/OR	98418-47-4				
13.	(2-[[4-(2-methoxyethyl)phenoxy]oxirane) (Stage – A)	56718-70-8				
	(1-[4-2-methoxyethyl)phenoxy]-3-(propane-2-ylamino)propan-2ol) (Stage – B)	51384-51-1				
	1-[4-(2-methoxyethyl)phenoxy]-3-[(1-methylethyl)amino]-2-propanol succinate,	98418-47-4				
	Telmisartan & Intermediates AND/OR	144701-48-4				
14.	4'-methylbiphenyl – 2-carbonitrile (Stage – A)	114772-53-1				
	4-Bromomethyl 2-cyano biphenyl (Stage – B)	114772-54-2				
	4'-[[4-methyl-6-(1-methyl-1H-benzimidazol-2-yl)-2-propyl-1H-benzimidazol-1-yl]biphenyl-2-carbonitrile.(Stage – C)	144702-27-2				
	4'-[[4-Methyl-6-(1-methyl-2-benzimidazole)-2-propyl-1-benzimidazol-1-yl] methyl]	144701-48-4				

	biphenyl-2-carboxylic acid. (Stage - Final)				
15.	Bosentan Monohydrate & Intermediates AND/OR	157212-54-2			
	4,6 dihydroxy-5-(2-methoxy phenoxy)-2,2'-bipyridine(Stage – A)	329923-15-1			
	4, 6 dichloro-5-(2-methoxy phenoxy)-2,2'-bipyridine (Stage – B)	150728-13-5			
	P-t-butyl-N-(6-chloro-5-(o-methoxyphenoxy)-4-pyrimidinyl) benzene sulphonamide (Stage – C)	150727-06-3			
	4-tert-butyl-N-(6-(2-hydroxy ethoxy)-5-(2-methoxy-phenoxy)-[2,2']-bipyrimidin-4-yl)-benzene sulphonamide (Stage – D)	147536-97-8			
	4-tert-butyl-N-(6-(2-hydroxy ethoxy)-5-(2-methoxy-phenoxy)-[2,2']-bipyrimidin-4-yl)-benzene sulphonamide Monohydrate (Stage – Final)	157212-55-0			
16.	Nebivolol& Intermediates	99200-09-6			Anti-hypertensive
	1-(6-fluoro-3,4-dihydro-2H-chromen-2-yl)-2-[[2-(6-fluoro-3,4-dihydro-2H-chromen-2-yl)-2-hydroxyethyl]amino]ethanol;hydrochloride (Stage – Final)	169293-50-9			
	[2-(6-fluoro-3,4-dihydro-2H-chromen-2-yl)ethyl acetate] (NV -2A)	129101-36-6			
	[2-(6-fluoro-3,4-dihydro-2H-chromen-2-yl)-2-[(4-methylphenyl)sulfonyl]oxy]ethyl acetate] (NV -2B)	1345202-53-0			
	[6-fluoro-2-(oxiran-2-yl)-3,4-dihydro-2H-chromene](NV-2C)	99199-90-3			
17.	Pentoxifyline (Final Stage)	6493-05-6			Anti-hypertensive
	3,7-Dihydro-3,7-dimethyl-1-(5-oxohexyl)-1H-purine-2,6-dione(stage – Final)	6493-05-6			
18.	Paroxetine HCl & Intermediates	78246-49-8			Anti depressant
	(3S)-4-(4-fluorophenyl)-1-methylpiperidin-3-yl]-methyl 4-methylbenzenesulfonate (stage - A)	317323-77-6			
	(3S,4R)-3-[(1,3-benzodioxol-	110429-			

	5-yloxy)methyl]-4-(4-fluorophenyl)-1-methylpiperidine(Stage – B)	36-2				
	(3S-trans)-3-[(1,3-Benzodioxol-5-yloxy)methyl]-4-(4-fluorophenyl)piperidine Hydrochloride(Stage – Final)	78246-49-8				
	Topiramate& Intermediates	97240-79-4				Anti viral
	2,3:4,5-bis-O-(1-isopropylidene)-β-D-fructopyranose(Stage - A)	20880-92-6				
19.	3:4,5-Bis-O-(1-methylethylidene)- β -D-fructopyranosesulfamate (Stage – B)	97240-79-4				
	3:4,5-Bis-O-(1-methylethylidene)- β -D-fructopyranosesulfamate (Stage – Final)	97240-79-4				
	Granisetron	109889-09-0				Antiemetic
20.	1-Methyl-N-(1S)-9-methylbicyclo(3.3.1)non-3-yl]-1H-indazole-3-carboxamide HCl (Stage – Final)	107007-99-8				
	Granisetrone Base	109889-09-0				
21.	1-Methyl-N-(1S)-9-methylbicyclo(3.3.1)non-3-yl]-1H-indazole-3-carboxamide Base (Stage – Final)	109889-09-0				
	Repaglinide& Intermediates	135062-02-1				Hypoglycemic
	((S)-3-Methyl-1-[(2-(1-piperidinyl)phenyl]butylamine))(Stage – A)	147769-93-5				
22.	((S)-2-Ethoxy-4-[2-[[3-methyl-1-[(2-(1-piperidinyl)phenyl]butyl]amino]-2-oxoethyl benzoic acid ethyl ester) (Stage – B)	147770-06-7				
	((S)-2-Ethoxy-4-[2-[[1S)-3-methyl-1-[(2-(1-piperidin-1-yl)phenyl]butyl]amino]-2-oxoethyl] benzoic acid) (Stage – C)	135969-54-9				
	((S)-2-Ethoxy-4-[2-[[1S)-3-methyl-1-[(2-(1-piperidin-1-	135969-54-9				

	yl)phenyl]butyl]amino]-2-oxoethyl] benzoic acid) (Stage – Final)				
23.	Riluzole & Intermediates	1744-22-5			Anti-depressant
	6-(Trifluoromethoxy)-2-Benzothiazoleamine (Stage – Final)	777-12-8			
24.	Sevelamer Carbonate & Intermediates	845273-93-0			Xphoshate binding (kindneydeasise)
	Polly Allylamine Hydrochloride (Stage – A)	71550-12-4			
	2-(chloromethyl)oxirane;prop-2-en-1-amine;hydrochloride(Stage – B)	152751-57-0			
	carbonic acid;2-(chloromethyl)oxirane;prop-2-en-1-amine (Stage – Final)	845273-93-0			
25.	ColesevelamHCl& Intermediates	182815-44-7			Antihyperlipidemic
	Polly Allylamine Hydrochloride (Stage – A)	71550-12-4			
	2-(chloromethyl)oxirane;prop-2-en-1-amine;hydrochloride(Stage – B)	152751-57-0			
	CosevelamerHCl (Stage – Final)	182815-44-7			
26.	Desloratidine	100643-71-8			Antihistamine
27.	Levocetirizine dihydrochloride & Intermediates	130018-77-8			
	(R)-2-[2-[4-[(4-chlorophenyl)phenylmethyl]piperazine-1-yl]ethoxy]acetamide dihydrochloride(Stage – A)	130018-87-0			
	(R)-2-[2-[4-[(4-chlorophenyl)phenylmethyl]piperazine-1-yl]ethoxy]acetamide dihydrochloride(Levocetirizine Final)	130018-87-0			
28.	Zonisamide& Intermediates	68291-97-4			Anticonvulsant
	1, 2-Benzisoxazole -3-methane sulfonyl chloride (Stage – A)	73101-65-2			
	1, 2-Benzisoxazole -3-	68291-97-			

	methane sulfonamide(Stage – Final)	4				
29.	Lacosamide& Intermediates	175481-36-4				
	(R)-N-Boc-D- serine (Stage – A)	6368-20-3				
	Boc-D-Serine Benzylamide (Stage – B)	1253790-58-7				
	(R)-N-Benzyl-2-N-Bocamino-3-methoxy propionamide(Stage – C)	880468-89-3				
	(R)-2-Amino-N-Benzyl-3-methoxy-propionamide(Stage – D)	196601-69-1				
	Lacosamide (Stage – Final)	175481-36-4				
30.	Oxcarbazepine& Intermediates	28721-07-5				
	10-oxo-10,11-dihydro-5H-dibenzo[b,f]azepine-5-carboxamide (Stage –A)	28721-07-5				
	10-oxo-10,11-dihydro-5H-dibenzo[b,f]azepine-5-carboxamide (Stage –Final)	28721-07-5				
31.	Deferasirox& Intermediates	201530-41-8				Antidotes
	2-(2-(2-hydroxyphenyl)Benz(e)[1,3]oxazine -4-0ne(Stage – A)	1218-69-5				
	4-[3,5-Bis(2-hydroxyphenyl)-1H-1,24-triazole-1-yl benzoic acid (Stage –B)	201530-41-8				
	4-[3,5-Bis(2-hydroxyphenyl)-1H-1,24-triazole-1-yl benzoic acid (Stage –Final)	201530-41-8				
32.	Esomeprazole Magnassium& Intermediates	161973-10-0				Peptic ulcer diseases
	5-Methoxy-2-(4-methoxy-3,5-dimethylpyridine-2-yl-methylthio)1H-benzimidazole(Stage – A)	113713-24-9				
	methoxy -2-((S)-[(4-methoxy-3,5-dimethyl pyridine -2-yl)methyl sulfinyl] 1H – benzimidazole magnesium, trihydrate(Stage- Final)	217087-09-7				
33.	Pentaprazole sodium & Intermediates	138786-67-1				
	(RS)-6-(Difluoromethoxy)-2-[(3,4-dimethoxypyridin-2-yl)methylsulfinyl]-1H-benzo[d]imidazole(Stage – A)	102625-64-9				

	(RS)-6-(Difluoromethoxy)-2-[(3,4-dimethoxypyridin-2-yl)methylsulfinyl]-1H-benzo[d]imidazole(Stage – Final)	164579-32-2				
34.	Lercadipine Hydrochloride & Intermediates	132866-11-6				Peptic ulcer diseases
	5-Methoxycarbonyl-2,6-Dimethyl-4-(3-Nitrophenyl)-1,4-Dihydrpyridine-3-Carboxylic Acid(Stage – B)	74936-72-4				
	1,4-Dihydro-2,6-dimethyl-4-(3-nitrophenyl)-2-[(3,3-diphenylpropyl)methylamino]-1,1-dimethylethyl methyl ester 3,5-pyridinedicarboxylic acid hydrochloride(Stage – C)	132866-11-6				
35.	Rosuvastatin Calcium & Intermediates	287714-41-4				Peptic ulcer diseases
	(+)-(3r, 5s)-7-[4-(4-Fluorophenyl)-6-Isopropyl-2-(N-Methyl-N-Methanesulfonylamino)Pyrimidin-5-Yl]-(3, 5)-Dihydroxy-6(E)-Heptenoate, Tert-Butyl Rosuvastatin	147098-18-8				
	(+)-(3R,5S)-7-[4-(4-fluorophenyl)-6-isopropyl-2-(N-methyl-N-methanesulfonyl amino)pyrimidin-5-yl]3,5-dihydroxy-6(E)-heptenoic acid calcium salt (Stage – Final)	147098-20-2				
36.	Atorvastatin & Intermediates	134523-00-5				
	(4R,6R)-tert-Butyl-6-(2-aminoethyl)-2,2-dimethyl-1,3-dioxane-4-acetate	125995-13-3				
	tert-Butyl (4R,6R)-2-[[[6-(2-4-fluorophenyl)-5-isopropyl-3-phenyl-4-(phenylcarbamoyl)pyrrol-1-yl]ethyl]-2,2-dimethyl-1,3-dioxan-4-yl]acetate	125971-95-1				
	[R-(R*, R*)]-2-(4-fluorophenyl)-β, δ-dihydroxy-5-(1-methylethyl)-3-phenyl-4-[(phenylamino)carbonyl]-1Hpyrrole-1-heptanoic acid, calcium salt (2:1)trihydrate.	134523-03-8				
37.	Sitagliptin Phosphate & Intermediates	654671-78-0				Antidiabetic
	(Z)-3-[[[(1R)-1-	---				

	phenylethyl)amino]-4-(2,4,5-trifluorophenyl)but-2-enoic acid(Stage – D)				
	(2z)-3-(((1r)-1-phenylethyl)amino)-1-[3-(trifluoromethyl)-5,6-dihydro[1,2,4]triazolo[4,3-a]pyrazin-7(8h)-yl]-4-(2,4,5-trifluorophenyl)-2-butan-1-one(Stage – E)	1169707-29-2			
	(3R)-3-amino-1-[3-(trifluoromethyl)-6,8-dihydro-5H-[1,2,4]triazolo[4,3-a]pyrazin-7-yl]-4-(2,4,5-trifluorophenyl)butan-1-one;phosphoric acid;hydrate(Stage – Final)	654671-77-9			
38.	Canagliflozin	928672-86-0			Antidiabetic
	Glimipiride&Intermediates	1572583-29-9			
39.	N-{2-[4-(aminosulfonyl)phenyl]ethyl}-3-ethyl-4-methyl-2-oxo-2,5-dihydro-1H-pyrrole-1-carboxamide (Stage – B)	119018-29-0			
	3-ethyl-4-methyl-N-{2-[4-(((4-methylcyclohexyl)carbamoyl)aminosulfonyl)phenyl]ethyl}-2-oxo-2,5-dihydro-1H-pyrrole-1-carboxamide(Stage – Final)	93479-97-1			
	Adapelene& Intermediates	106685-40-9			Antidiabetic
	2-(1-admantyl)-4-bromophenol(Stage – A)	104224-68-2			
40.	3-(5-bromo-2-methoxyphenyl) tricycle [4.3.1.0] decane(Stage – B)	104224-63-7			
	Methyl 6-[3-(1-adamantyl)-4-methoxyphenyl]-2-naphthoate (Stage – C)	106685-41-0			
	6-(4-methoxy-3-tricyclo [3.3.1.1] dec-1-yl phenyl) naphthalene-2-carboxylic acid(Stage – D)	106685-40-9			
	Etoricoxib& Intermediates	202409-33-4			
41.	1-(6-Methyl-3-pyridinyl)-2-(4-methyl sulfonyl)phenyl-ethanone(Ketosulphone, stage – A)	221615-75-4			Analgesic(painrelieving), anti-inflammatory and antipyretic (fever reducing)
	5-chloro-6'-methyl-3-[4-	202409-			

	(methylsulfonyl)phenyl]-2,3'-bipyridine (Stage – Final)	33-4			
42.	Lornoxicam & Intermediates	70374-39-9			
	6-chloro-4-hydroxy-3-Methoxycarbonyl-2H-Thieno[2,3,e]-1,2-Thiazine-1,1-Dioxide(Stage –A)	70374-51-5			
	6-chloro-4-hydroxy-2-methyl-3-Methoxycarbonyl-2H-Thieno[2,3,e]-1,2-Thiazine-1,1-Dioxide(Stage – B)	70415-50-8			
	6-chloro-4-hydroxy-2-methyl-N-(2-pyridinyl)-2H-thieno[2,3,e]-1,2-Thiazine-3-carboxamide- 1,1-dioxide(Stage – C)	70374-39-9			
43.	Maloxicam & Intermediates	71125-38-7			
	methyl (1,1-dioxido-3-oxo-1,2-benzothiazol-2(3H)-yl)acetate(Stage – A)	6639-62-9			
	methyl 4-hydroxy-2-methyl-2H-1,2-benzothiazine-3-carboxylate 1,1-dioxide (stage-B)	35511-15-0			
	4-hydroxy-2-methyl-N-(5-methyl-1,3-thiazol-2-yl)-2H-1,2-benzothiazine-3-carboxamide 1,1-dioxide (Stage-C)	1027136-06-6; 71125-38-7			
	4-hydroxy-2-methyl-N-(5-methyl-1,3-thiazol-2-yl)-2H-1,2-benzothiazine-3-carboxamide 1,1-dioxide (Stage-Final)	1027136-06-6; 71125-38-7			
44.	Fluconazole & Intermediates	86386-73-4			
	2-(2, 4-difluorophenyl)-1, 3-bis (1H-1, 2,4-triazol-1-yl)-propan-2-ol.(Stage – A)	89429-59-4			
	2-(2, 4-difluorophenyl)-1, 3-bis (1H-1, 2,4-triazol-1-yl)-propan-2-ol.(Stage – Final)	89429-59-4			
45.	Sertaconazole & Intermediates	99592-32-2			
	(RS)-1-[2-[(7-chloro-1-benzothiophen-3-yl)methoxy]-2-(2,4,-dichlorophenyl) ethyl]-1H-imidazole(Stage – A)	99592-32-2			
	1-[2-[(7-chloro-1-benzothiophen-3-yl)methoxy]-2-(2,4-	99592-39-9			

	dichlorophenyl)ethyl]imidazole;nitric acid(stage – Final)					
46.	TerbinafineHCl& Intermediates	91161-71-6				
	trans-N-(6,6-Dimethyl-2-hepten-4-yl)-N-methyl-1-naphthylmethylamine (stage – A)	91161-71-6				
47.	Pregabalone& Intermediates	148553-50-8				(Used to treat epilepsy, neuropathic pain, fibromyalgia, and generalized anxiety disorder)
	(3-(2-amino-2-oxoethyl)-5-methylhexanoic acid(Stage – A)	181289-15-6				
	(3R)-3-(2-amino-2-oxoethyl)-5-methylhexanoic acid(Stage – B)	181289-33-8				
	(3S)-3-(aminomethyl)-5-methylhexanoic acid(Stage – C)	148553-50-8				
	(3S)-3-(aminomethyl)-5-methylhexanoic acid(Stage – Final)	148553-50-8				
48.	Olmesartanmedoxomil& Intermediates	144689-63-4				Anti hypertensive
	Ethyl-4(1-hydroxy-1-methylethyl)-2-propyl-1-{4-[2-(trityl tetrazol-5-yl)-phenyl] phenyl} methyl imidazole-5-carboxylate.(Stage – A)	189400 – 21 - 3				
	1H-Imidazole-5-carboxylicacid,4-(1-hydroxy-1-methyl ethyl)-2-propyl -1-[2'-[1-(triphenylmethyl)-1-H-tetrazole-5-yl][1,1'-biphenyl]-4-yl]methyl)-(5-methyl-2-oxo-1,3-dioxol-4-yl)methyl ester.(Stage – C)	144690 – 92 - 6				
	4-(1-Hydroxy-1-methylethyl)-2-propyl-1-[[2'-(1H-tetrazole-5-yl)[1,1'-biphenyl]-4-yl]-methyl]-1H-imidazole-5-carboxylic acid (5-methyl-2-oxo-1, 3- dioxol-4-yl) methyl ester (Stage – D)	144689 – 63 - 4				
	4-(1-Hydroxy-1-methylethyl)-2-propyl-1-[[2'-(1H-tetrazole-5-yl)[1,1'-biphenyl]-4-yl]-methyl]-1H-imidazole-5-carboxylic acid (5-methyl-2-oxo-1, 3- dioxol-4-yl) methyl	144689 – 63 - 4				

	ester (Stage – Final)					
49.	Frucemide& Intermediates	54-31-9				
	4-Chloro-N-furfuryl-5-sulfamoylanthranilic acid, 5-(Aminosulfonyl)-4-chloro-2-([2-furanylmethyl]amino)benzoic acid	54-31-9				
50.	Phenyl ephrineHCl& Intermediates	61-76-7				Anti-alergatic
	2-bromo-1-(3-hydroxyphenyl)ethanone(Stage - A)	2491-37-4				
	2-[benzyl(methyl)amino]-1-(3-hydroxyphenyl)ethanone(stage – B)	56917-44-3				
	3-[1-hydroxy-2-(methylamino)ethyl]phenol(Stage – C)	1477-63-0				
	1R)-1-(3-Hydroxyphenyl)-2-(methylamino)ethanol hydrochloride(Stage – Final)	61-76-7				
51.	Vildagliptine& Intermediates	274901-16-5				Anti diabetic
	(2S)-1-(chloroacetyl)pyrrolidine-2-carboxamide(Stage – A)	214398-99-9				
	(2S)-1-(chloroacetyl)pyrrolidine-2-carbonitrile(Stage – B)	207557-35-5				
	(2S)-1-[[3-hydroxytricyclo[3.3.1.1 ^{3,7}]dec-1-yl]amino]acetyl]pyrrolidine-2-carbonitrile(Stage – C)	274901-16-5				
	(2S)-1-[[3-hydroxytricyclo[3.3.1.1 ^{3,7}]dec-1-yl]amino]acetyl]pyrrolidine-2-carbonitrile(Stage – Final)	274901-16-5				
52.	Luliconazole	187164-19-8				Antifungal
	1H-imidazol-1-ylacetonitrile(Stage – A)	98873-55-3				
	(2E)-[(4R)-4-(2,4-dichlorophenyl)-1,3-dithiolan-2-ylidene](1H-imidazol-1-yl)ethanenitrile HCl(stage – B)	187164-19-8				
	(2E)-[(4R)-4-(2,4-dichlorophenyl)-1,3-dithiolan-2-ylidene](1H-imidazol-1-yl)ethanenitrile(Stage – C)	187164-19-8				
	(2E)-[(4R)-4-(2,4-dichlorophenyl)-1,3-dithiolan-	187164-19-8				

	2-ylidene](1 <i>H</i> -imidazol-1-yl)ethanenitrile(Stage – Final)				
53.	Atovaquone & Intermediates	95233-18-4			Antimalarial
	2-chloro-3-[<i>trans</i> -4-(4-chlorophenyl)cyclohexyl]naphthalene-1,4-dione(Stage – A)	153977-22-1			
	2-[<i>trans</i> -4-(4-chlorophenyl)cyclohexyl]-3-hydroxynaphthalene-1,4-dione(Stage – B)	95233-18-4			
	2-[<i>trans</i> -4-(4-chlorophenyl)cyclohexyl]-3-hydroxynaphthalene-1,4-dione(Stage – Final)	95233-18-4			
54.	Linagliptine & Intermediates	668270-12-0			Anti-diabetic
	8-Bromo-7-(but-2-yn-1-yl)-3-methyl-3,7-dihydro-1 <i>H</i> -purine-2,6-dione (Stage –A)	666816-98-4			
	(2-(Chloromethyl)-4-methylquinazoline) (Stage-B)	109113-72-6			
	(5-methyl-2-[(3 <i>R</i>)-piperidin-3yl]-1 <i>H</i> -isoindole-1,3(2 <i>H</i>)-dione) (Stage-D)	4667-76-9			
	(8-bromo-7-(But-2-yn-1-yl)-3-methyl-1-[(4-methylquinazolin-2-yl)methyl]-3,7 dihydro-1 <i>H</i> -purine-2,6-dione) (Stage-E)	853029-57-9			
55.	Hydroxychloroquine & Intermediates	118-42-3			Antimalarial
	4,7-dichloro quinoline(Stage –A)	86-98-6			
	Hydroxynovaldiamine (Stage – B)	69559-11-1			
	Ethanol, 2-[[4-[(7-chloro-4-quinolinyl)amino]pentyl]ethylamino (Stage – Final)	118-42-3			
56.	Albendazole & Intermediates	54965-21-8			Anthelmintic
	2-Nitro-p-thiocyananiline(Stage – A)	54029-45-7			
	4-propylthio-o-phenylenediamine(Stage – B)	66608-52-4			
	5-Propyl thiobenzamidazolcarbamate(Crude)	54965-21-8			
	5-Propyl thiobenzamidazolcarbamate (Stage – Final)	54965-21-8			
57.	Mebendazol &	31431-39-			Anthelmintic

	Intermediates	7				
	Stage – A :- 4-chloro-3-nitro Benzophenone	56107-02-9				
	Stage – B :- 3,4-Diaminobenzophenone) (DABP)	39070-63-8				
	Stage – C :- Methyl 6-benzoyl-1 <i>H</i> -benzimidazol-2-yl) carbamate (Crude)	31431-39-7				
	Stage – Final :- (Mebendazol)	31431-39-7				
58.	Febendazol & Intermediates	43210-67-9				Anthelmintic
	(Methyl [6-(phenylsulfanyl)-1 <i>H</i> -benzimidazol-2-yl] Carbamate) Crude (Stage – A)	43210-67-9				
	Febendazol (Stage – Final)	43210-67-9				
59.	Amiodarone & Intermediates	19774-82-4				Antiarrhythmic
	(2-butyl-1-benzofuran-3-yl)(4-hydroxyphenyl)methanone(stage – A)	141645-16-1				
	(2-butyl-1-benzofuran-3-yl)(4-hydroxy-3,5-diiodophenyl)methanone (stage – B)	1951-26-4				
	(2 <i>n</i> -butylbenzofuran-3-yl){4-[2-(diethylamino)ethoxy]-3,5-diiodophenyl}methanone hydrochloride (Stage – C)	19774-82-4				
	(2 <i>n</i> -butylbenzofuran-3-yl){4-[2-(diethylamino)ethoxy]-3,5-diiodophenyl}methanone hydrochloride(stage – Final)	19774-82-4				
60.	Aripiprazole & Intermediates	129722-12-9				Antipsychotic
	-(4-iodobutoxy)-3,4-dihydro-2(1 <i>H</i>)quinolinone	952308-47-3				
	7-{4-[4-(2,3-Dichlorophenyl)piperazin-1-yl]butoxy}-3,4-dihydroquinolin-2(1 <i>H</i>)-one (Technical)	129722-12-9				
	7-{4-[4-(2,3-Dichlorophenyl)piperazin-1-yl]butoxy}-3,4-dihydroquinolin-2(1 <i>H</i>)-one (Stage - Final)	129722-12-9				
61.	Azithromycine	83905-01-5				Antibiotic

62.	Bupropion HCl	31677-93-7				Antidepressant
63.	Duloxetine HCl & Intermediates	136434-34-9				Antidepressant
	(3-(dimethylamino)-1-thiophen-2-yl)propan-1-ol (Stage – A)	132335-44-5				
	(N,N-dimethyl-3-(naphthalen-1-yloxy)-3-(thiophen-2-yl)propane-1-amine) (Stage – C)	132335-47-8				
	(+)-(S)-N-Methyl-γ-(1-naphthyloxy)-2-thiophenepropylamine hydrochloride (Stage – D)	136434-34-9				
64.	Linezolid & Intermediates	165800-03-3				Antibiotic
	3- Fluoro-4- morpholinyl Nitro benzene (Stage – A)	93246-53-8				
	(S)-N—[[3-[3-fluoro-4-[4[morpholinyl]-1-phenyl]-1-2-oxo-5-Oxazolidinyl]methyl]phthalimide(Stage – C)	168828-89-5				
	N-[[[(5S)-3-[3-Fluoro-4-(4-morpholinyl)phenyl]-2-oxo-5-oxazolidinyl]methyl]-acetamide (Stage – D)	189038-36-6				
65.	Rivaroxaban & Intermediates	366789-02-8				Anticoagulant
	5-Chloro-N-(((5S)-2-oxo-3-[4-(3-oxo-4-morpholinyl)phenyl]-1,3-oxazolidin-5-yl)methyl)-2-thiophene-Carboxamide (Stage – A)	366789-02-8				
	5-Chloro-N-(((5S)-2-oxo-3-[4-(3-oxo-4-morpholinyl)phenyl]-1,3-oxazolidin-5-yl)methyl)-2-thiophene-Carboxamide (Stage – Final)	366789-02-8				
66.	Tenoxicam & Intermediates	59804-37-4				Antiinflammatory
	Methyl – 4 – Hydroxy – 2H – Thieno [2,3-e] – 1, 2 – Thiazine – 3 – Carboxylate - 1 , 1 Dioxide.(Stage – A)	98827-44-2				
	Methyl – 4 – Hydroxy – 2 Methyl – Thieno [2,3-e] – 1, 2 – Thiazine – 3 – Carboxylate - 1 , 1 Dioxide.(Stage – B)	868393-66-2				
	4-Hydroxy-2- methyl-N-2-	59804-37-				

	Pyridinyl-2H-thieno[2,3-e]-1,2-thiazine-3-carboxamide 1,1-dioxide (Stage – C)	4				
	(4-Hydroxy-2- methyl-N-2-Pyridinyl-2H-thieno[2,3-e]-1,2-thiazine-3-carboxamide 1,1-dioxide) (Stage – Final)	59804-37-4				
67.	RebePrazole Sodium & Intermediates	117976-90-6				Gastrointestinal
	4(3-methoxy propoxy)-2-hydroxy methyl -3-methyl pyridine hydrochloride (Stage – C)	118175-10-3				
	4-(3-methoxy-propoxy)-2-Chloromethyl -3-methyl-pyridine (Stage – D)	153259-31-5				
	2-[4-(3-Methoxy-propoxy)-3-methyl-pyridin-2-ylmethylsulfanyl]-1H-benzoimidazole (Stage – E)	117977-21-6				
68.	Cetirizine Dihydrochloride & Intermediate	83881-52-1				Anti allergic
	P-Chlorobenzhydrol (Stage – A)	119-56-2				
	P-ChloroBenzhydryl chloride (Stage – B)	134-83-8				
	4-Chlorobenzhydryl Piperazine (Stage – C)	303-26-4				
	4-Chlorobenzhydryl Piperazine ethanol (Stage – D)	164726-80-1				
	4-Chlorobenzhydryl Piperazine ethanol Duhydrochloride (Stage – Final)	83881-52-1				
69.	Mefenamic Acid & Intermediate	61-68-7				Anti-inflammatory
	(2-[(2,3-dimethylphenyl)amino]benzoic acid) Crude (Stage – A)	61-68-7				
	Mefenamic acid (Stage – Final)	61-68-7				
70.	Nimesulide & Intermediate	51803-78-2				Anti-inflammatory
	N-(4-nitro-2-phenoxyphenyl)methanesulfonamide Crude(Stage – A)	51803-78-2				
	Nimesulide (Stage – Final)	51803-78-2				
71.	Allopurinol & Intermediate	315-30-0				Anti uritic
	3-Morpholino-2-cyanoacrylamide (stage – A)	25229-97-4				
	3-Aminopyrazole-4-	27511-79-				

	carboxamide hemi-sulphate (stage- B)	1				
	4-Hydroxypyrazolo[3,4-d]pyrimidine Crude (Stage – C)	315-30-0				
	Allopurinol (Stage – Final)	315-30-0				
72.	Diclofenac Sodium	15307-86-5				Anti-Hypertensive
73.	Aceclofenac	89796-99-6				Anti-inflammatory
74.	Tranexamic acid & Intermediate	1197-18-8				Anti fibrinolytic
	4-cyano benzoic acid	619-65-8				
	4-(aminomethyl)benzoic acid	56-91-7				
75.	Entacapone & Intermediate	130929-57-6				Used to treat Parkinson's disease
	N-N- Di ethyl amino cyanoacetamide	2832-19-1				
76.	Glipizide & Intermediate	29094-61-9				Anti diabetic
	4-(2-amino ethyl)benzenesulfonamide	35303-76-5				
	5-methyl pyrazine-2-carboxylic acid	5521-55-1				
77.	Tramadol & Intermediate	70374-39-9				Anti-inflammatory
	Meta Bromo Nitro Benzene	585-79-5				
	6-Chloro-4-hydroxy-2-methyl-2H-thieno[2,3-e]-1,2-thiazine-3-carboxylic acid methyl ester 1,1-dioxide	70415-50-8				
78.	R & D Product	----	--	0.1	0.1	API & intermediate
TOTAL PRODUCTION			0	175.1	175.1	

- 3) 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.
- 4) The proposal was considered in the SEAC video conference meeting dated 15.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) There is no earlier EC. Unit is having Valid CCA of the Board for existing plant. PP submitted CC&A self-compliance report for existing plant. Compliance report found satisfactory. PP submitted that there is no legal court case and public complaint against unit.

- 8) Committee asked to submit the following:
- ✓ Unit shall submit the undertaking to remove the existing agro formulation production.
- 9) Later on PP submitted following details through email.
- ✓ Undertaking for discontinuing the existing products of M/s. Nigam Industries
- 10) Committee found presentation and submission of project proponent satisfactory.
- 11) 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
- 12) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 1223(E) dated 27.03.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.
- 13) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details														
A-1	Project cost															
Total cost of Proposed Project (Rs. in Crores):																
<table border="1"> <thead> <tr> <th style="text-align: center;">Existing</th> <th style="text-align: center;">Proposed</th> <th style="text-align: center;">Total</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.17 Crores</td> <td style="text-align: center;">7.83 Crores</td> <td style="text-align: center;">9.0 Crores</td> </tr> </tbody> </table>			Existing	Proposed	Total	1.17 Crores	7.83 Crores	9.0 Crores								
Existing	Proposed	Total														
1.17 Crores	7.83 Crores	9.0 Crores														
Break-up of proposed project Cost:																
<table border="1"> <thead> <tr> <th style="text-align: center;">Details</th> <th style="text-align: center;">Project Cost (Rs. In Crores)</th> </tr> </thead> <tbody> <tr> <td>Land</td> <td style="text-align: center;">1.10</td> </tr> <tr> <td>Building</td> <td style="text-align: center;">2.06</td> </tr> <tr> <td>Machinery</td> <td style="text-align: center;">3.05</td> </tr> <tr> <td>Env. & Safety</td> <td style="text-align: center;">1.62</td> </tr> <tr> <td>Miscellaneous</td> <td style="text-align: center;">0.00</td> </tr> <tr> <td>Total</td> <td style="text-align: center;">7.83</td> </tr> </tbody> </table>			Details	Project Cost (Rs. In Crores)	Land	1.10	Building	2.06	Machinery	3.05	Env. & Safety	1.62	Miscellaneous	0.00	Total	7.83
Details	Project Cost (Rs. In Crores)															
Land	1.10															
Building	2.06															
Machinery	3.05															
Env. & Safety	1.62															
Miscellaneous	0.00															
Total	7.83															
-																
A-2	Details of CER -															
PP shall carry out CER activities as below:																
<ul style="list-style-type: none"> ✓ Unit will provide Solar Panel facility at PHC Centre of kosamadi village. 																
B	Land / Plot ownership details:															
<p>Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/ANK/TRF/FTO/ANK1/1269 on dated 05/01/2021.</p> <p>The plot is on the name of Mr. K. P. Yadav, Mr. Rameshwar P Yadav & Mr. Ravindra P Yadav. They are the PP of M/s.NigamIndustires.</p>																

B-1 Plot area

Existing	Proposed	Total
3488 Sq. m.	0 Sq. m.	3384 Sq. m.

B-2 Area adequacy**Area adequacy**➤ **Production area**

- Total plot area of the unit is 3384 Sq.mt.
- Total production capacity will be 175.1 MT/Month.
- The unit is developed of manufacturing facilities of total area (Plant-1) 360Sq.mt., Plant – 2 (266 Sq.m), Plant-3 (240 Sq.m) (Existing + Proposed) on ground floor.
- Unit has allotted total 190 Sq. mt area for raw material & FG storage, 89.36 sq.marea for cylinder storage and 223.40 sq. mt. area for solvent storage.
- Total 220 Sq.mt& 160 Sq.mt area will be allotted for ETP & hazardous waste storage.
- Utility area will be 150 Sq.mt.
- Manufacturing facility will be G+2 facility.
- Goods Carrier Movement

Unit has proposed 5 m & 6 m wide road and two gates for easily Goods Carrier Movement.

Area Adequacy table:

BUILDINGAREASTATEMENT				
NO.	BLDG.NAME	G.F.	TOTAL AREA	% OFTOT ALLAN D
1	GREENBELT-1	86.70	86.70	2.56
2	GREENBELT-2	125.00	125.00	3.69
3	GREENBELT-3	225.00	225.00	6.65
4	GREENBELT-4	95.00	95.00	2.81
5	SECURITYCABIN	25.00	25.00	0.74
6	SOLVENTSTORAGEBLD G.	223.40	223.40	6.60
7	CYLINDERSTORAG E AREA	89.36	89.36	2.64
8	PLANT-2	266.00	266.00	7.86
9	R.M.STORAGEBLDG	190.00	190.00	5.61

	.			
10	HAZARDOUSWASTE STORAGEAREA	160.00	160.00	4.73
11	E.T.P.PLANT	220.00	220.00	6.50
12	UTILITYBLDG.	150.00	150.00	4.43
13	PLANT-1	360.00	360.00	10.64
14	PLANT-3	240.00	240.00	7.09
15	SOLVENTRECOVER Y PLANT	150.00	150.00	4.43
16	ADMINOFFICE	50.00	50.00	1.48
17	O.H.C.	25.00	25.00	0.74
18	U.G.WATERTANK	25.00	25.00	0.74
19	ROAD&OPENSAPCE	678.54	678.54	20.05
	TOTAL	3384.00	3384.00	100.00

➤ Hence, adequate area is available for proposed expansion 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	531.70 (In-house premises)	585.02 (Outside Premises)	1116.72
% of total area	15.71 (In-house premises)	17.29 (Outside Premises)	33

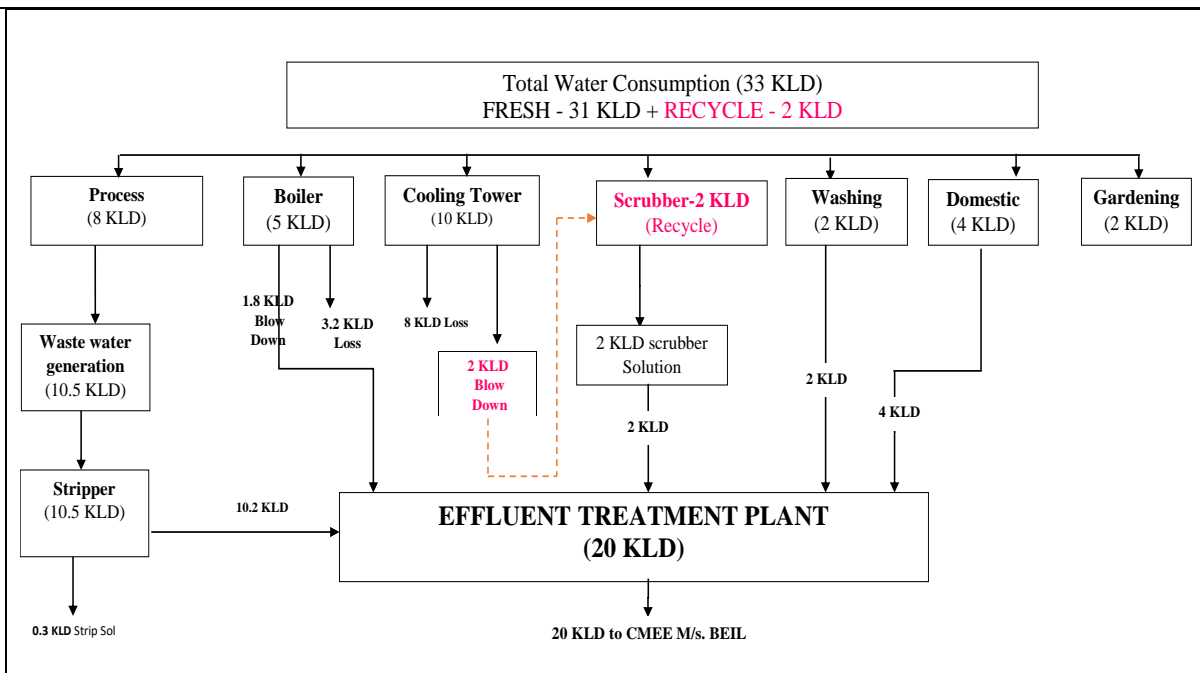
Comments:

The condition shall be given that -

- The PP shall develop green belt [531.70 m² (15.71%) inside plant premises + 585.02 m² (17.29%) outside plant premises through ankleshwar industrial association = Total: 1116.72 Sq. m. 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.					
C	Employment				
Employment generation					
	Existing	Proposed	Total		
	17	43	60		
D	WATER				
D-1	Source of Water Supply				
➤ GIDC Ankleshwar via letter dated No/DEE(WS)/227.					
Comments:					
➤ Prior permission from concerned authority shall be obtained for withdrawal of water.					
D-2	Water consumption (KLD)				
-					
Sr. No.	Particulars	Existing KLD (CCA: AWH-44460)	Reduction due to drop of existing products	Proposed Quantity KLD	Total Quantity KLD
1.	Domestic	1.5	-1.5	4	4
2.	Gardening	0	0	2	2
Industrial					
3.	Process	0	0	8	8
	Washing	0	0	2	2
	Boiler	0	0	5	5
	Cooling	0	0	10	10
	Scrubber	0	0	2	2
	Industrial Total	0	0	27	27
	Grand Total (1+2+3)	1.5	-1.5	33	33
-					
Comments:					
➤ The water consumption above is found to be calculated considering the worst case scenario and in any case the water requirement shall not exceed the same.					
D-3	Waste water generation (KLD)				
-					

SR. NO.	PARTICULARS	Existing KLD (CCA: AWH-44460)	Reduction due to drop of existing products	Proposed Quantity KLD	Total Quantity KLD
1.	Domestic	1.2	-1.2	4	4
2.	Industrial				
	Process	0	0	10.5	10.5
	Washing	0	0	2	2
	Boiler	0	0	1.8	1.8
	Cooling	0	0	2	2
	Scrubber	0	0	2	2
	Total Industrial	0	0	18.3	18.3
	TOTAL (Domestic + Industrial)	1.2	-1.2	22.3	22.3
Comments:					
➤ The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.					
D-4	Break-up of waste water disposal & facility (For Domestic)				
4 KLD Domestic Waste Water shall be treated in ETP & treated wastewater shall be sent to CMEE along with industrial effluent (16KLD).					
Comments:					
➤ Domestic wastewater generation shall not exceed 4 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.					
D-5a	Break-up of waste water disposal & facility (For Industrial)				
	Sr. no.	Quantity KLD	Facility		
	1	16.3	0.3 KLD Solvent removed through stripper and remaining 16 KLD subjected to ETP and send to CMEE along with domestic effluent		
	2	2	2 KLD Cooling tower blow down reused in scrubber		
	Total	18.3	Send to the CMEE		
Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)					
Membership certificate of M/s:BEIL-Ankleshwar vide no. Ref. BEIL/ANK/2021 dated 21.12.2021					
D-5b	Simplified water balance diagram				

**D-5c Summary**

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	33	--
Quantity to be recycled (B)	2	--
Total fresh water requirement (C)	31	--
Ensure Total water requirement = Fresh water + Recycled water i.e. A = B + C		

Comments:

29. Total water requirement for the project shall not exceed 33 KLD. Unit shall reuse 2 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 31 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.

30. Management of Industrial effluent shall be as under:

- ✓ Process effluent (10.5KLD) shall be passed from stripper and collect to ETP.0.3 KLD strip solvent generated from stripper shall be removed.
- ✓ Remaining 10.2 KLD process effluent along with 1.8 KLD boiler blow down, 2 KLD scrubber solution, 2 KLD washing and 4 KLD domestic effluent shall be subjected to CMEE.
- ✓ Total 20 KLD effluent shall be subjected to CMEE.
- ✓ Treated waste water shall be sent to CMEE only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.

31. Unit shall provide ETP with adequate capacity.
32. 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**

-

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)
AS PER EXISTING CCA- AWH – 44460						
There is no flue gas emission.						
AFTER PROPOSED EXPANSION						
01	Steam Boiler (2 TPH)	20	Natural Gas	140 Nm ³ /Hr.	PM SO ₂ NO _x	Adequate Stack Height
02	Thermic Fluid Heater 1 Nos. (2 Lack Kcal/hr)		Natural Gas	30 Nm ³ /Hr.		
03	DG Set 250 KVA	12	Diesel	25 Lit/ Hr.		Acoustic Enclosure

-

E-3 Process gas

-

Sr No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
AS PER EXISTING CCA- AWH – 44460				
There is no process gas emission.				
AFTER PROPOSED EXPANSION				
1	Reaction Vessels (Sulphonation, Nitration)	SO ₂ / NO _x	22	2 Stage Alkali Scrubber
2	Reaction Vessels (Chlorination)	HCl Cl ₂	22	2 Stage Alkali Scrubber
3	Reaction Vessels (Bromination)	HBr Br ₂	22	2 Stage Alkali Scrubber
4	Reaction Vessels (Amination)	Ammonia	22	2 Stage Acid Scrubber

-

E-4 Fugitive emission details with its mitigation measures.

- For Fugitive emission such as VOCs, VOC detectors will be installed.
- Leak Detection and Repair (LDAR) program shall be implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment.
- To control fugitive emission from process / reaction, all reactor condensers shall be connected to a scrubber to minimize loss of solvents / fugitive emission in to the atmosphere.

Comments for E2, E3 & E4:

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

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

Name of Product	Name of Solvent	Total Solvent Quantity MT/M	Fresh Solvent Quantity MT/M	Recovered solvent Quantity MT/M	% of Recovery	% loss in Air	% loss in Water	% loss in Hazardous waste	Total % Loss
Losartan Potassium	Dimethyl Acetamide	8.77	0.23	8.51	96	0.04	1.996	2	4
	Ethyl Acetate	28.38	1.15	27.63	96	0.02	0.998	3	4
	Toluene	31.1	0.88	30.22	97	0.02	1.998	1	3
Metoprolol Tartrate	Isopropyl alcohol	7.76	0.31	7.45	96	0.01	1.999	2	4
	Acetone	19.4	0.58	18.82	97	0.02	0.998	2	3
Metoprolol Succinate	Isopropyl alcohol	9.08	0.5	8.6	95	0.02	1.998	3	5
	Acetone	20.43	0.8	19.6	96	0.03	0.997	3	4
Telmisartan	Toluene	8.87	0.27	8.6	97	0.018	1.982	1	3
	MDC	18.282	0.73	17.55	96	0.02	0.998	3	4
	Ethyl acetate	26.27	0.53	25.74	98	0.03	0.997	1	2
	Methanol	34.3	1.37	32.98	96	0.0	1.9	2	4

		49				01	99		
Bosentan	Methanol	84.76	3.4	81.4	96	0.08	2.92	1	4
	Acetone	37.68	1.9	35.8	95	0.02	2.98	2	5
	MDC	121.6	4.9	116.7	96	0.07	2.93	1	4
	Toluene	15.48	0.9	14.6	95	0.012	2.418	2.5	5
	Ethylene glycol	48.62	2.4	46.2	95	0.03	1.997	3	5
	Tetrahydrof urane	40	2	38	95	0.03	2.997	2	5
	Isopropyl acetate	52.76	2.1	50.6	96	0.03	1.97	2	4
	Ethanol	29.82	0.9	28.9	97	0.03	0.97	2	3
Nebivolol	MDC	2.94	0.1	2.8	96	0.14	1.899	1.961	4
	DMSO	0.74	0	0.7	96	0.04	1.96	2	4
	Hexene	0.6	0	0.6	95	0.033	2.367	2.6	5
	Ethyl Acetate	6.07	0.2	5.9	97	0.01	1.999	1	3
	Methanol	7.58	0.3	7.3	96	0.12	1.899	1.981	4
	Acetonitrile	0.17	0	0.2	97	0.01	0.999	2	3
Pentoxifyline	Dimethyl formamide	2.91	0.1	2.8	96	0.02	0.998	4	4
	Methanol	2.9	0.1	2.8	96	0.04	1.996	2	4
ParoxetineHc I	Methylene chloride	3.47	0.2	3.3	95	0.04	1.996	3	5
	Triethylamine	0.27	0	0.3	96	0.02	0.998	3	4
	Toluene	10.69	0.3	10.4	97	0.02	1.98	1	3
	Isopropyl alcohol	6.04	0.2	5.9	97	0.022	0.978	2	3
	Dimethyl Sulfoxide	0.71	0	0.7	95	0.04	2.996	2	5
Topiramate	Acetone	10.68	0.3	10.4	97	0.04	1.996	1	3
	Toluene	103.47	4.1	99.3	96	0.03	1.997	2	4
	Hexane	34.67	1.4	33.3	96	0.01	1.999	2	4
	Isopropyl alcohol	3.73	0.1	3.6	97	0.04	0.996	2	3
	Methanol	4.11	0.2	3.9	95	0.011	2.289	2.7	5

	Ethyl acetate	53.26	2.7	50.6	95	0.001	1.999	3	5
	Cyclohexane	20.16	0.8	19.4	96	0.001	1.882	2.117	4
Graniserton	MDC	11	0.4	10.6	96	0.003	0.997	3	4
	Triethylamine	0.33	0	0.3	95	0.001	2.999	2	5
	Ethanol	5.77	0.3	5.5	95	0.021	2.079	2.9	5
Graniserton Base	Ethylacetate	5.36	0.3	5.1	95	0.002	1.998	3	5
Repaglinide	Toluene	4.48	0.2	4.3	96	0.002	1.88	2.118	4
	Petroleum ether	1.59	0	1.5	97	0.001	1.99	1	3
	Ethanol	0.16	0	0.2	97	0.009	0.991	2	3
Riluzole	Isopropyl alcohol	1.01	0	1	96	0.003	0.997	3	4
	Toluene	1.39	0	1.4	98	0.012	0.988	1	2
	Cyclohexane	0.77	0	0.7	96	0.008	2.92	1	4
Lithium Carbonate	Methanol	0.4	0	0.4	95	0.002	2.998	2	5
Sevelamer Carbonate	Methanol	77.04	1.5	75.5	98	0.002	0.998	1	2
	Ethyl acetate	4	0.1	3.9	97	0.003	1.997	1	3
	Iso Propyl Alcohol	59.04	3	56.1	95	0.012	2.418	2.5	5
Colesevelam Hydrochloride	Methanol	42.33	1.7	40.6	96	0.007	2.93	1	4
	Ethyl acetate	2.17	0.1	2.1	96	0.003	1.997	2	4
	Iso Propyl Alcohol	1.23	0	1.2	97	0.003	0.997	2	3
DESSLORATIDINE	Toluene	9.66	0.5	9.2	95	0.003	1.997	3	5
	Cyclohexane	3.3	0.1	3.2	98	0.033	0.967	1	2
	Methanol	0.2	0	0.2	96	0.104	1.899	1.981	4
Levocetizine Dihydrochloride	Dimethyl Formamide	1.69	0.1	1.6	97	0.015	1.985	1	3
	Ethyl Acetate	4.79	0.2	4.6	95	0.003	2.997	2	5
	Methylene chloride	3.54	0.2	3.4	95	0.033	2.367	2.6	5
Fluticasone Propionate	Tetrahydrofuran	0.53	0	0.5	96	0.004	1.96	2	4
	Acetone	0.54	0	0.5	97	0.000	0.9	2	3

						08	92		
	Triethylamine	0.1	0	0.1	95	0.004	1.996	3	5
	Methylene Chloride	3.39	0.1	3.3	96	0.12	1.899	1.981	4
	Toluene	0.56	0	0.5	96	0.004	1.996	2	4
.Zonisamide	Ethyl acetate	67.41	2	65.4	97	0.003	1.997	1	3
	Isopropyl alcohol	12.33	0.2	12.1	98	0.004	0.996	1	2
Lacosamide	Methylene chloride	85.13	2.6	82.6	97	0.002	0.998	2	3
	Dimethyl sulfate	1.45	0	1.4	97	0.002	1.998	1	3
	Methanol	0.97	0	0.9	96	0.002	0.998	3	4
Oxcarbazepine	Methanol	17.62	0.9	16.7	95	0.004	2.996	2	5
	Dimethyl formamide	7.62	0.3	7.3	96	0.008	2.992	1	4
	Toluene	14.54	0.4	14.1	97	0.003	0.997	2	3
Deferasirox	Dimethyl formamide	0.68	0	0.7	97	0.018	1.982	1	3
	Methanol	6.36	0.1	6.2	98	0.014	0.986	1	2
Esomeprazole Magnesium	Toluene	25.44	1	24.4	96	0.007	2.993	1	4
	Triethyl amine	0.1722	0	0.2	98	0.001	0.999	1	2
	Acetone	21.84	0.9	21	96	0.003	1.997	2	4
	Methanol	16.94	0.3	16.6	98	0.011	0.989	1	2
Pentaprazole	Isopropyl alcohol	1.39	0	1.4	97	0.008	0.992	2	3
	Methylene dichloride	2.81	0.1	2.7	97	0.015	1.985	1	3
	Acetone	2.9	0.1	2.8	96	0.001	1.999	2	4
	Cyclohexane	2.03	0.1	1.9	96	0.004	1.996	2	4
Lercadipine Hydrochloride	Tetrahydrofuran	7.9448	0.4	7.5	95	0.011	2.289	2.7	5
	Triethyl amine	0.2438	0	0.2	96	0.012	1.899	1.981	4
	Acetonitrile (for washing)	0.3078	0	0.3	97	0.003	0.997	2	3
Rosuvastatin Calcium	Methanol	50.4	1.5	48.9	97	0.004	0.996	2	3
	Ethyl Acetate	45.1	0.9	44.2	98	0.0	0.9	1	2

	e	2				12	88		
	Toluene	13.98	0.6	13.4	96	0.003	0.997	3	4
	Acetonitrile	47.88	1.9	46	96	0.002	1.88	2.118	4
Atorvastain	methanol	39.26	1.6	37.7	96	0.03	1.97	2	4
	methylenne chloride	11.27	0.6	10.7	95	0.001	2.999	2	5
	cyclohexane	20.56	0.6	19.9	97	0.001	1.999	1	3
	methyl tert butyl ether	21.99	0.7	21.3	97	0.004	0.996	2	3
Sitagliptin Phosphate	triethylamin e	0.62	0	0.6	96	0.14	1.899	1.981	4
	acetic acid	0.15	0	0.1	96	0.04	1.96	2	4
	methanol	1.33	0.1	1.3	95	0.001	0.999	1	2
	isopropyl alcohol	6.02	0.2	5.8	97	0.004	1.996	1	3
Canagliflozin	methanol	9.5	0.4	9.1	96	0.12	1.899	1.981	4
	Ethyl Acetate	12.77	0.3	12.5	98	0.003	0.997	1	2
	Methyl Tertiary Butyl Ether	2.67	0.1	2.5	95	0.021	2.079	2.9	5
	N-HEPTANE	17.97	0.7	17.2	96	0.004	1.996	2	4
	Methylene dichloride	10.97	0.3	10.6	97	0.001	0.999	2	3
Teniligliptine	Acetic Acid	0.15	0	0.1	96	0.08	2.92	1	4
	Isopropyl alcohol	#REF!	#REF!	#REF!	95	0.002	1.998	3	5
Glimipiride	Toluene	4.55	0.2	4.4	96	0.002	0.998	3	4
	Acetone	8.33	0.3	8	96	0.003	1.997	2	4
	Methanol	3.33	0.1	3.2	97	0.02	1.98	1	3
Adapalene	MDC	4.93	0.1	4.8	98	0.011	0.989	1	2
	Acetic Acid	0.27	0	0.3	96	0.003	1.997	2	4
	Hexane	0.1	0	0.1	95	0.002	2.998	2	5
	Ethyl acetate	0.33	0	0.3	96	0.001	1.882	2.117	4
	THF	0.33	0	0.3	97	0.009	0.991	2	3
Lornoxicam	Methanol	7.34	0.2	7.1	97	0.0	1.9	1	3

						1	9		
	Dimethyl Sulfate	0.13	0	0.1	98	0.033	0.967	1	2
	Acetone	0.78	0	0.7	95	0.012	2.418	2.5	5
	O-Xylene	28.61	0.6	28	98	0.004	0.996	1	2
	MDC	0.94	0	0.9	97	0.022	0.978	2	3
Maloxicam	DimethyleFo rmamide	13.81	0.4	13.4	97	0.03	0.97	2	3
	Dimethyl Sulfate	25.02	1	24	96	0.12	1.899	1.981	4
	Methanol	13.81	0.6	13.3	96	0.04	1.96	2	4
	Acetone	17.68	0.7	17	96	0.07	2.93	1	4
Fluconazole	Ethyl Acetate	12.66	0.6	12	95	0.033	2.367	2.6	5
	Methylen Dichloride	0.06	0	0.1	97	0.018	1.982	1	3
	Isopropyl Alcohol	0.19	0	0.2	97	0.002	0.998	2	3
	Acetone	1.76	0	1.7	98	0.001	0.999	1	2
	Methanol	0.19	0	0.2	96	0.04	1.96	2	4
Sertaconazol e	Toluene	17.46	0.7	16.8	96	0.003	1.997	2	4
	Methanol	12.76	0.4	12.4	97	0.002	1.998	1	3
	Acetone	29.8	0.6	29.2	98	0.002	0.998	1	2
TerbinafineH cl	Methylene dichloride	15.12	0.5	14.7	97	0.001	1.999	1	3
	Ethyle Acetate	19.58	0.6	19	97	0.001	0.999	2	3
Pregabelene	Toluene	5.52	0.1	5.4	98	0.011	0.989	1	2
	Iso Propyl Alcohol	4.14	0.2	3.9	95	0.004	1.996	3	5
Olmesartan	Ethyl ester	0.5	0	0.5	96	0.002	1.88	2.118	4
	Toluene	16	0.5	15.5	97	0.002	1.98	1	3
	Acetic acid	1	0	1	96	0.001	1.999	2	4
	Acetone	6	0.1	5.9	98	0.033	0.967	1	2
	Methyl ethyl ketone	0.015	0	0	95	0.004	2.996	2	5
Frucemide	ISOPROPA NOL	2.31	0.1	2.2	97	0.022	0.978	2	3

		ACETIC ACID	1.54	0	1.5	97	0.004	1.996	1	3
PhenylephrineHCl		Ethyl acetate	1.5	0.1	1.4	96	0.07	2.93	1	4
		Toluene	13	0.5	12.5	96	0.03	1.97	2	4
		Methanol	6	0.2	5.8	96	0.001	1.882	2.117	4
Vildagliptine		Acetonitrile	47.92	1	47	98	0.004	0.996	1	2
		Ethyl acetate	32.5	1	31.5	97	0.004	0.996	2	3
		Dimethylformamide	1.08	0	1	97	0.01	1.99	1	3
		Isopropyl alcohol	15.85	0.3	15.5	98	0.014	0.986	1	2
		Methyl tert butyl ether	9.38	0.4	9	96	0.003	0.997	3	4
Luliconazole		Ethyl acetate	181.04	5.4	175.6	97	0.009	0.991	2	3
		Methylene dichloride	143.71	4.3	139.4	97	0.003	1.997	1	3
		Dimethyl sulphoxide	43.95	0.9	43.1	98	0.001	0.999	1	2
		Methanol	377.35	15.1	362.3	96	0.007	2.93	1	4
		Acetonitrile	17.5	0.9	16.6	95	0.011	2.289	2.7	5
Atoaquone		Methylene dichloride	99.97	5	95	95	0.001	1.999	3	5
		ETHYL ACETATE	46.52	1.9	44.7	96	0.004	1.996	2	4
		TOLUENE	16.8	0.5	16.3	97	0.003	0.997	2	3
		Dimethylformamide	14.6	0.6	14	96	0.003	0.997	3	4
Linagliptine		Acetic acid	46.71	2.3	44.4	95	0.001	2.999	2	5
		Methanol	198.3	5.9	192.3	97	0.015	1.985	1	3
		MDC	218.22	4.4	213.9	98	0.011	0.989	1	2
		Hexane	15.16	0.3	14.9	98	0.003	0.997	1	2
		Acetone	142.5	5.7	136.8	96	0.002	0.998	3	4
		Ethanol	20.8	0.8	20	96	0.002	1.88	2.118	4
		TEA	1.25	0.1	1.2	95	0.021	2.079	2.9	5
		Ethyl acetate	21.5	0.9	20.6	96	0.003	1.997	2	4
		DMF	12	0.4	11.6	97	0.0	0.9	2	3

						08	92		
	Toluene	15.5	0.5	15	97	0.0 03	0.9 97	2	3
	IPA	23	0.9	22.1	96	0.0 01	1.8 82	2.117	4
Hydroxychloroquine	Ethylene glycol	9.25	0.5	8.8	95	0.0 02	2.9 98	2	5
	Cyclohexane	52.3 5	2.6	49.7	95	0.0 01	1.9 99	3	5
	Methanol	15.5 3	0.8	14.8	95	0.0 01	2.9 99	2	5
	Methylene dichloride	30.9	1.2	29.7	96	0.0 01	1.9 99	2	4
Albendazole	Methanol	40	1.6	38.4	96	0.0 8	2.9 2	1	4
	n-Propane	35	1.1	34	97	0.0 15	1.9 85	1	3
	Aceton	30	1.2	28.8	96	0.1 2	1.8 99	1.981	4
Mebendazol	Toluene	21.7 4	1.1	20.7	95	0.0 33	2.3 67	2.6	5
	Methanol	26.0 9	0.5	25.6	98	0.0 12	0.9 88	1	2
	DMS	32.6 1	1.3	31.3	96	0.0 7	2.9 3	1	4
	Acetone	21.7 4	0.7	21.1	97	0.0 01	0.9 99	2	3
Febendazol	Methanol	40.1 5	1.6	38.5	96	0.0 4	1.9 6	2	4
Amiodarone	Toluene	39.1 5	1.2	38	97	0.0 03	1.9 97	1	3
	DMF	0.09	0	0.1	98	0.0 02	0.9 98	1	2
	Isopropyl Alcohol	43.4 9	1.7	41.7	96	0.0 3	1.9 7	2	4
Aripiprazole	Acetonitrile	2.1	0.1	2	95	0.0 01	2.9 99	2	5
	N,N-dimethylformamide	1.7	0.1	1.6	95	0.0 02	1.9 98	3	5
Azithromycine	Acetic Acid	0.2	0	0.2	96	0.1 4	1.8 99	1.981	4
	Methanol	22.1	0.9	21.2	96	0.0 03	0.9 97	3	4
	Acetone	7.66	0.2	7.4	97	0.0 09	0.9 91	2	3
Bupropion HCl	MDC	4	0.1	3.9	98	0.0 33	0.9 67	1	2
	Ethyl acetate	2	0.1	1.9	97	0.0 04	0.9 96	2	3
	IPA	2	0.1	1.9	96	0.1 2	1.8 99	1.981	4
DuloxetineH	Methanol	1.5	0	1.5	98	0.0	0.9	1	2

Cl						04	96			
	DMSO	0.5	0	0.5	97	0.0 04	1.9 96	1	3	
	Ethyl a Acetate	1.5	0	1.5	97	0.0 04	0.9 96	2	3	
	Acetone	0.5	0	0.5	98	0.0 01	0.9 99	1	2	
	Linezolid	Ethyl acetate	4	0.2	3.8	95	0.0 21	2.0 79	2.9	5
		Methanol	14.2 6	0.6	13.7	96	0.0 02	1.8 8	2.118	4
		IPA	2	0.1	1.9	97	0.0 1	1.9 9	1	3
		DMF	1	0	1	98	0.0 14	0.9 86	1	2
		MDC	8	0.2	7.8	98	0.0 11	0.9 89	1	2
	Rivaroxaban	Acetic Acid	0.5	0	0.5	96	0.0 4	1.9 6	2	4
	Tenoxicam	Hexane	25.7	0.8	24.9	97	0.0 09	0.9 91	2	3
		Methanol	13.6 7	0.7	13	95	0.0 04	2.9 96	2	5
		DMS	1.06	0	1	96	0.0 01	1.8 82	2.117	4
		Acetone	13.0 1	0.3	12.7	98	0.0 03	0.9 97	1	2
		DMF	14.3 8	0.4	13.9	97	0.0 02	1.9 98	1	3
	RebePrazole Sodium	Acetic acid	0.46	0	0.4	97	0.0 02	0.9 98	2	3
		Toluene	13.5	0.5	13	96	0.1 4	1.8 99	1.981	4
		DMSO	2	0.1	1.9	96	0.0 01	1.9 99	2	4
		MDC	13.5	0.3	13.2	98	0.0 12	0.9 88	1	2
		Acetone	1.5	0.1	1.4	96	0.0 3	1.9 7	2	4
		Isopropyl Alcohol	3	0.1	2.9	98	0.0 02	0.9 98	1	2
	CetrizineDih hydrochloride	N-Hexane	5.86	0.2	5.7	97	0.0 18	1.9 82	1	3
		Methanol	2.6	0.1	2.5	96	0.0 01	1.9 99	2	4
		Triethyl amine	0.8	0	0.8	97	0.0 3	0.9 7	2	3
Toluene		12	0.5	11.5	96	0.0 7	2.9 3	1	4	
DMF		3.4	0.1	3.3	98	0.0 33	0.9 67	1	2	
Ethyl acetate		24	0.5	23.5	98	0.0 04	0.9 96	1	2	

	MDC	13.8	0.4	13.4	97	0.0 03	0.9 97	2	3
	Acetone	14.5	0.6	13.9	96	0.0 02	0.9 98	3	4
Mefenamic Acid	Toluene	97	1.9	95.1	98	0.0 14	0.9 86	1	2
	DMF	24.4	0.7	23.7	97	0.0 15	1.9 85	1	3
	Methanol	346	10.4	335.6	97	0.0 03	1.9 97	1	3
Nimesulide	Acetic acid	0.4	0	0.4	96	0.0 8	2.9 2	1	4
	Toluene	40	2	38	95	0.0 04	1.9 96	3	5
	Methanol	88.4	2.7	85.7	97	0.0 01	1.9 99	1	3
Allopurinol	Isopropyl alcohol	4.17	0.2	4	96	0.0 04	1.9 96	2	4
	Acetone	18.2 4	0.5	17.7	97	0.0 09	0.9 91	2	3
Diclofenac Sodium	Toluene	5	0.15 0	4.850	97	0.0 04	0.9 96	2	3
Aceclofenac	Toluene	65.9	2.63 6	63.264	96	0.0 02	0.9 98	2	4
	Acetone	27.4	1.37 0	26.030	95	0.0 01	1.9 99	3	5
Tranexamic acid And/Or its intermediate And/Or	Fresh DMF	2.2	0.06 6	2.134	97	0.0 03	0.9 97	2	3
	IPA fresh	2.4	0.09 6	2.304	96	0.0 02	0.9 98	3	4
	Cyclohexane fresh	1.3	0.03 9	1.261	97	0.0 04	0.9 96	2	3
Glipizide	TEA fresh	0.12	0.00 4	0.116	97	0.0 02	0.9 98	2	3
	MDC fresh	2.56	0.05 1	2.509	98	0.0 01	0.9 99	1	2
	Toluene fresh	1.2	0.03 6	1.164	97	0.0 03	0.9 97	2	3
	Methanol	20	0.60 0	19.400	97	0.0 02	0.9 98	2	3
	Cyclohexyls cyanate	5	0.20 0	4.800	96	0.0 03	0.9 97	3	4
	Acetone fresh	2	0.04 0	1.960	98	0.0 02	0.9 98	1	2
Lornoxicam	Dichloromethane	3.57	0.10 7	3.463	97	0.0 01	1.9 99	1	3
	THF fresh	5.72	0.17 2	5.548	97	0.0 03	0.9 97	2	3
	Methanol	1.43	0.05 7	1.373	96	0.0 02	0.9 98	3	4
	Ethyl acetate	1.72	0.05 2	1.668	97	0.0 02	0.9 98	2	3

	fresh								
	IPA fresh	1.03	0.02 1	1.009	98	0.0 02	0.9 98	1	2

F-2 VOC emission sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- The entire manufacturing activities & distillation process will be carried out in a totally closed system.
- Maintenance of the pipeline and valves & fittings will be carried out regularly to avoid any leakages.
- Reactor will be connected with three numbers of condensers where in the first condenser chilled water will be used whereas in second and third condenser brine solution will be used as media and it will be also equipped with vacuum system as per requirement.
- The condenser will be provided with sufficient HTA and residence time to achieve more than 90% recovery.
- All the Flange joints of the pipe lines which carry solvents will be covered with flange guards.
- VOC detectors will be installed at various places to identify any fugitive emissions.
- Minimum number of flanges, joints and valves in pipelines shall be provided.

F-3 LDAR proposed:

Leak Definition

- A leak is detected whenever the measured concentration exceeds the threshold standard (i.e., leak definition) for the applicable regulation.
- Leak definitions vary by regulation, component type, service (e.g., light liquid, heavy liquid, gas/vapor), and monitoring interval.
- Many equipment leak regulations also define a leak based on visual inspections and observations (such as fluids dripping, spraying, misting or clouding from or around components), sound (such as hissing), and smell.

Following steps shall be followed for effective implementation of LDAR Program:

22. Process Controls
23. Emissions control program
24. Selection of appropriate method for leak detection
25. Scheduling and checklist for Leak Detection
26. Methods for rectification of identified leaks
27. Frequency of Monitoring
28. Record keeping of LDAR Program

Comments:

- Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the

process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

G Hazardous waste

G-1 Hazardous waste management matrix

Sr. no.	Name of Hazardous waste	Source of generation	Category	Sanctioned Quantity MT/Annun	Existing Quantity MT/Annun	Proposed Quantity MT/Annun	Total Quantity MT/Annun	Management of HW
1.	ETP Waste	From ETP plant	35.3	0	0	200	200	Collection, Storage, Transportation, Disposal at TSDF site
2.	Used Oil	From Lubrication	5.1	0.10	-0.10	0.5	0.5	Collection, Storage & Reused within the premises.
3.	Discarded Drums/Empty Barrels/ Containers / Bag/Liners/ Carboy	Packing of raw materials.	33.1	52	-52	5	5	Collection, storage, decontamination & disposal by selling to GPCB authorized recycler or recycled back
4.	Spent Caron/Hyflow	From manufacturing process	28.3	0	0	50	50	Collection, Storage, Transportation & send for co-processing / Incineration.
5.	Spent Catalyst	Generated from product No.29,54, 63	28.2	0	0	20	20	Collection, Storage, and sell to regenerator unit / Co-processing /

									Incineration
6.	Process Waste or Residue	From Solvent Recovery Unit & Manufacturing Process	29.1	1.20	-1.20	150	150		Collection, storage, Transportation & Send to Co-processing unit / Incineration
7.	Date expired Product	From Manufacturing activity	28.5	0	0	3	3		Collection, storage, transportation, and send to Co-processing / Incineration
8.	Off-specification Product	From Manufacturing activity	28.4	0	0	3	3		Collection, storage, and send to send for Co-processing / send to those units who are having permission of rule-9 / Incineration
9.	Stripped Solvent	From Stripper	28.6	0	0	110	110		Collection, storage, and send to send for Co-processing / send to those units who are having permission of rule-9 / Incineration
10.	Scrubber Solution – (Sodium Bromide solution (low concentration))*	From Scrubber	--	0	0	110	110		Collection, storage, and send to ETP.
11.	Scrubber Solution – (HCl solution) (10% to 12%)*	From Scrubber	--	0	0	160	160		Collection, storage and send into ETP.
12.	Scrubber	From	--	0	0	180	180		Collection,

	Solution – (SBS solution) (low concentration)*	Scrubber						storage, and send to ETP.
13.	Scrubber Solution – (Ammonium sulphate solution (low concentration)*	From Scrubber	--	0	0	80	80	Collection, storage, and send to ETP.
14.	Scrubber Solution (Sodium nitrite/ nitrate solution)*	From Scrubber	--	0	0	120	120	Collection, storage, and send to ETP.
15.	Scrubber solution (Sodium hypochlorite solution)*	From Scrubber	--	0	0	80	80	Collection, storage, and send to ETP

- * We may inform you that due to the low concentration of said scrubber solution, it cannot be accepted by Rule-9 end users hence it will be sent to ETP for further treatment.

Comments:

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

G-2 Non- Hazardous waste management matrix

✓ Not application

H SAFETY details

H-1 Details regarding storage of Hazardous chemicals

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Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
1	All solvent stored into the drum.			

Brief note on storage of Hazardous chemicals in Tanks

- N.A

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

- MOC of drum will be as per compatibility of chemical and drum materials. Unit will provide flame proof electrical fitting as and firefighting measures to eliminate fire as well as other hazard. Spillage kit will be available at require area.

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
Flammable	Storage in compatible storage unit with flame proof fitting, also provide firefighting measures. Only trained person allowed to handle
Corrosive	Storage in compatible storage unit with safe distance with other chemicals, Only trained person allowed to handle
Toxic	Storage in compatible storage unit with safe distance with other chemicals, Only trained person allowed to handle

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

Comments:

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

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

Type of Process	Safety measures including Automation
Hydrogenation	FLP type area will be provided. Total enclosed process system. Instrument & Plant Air System. Nitrogen blanketing in Hydrogenation reactor. Safety valve and Rupture disc provided on reactor. Cooling Chilling and power alternative arrangement have been made on reactor. Hydrogen and Nitrogen Cylinder bank away from the auto clave reactor.

	<p>PRV station with shut off valve, safety valve provision will be made for hydrogenation reaction safety.</p> <p>Before Hydrogen Gas charging in to reactor and after completion of reaction Nitrogen Blanketing will be done.</p> <p>Flame arrestor will be provided on vent line of reactor and it will be extended up to roof level.</p> <p>Open well ventilated and fragile roofs will be provided to on reactor.</p> <p>Safe Catalyst charging method will be adopted.</p> <p>SOP will be prepared and operators will be trained for the same.</p> <p>Static earthing and electric earthing (Double) provided.</p> <p>Reactor vent extended outside the process area and flame arrestor provided on vent line.</p> <p>Dumping vessel arrangement will be made.</p> <p>Dumpers for static earthing on pipeline flanges of flammable chemical will be provided.</p>	
Chlorination	<p>Chlorine handling area is kept well ventilated.</p> <p>Chlorine Emergency Kit is procured and kept ready at chlorine shed.</p> <p>Chlorine Hood with blower is provided with scrubbing arrangement.</p> <p>SCBA sets are kept ready at chlorine handling area.</p> <p>Safety Shower and eye wash is provided in Chlorine shed area.</p> <p>Chlorine absorption system is provided. In case of chlorine leakage in chlorine shed, it will be suck through blower and it will be scrubbed in Caustic scrubber.</p> <p>Emergency siren and wind sock is provided.</p> <p>Tele Communication system and mobile phones are used in case of emergency situations for communication.</p> <p>First Aid Boxes and Occupational health centre is made at site.</p> <p>Full body protection suite and other PPEs are kept ready in ECC at site.</p> <p>Emergency team is prepared and trained for scenario base emergency. Like Toxic control team, Fire control team, First aid team, Communication and general administration team, Medical team etc.</p>	
Nitration	<p>Nitration will be done in closed S.S vessels.</p> <p>Nitric acid will be used for nitration process. Nitric acid is an extremely corrosive acid capable of causing severe chemical burns very rapidly. Because of the hazards posed by nitric acid, it is important to take safety measures whenever handling it.</p> <p>In our nitration process, exothermic reaction will be controlled by adequate dosing of reaction chemicals in a fixed time (not short duration) having adequate cooling water circulation in jacket of reaction vessels. Thus, any energy generated due to exothermic reaction will be controlled by external cooling circulation and therefore vessels will not be pressurized.</p> <p>The nitration reaction will be controlled by systematic cooling design to withdraw the energy evolved. Adequate pressure relief valve will be provided for each vessels having pressure release capacity will be kept below -3 kg/cm² than that of reaction vessels.</p>	
Bromination	<p>Preventative / Mitigation Measures: Storage & Handling: Protect against physical damage. Store in cool dry area, out of direct sunlight. Separate from combustible, organic or other readily oxidizable materials.</p> <p>Keep above 20F to prevent freezing but avoid heating above atmospheric temperatures as vapor pressure increase could rupture container.</p> <p>Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and</p>	

precautions listed for the product.
 Fire fighting: Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.
 Following Personal Protective Equipment are to be made compulsory when handling Bromine approved chemical safety goggles at all times when handling Br₂.
 Use a full face shield over eyewear. Full body protection PVC suite
 Eyewash fountains should be located in areas where bromine is handled, used or stored. When in danger of contact with liquid bromine, wear an approved chemical resistant suit. Leather or other non-woven ANSI approved steel-toed shoes or Gum boot Protective rubber boots should be worn over shoes for extra protection. Have NIOSH approved respirators and self-contained breathing apparatus available. Gloves: 100% Nitrile rubber gloves or Neoprene gloves
 Safety Practices in the Work Area
 We will inform our all employees of the potential hazards of contact with bromine and train them in appropriate first-aid procedures. Bromine handling areas will be clearly marked and restricted to qualified, trained personnel only. Ventilation We will maintain bromine vapor concentration in the work area to less than 0.1 ppm with adequate exhaust hoods, ventilation systems and scrubbers. Analyze air for proper control.
 Transfer or repackage bromine only in a controlled, closed environment. Exhaust ventilating systems will be used in enclosed areas where bromine is handled.

H-3 Details of Fire Load Calculation

Total Plot Area:	3384 m ²
Area utilized for plant activity:	866 m ²
Area utilized for Hazardous Chemicals Storage:	160 m ²
Number of Floors:	G+3 Floors in production Building
Water requirement for firefighting in KLD:	15KL
Water storage tank provided for firefighting in KLD:	200 KL
Details of Hydrant Pumps:	Main Pump:900 L/min. Jockey Pump: 100 L/min. Diesel Engine driven Pump: 450 L/min
Nearest Fire Station :	Ankleshwar Fire station
Applicability of Off Site Emergency Plan:	Applicable

Comments:

- The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 200KL. SEAC found it as per the requirement.

H-4 Details of Fire NOC/Certificate:

Shall be obtained after receipt of EC.

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

-

Number of permanent Employee:	60
Number of Contractual person/Labour:	10
Area provided for OHC:	25m ²
Number of First Aid Boxes:	3nos
Nearest General Hospital:	JayabenModi Hospital,
Name of Antidotes to be store in plant:	Adequate antidotes will be stored within premises

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.

Details of Environmental Management Plan (EMP)

As below:

Sr. No	Unit	Details	Capital Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)
1	Waste Water	Installation of Primary treatment and CMEE cost	51	288
2	Air	Installation of APCM and its maintenance	20	12
3	Hazardous Management	HWSA, Disposal	5	80
4	Fire & Safety	Safety Equipment (PPE, fire extinguishers, First Aid Kit, Smoke detector, Ventilation, Fire Hydrant System, Fire Proximity Suit, water sprinkler system, DCS Automation System)	77	3
6	Green Belt Development	Development Green belt area and its maintenance	2	1
7	Occupational Health	First Aid Kit, Medicine, Beds, other facility	5	1
8	Noise Control	Acoustic Encloser	1	1
9	CER Funds	Unit will carried out CER Activities in Kosamdi Village	7	1
Total			168	387

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.

14) DELIBRATION AND RECOMMENDATION:

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

Conditions with which Environment Clearance is recommended:**Construction Phase**

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

SPECIFIC CONDITIONS:

1. Project Proponent (PP) shall strictly abide by the outcome/decision of Hon'ble Supreme Court of India in Civil Appeal no. 8478/2020 regarding operation of the Hon'ble NGT orders dated 10/07/2019 & 14/11/2019.(In case of

earlier CEPI area only i.e. GIDC- Vapi, Sachin, Pandesara, Ankleshwar, Panoli, Nandesari, Vatva, Odhav etc.)

2. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after the 31st December 2021, 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 subsequent amendments.
4. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
5. (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
6. 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].
7. 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.
8. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained

Safety & Health:

- a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals
- b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
- c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
- d) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.

- e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
- f) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
- g) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
- h) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
- i) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
- j) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
- k) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
- l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.
- m) Unit shall provide chlorine leakage control emergency kit and FRP hood with scrubber system for chlorine safety
- n) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for nitration vessel safety
- o) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for exothermic reaction vessel safety.

WATER

9. Total water requirement for the project shall not exceed 33 KLD. Unit shall reuse 2 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 31 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
10. The industrial effluent generation from the project shall not exceed 20 KLD.
11. Management of Industrial effluent shall be as under:
 - ✓ Process effluent (10.5KLD) shall be passed from stripper and collect to ETP.0.3 KLD strip solvent generated from stripper shall be removed.
 - ✓ Remaining 10.2 KLD process effluent along with 1.8 KLD boiler blow down, 2 KLD scrubber solution, 2 KLD washing and 4 KLD domestic effluent shall be subjected to CMEE.
 - ✓ Total 20 KLD effluent shall be subjected to CMEE.
12. Domestic wastewater generation shall not exceed 4 KL/Day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
13. Unit shall provide ETP with adequate capacity.
14. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

15. The unit shall provide metering facility at the inlet and outlet of ETP, Stripper and maintain records for the same.
16. Proper logbooks of ETP, Stripper, reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

17. Unit shall not exceed fuel consumption for Steam Boiler, TFH and D G Set as per the point no. E-2 as mentioned above.
18. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
19. Unit shall provide adequate APCM with process gas generation sources as the point no. E-3 as mentioned above.
20. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
- Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
 - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
 - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
21. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
22. For control of fugitive emission, VOCs, following steps shall be followed :
- ✓ Closed handling and charging system shall be provided for chemicals.
 - ✓ Reflux condenser shall be provided over Reactors / Vessels.
 - ✓ Pumps shall be provided with mechanical seals to prevent leakages.
 - ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.
23. Solvent management shall be carried out as follows:
1. Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
 2. Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
 3. Reactor and solvent handling pump shall have mechanical seals to prevent leakages.

4. The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
 5. Solvents shall be stored in a separate space specified with all safety measures.
 6. Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
 7. Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.
24. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, HCl, Br₂, Cl₂, NH₃, HBr and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

25. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
26. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
27. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
28. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
29. STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.
30. 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.
31. 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

32. The PP shall develop green belt [531.70 m² (15.71%) inside plant premises + 585.02 m² (17.29%) outside plant premises through Ankleshwar Industries Association = Total: 1116.72 Sq. m.] 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.

OTHERS:

33. The project proponent shall carry out the entire activities [Solar Panel facility at PHC Centre of kosamadi village] proposed under CER shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
34. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

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

10	SIA/GJ/IND3/247052/2021	M/s. Ronak Chemicals Plot no.D-2/17/3 at Dahej-2 Industrial Estate,392130,Dist:Bharuch Gujarat.	EC
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Category of the unit: **5 (f)**

Project status: **New**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	SIA/GJ/IND3/247052/2021
1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	23.12.2021
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. &Date :	Not applicable as project is categorized as B2
1.7. Technical expert / Environmental Consultant :	Vasundhara Enterprise
1.8. SEAC Meeting No. and Date:	SEAC Meeting No. 381 Date 15.03.2022
1.9. Compliance of Existing EC & CCA	Not Applicable

2) This is a new project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

Product Table

Sr. No.	Name of the Products	CAS no.	Quantity MT/Month	*End-use of products
1	Acetamide	60-35-5	100	Used to treat glaucoma, oedema (fluid retention), epilepsy
2	Di-Ethyl Malonate	105-53-3	300	Cosmetics, Pharma Synthesis
3	Di-Ammonium Phosphate	7783-28-0	100	Used in the therapy of inflammatory arthritis
4	Ammonium Sulphate	7783-20-2	100	-For the precipitation and fractionation of proteins, purification of antibodies, crystallization of proteins, protein-nucleic acid complexes and of nucleic acids. It acts as a nitrogen supplier for yeast cultures and microorganisms-In the purification of antibodies. Cleaning agent in the vaccination process
5	8-Amino Quinaldine	18978-78-4	20	Use as flavor & Fragrance Chemicals
6	Famotidine	76824-35-6	25	It is used to treat <u>peptic ulcer disease</u> , <u>gastroesophageal reflux disease</u> , and

				Zollinger-Ellison syndrome.
7	R & D	—	0.1	—
TOTAL			645.1	

- 3) 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.

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	Acetamide	60-35-5	API	—	—	—	Used to treat glaucoma, oedema (fluid retention), epilepsy
2	Di-Ethyl Malonate	105-53-3	Intermediate	n-1	Vitamin B1	59-43-8	Used to treat beriberi (a condition caused by prolonged lack of vitamin B1)
3	Di-Ammonium Phosphate	7783-28-0	Intermediate	—	Antirheumatic	—	Inactive Pharma Ingredient
4	Ammonium Sulphate	7783-20-2	Intermediate	n-2	Antipyretic Analgesic	103-90-2	For the precipitation and fractionation of proteins, purification of antibodies, crystallization of proteins, protein-nucleic acid complexes and of nucleic acids
5	8-Amino Quinaldine	18978-78-4	API	---	---	---	Use as flavor & Fragrance Chemicals
6	Famotidine	76824-35-6	API	---	---	---	It is used to treat <u>peptic</u> ulcer disease,

								gastroesophageal reflux disease, and Zollinger-Ellison syndrome.
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- 4) The proposal was considered in the SEAC video conference meeting dated 15.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile and found that proposed products are not in the 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.
- 7) Upon asking regarding justification of DAP – Di ammonium Phosphate as API Intermediate, PP could not justify the same.

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

1. Authenticated documents with technical justification regarding proposed product 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.

11	SIA/GJ/IND3/247332/2021	M/s. HTKP INDUSTRIES PVT LTD PLOT NO.: 3304 – 3305/B, GIDC INDUSTRIAL ESTATE, ANKLESHWAR – 393002, TA – ANKLESHWAR, DIST.: BHARUCH, GUJARAT (INDIA).	EC
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Category of the unit: **5 (f)**

Project status: **New**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	SIA/GJ/IND3/247332/2021
1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	24.12.2021
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. &Date :	Not applicable as project is

	categorized as B2
1.7. Technical expert / Environmental Consultant :	M/s. Ashva Environment Consultancy
1.8. SEAC Meeting No. and Date:	381 st meeting dated 15.03.2022
1.9. Compliance of Existing EC & CCA	Not Applicable (if New)

2) This is a new project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

Product Table

Sr. No.	Name of the Products	API OR INTERMEDIATE	CAS no.	Quantity MT/Month	*End-use of products
1	TIZANIDINE HCL	API	64461-82-1	12.0	Muscle Relaxant
2	GLIBENCLAMIDE	API	10238-21-8		Antidiabetic
3	LOSARTAN POTASSIUM	API	124750-99-8		Antihypertensive
4	ACECLOFENAC	API	89796-99-6		Anti-Inflammatory
5	FEXOFENADINE HCL	API	153439-40-8		Antihistamine
6	SERTRALINE HCL	API	79559-97-0		To treat Depression
7	LORNOXICAM HCL	API	70374-39-9		Anti-Inflammatory
8	BISACODYL	API	603-50-9		In treatment of Constipation
9	DEFERASIROX	API	201530-41-8		to treat iron overload caused by blood transfusions in adults and children
10	PAROXETINE HCL HEMIHYDRATE	API	110429-35-1		to treat depression, panic attacks, obsessive-compulsive disorder (OCD), anxiety disorders, and post-traumatic stress disorder
11	PHENYLPHRINE HCL	API	61-76-7		to relieve nasal discomfort caused by colds,

					allergies, and hay fever.
12	BISOPROLOL FUMARATE	API	66722-44-9		to treat high blood pressure (hypertension)
13	VENLAFAXIN E HCL	API	99300-78-4		to treat depression, anxiety, panic attacks, and social anxiety disorder (social phobia)
14	TADALAFIL	API	171596-29-5		to treat erectile dysfunction (ED, impotence; inability to get or keep an erection).
15	LINEZOLID	API	165800-03-3		to treat infections, including pneumonia, and infections of the skin
16	DEXTROMET HOPHAN HBR	API	125-69-9		It is a cough suppressant that works by decreasing the feeling of needing to cough.
17	KETOCONAZOLE	API	65277-42-1		to treat skin infections such as athlete's foot, jock itch, ringworm, and certain kinds of dandruff.
18	PIROXICAM	API	36322-90-4	35.0	to relieve pain, tenderness, swelling, and stiffness caused by osteoarthritis (arthritis caused by a breakdown of the lining of the joints)
19	POVIDONE IODIDE	API	25655-41-8		antiseptic
20	POTASSIUM IODIDE	API	7681-11-0		antithyroid medicines
21	LIDOCAINE	API	137-58-6		anaesthesia
22	ETORICOXIB	API	202409-33-		Etoricoxib is

				4		indicated for the treatment of rheumatoid arthritis, psoriatic arthritis, osteoarthritis, ankylosing spondylitis, chronic low back pain, acute pain, and gout
23	SODIUM PICOSULFATE	API		10040-45-6		to clean out the intestines before surgery or certain procedures (such as colonoscopy, X-rays)
24	CETIRIZINE DIHYDROCHLORIDE	API		83881-52-1		antihistamines
25	FOLIC ACID	API		59-30-3		Folic acid is used for preventing and treating low blood levels of folate (folate deficiency) and high blood levels of homocysteine (hyperhomocysteinemia)
26	OLANZAPINE	API		132539-06-1		to treat certain mental/mood conditions (such as schizophrenia, bipolar disorder)
27	ETODOLAC	API		41340-25-4		arthritis
28	ONDANSETRON HCL	API		103639-04-9		nausea and vomiting
29	SODIUM VALPROATE	API		99-66-1		to treat epilepsy and bipolar disorder.
30	GABAPENTIN	API		60142-96-3		to treat restless legs syndrome
31	PREGABALIN	API		148553-50-8		to treat certain types of seizures in adults
32	IRON SUCROSE	API		8047-67-4		Iron sucrose injection is used treat iron-

					deficiency anemia (a lower-than-normal number of red blood cells due to too little iron) in people with chronic kidney disease (damage to the kidneys which may worsen over time and may cause the kidneys to stop working)
33	KETOROLAC TROMETHAMINE	API	74103-06-3		to treat moderately severe pain and inflammation
34	LEVOSULPIRIDE	API	23672-07-3		to treat dyspepsia, symptoms of Meniere's syndrome
35	LACOSAMIDE	API	175481-36-4		to control partial onset seizure
36	LEVOCETIRIZINE DIHCL	API	130018-77-8		to relieve allergy symptoms such as watery eyes, runny nose, itching eyes/nose, and sneezing
37	DANAZOL	API	17230-88-5		Danazol is an androgen similar to testosterone. For the treatment of endometriosis and fibrocystic breast disease, it works by decreasing the number of hormones made by the ovaries.
38	AMISULPRIDE	API	53583-79-2		Amisulpride is an effective atypical antipsychotic agent in this context.
39	MONTELUKA	API	151767-02-		to control and

		ST SODIUM		1		prevent symptoms caused by asthma.
40		MINOXIDIL	API	38304-91-5	60.0	Minoxidil can also cause your hair to shed.
41		D BIOTIN	API	58-85-5		Skin Toners, Skin Brightening Products.
42		CLOTRIMAZOLE	API	23593-75-1		to use this medication until the full prescribed amount is finished.
43		NICLOSAMIDE	API	50-65-7		Anti-helminthic drug
44		METAXALONE	API	1665-48-1		to treat skeletal muscle conditions such as pain or injury
45		ITOPRIDE HCL	API	122892-31-3		anorexia
46		RAFOXANIDE	API	22662-39-1		anthelmintic
47		TINIDAZOLE	API	19387-91-8		to treat trichomoniasis.
48		OFLOXACIN	API	82419-36-1		to treat bacterial infections of the skin, lungs, prostate, or urinary tract (bladder and kidneys).
49		FLUNIXIN MEGLUMINE	API	42461-84-7		It is used for pain relief to treat colic
50		MELOXICAM	API	71125-38-7		anti-inflammatory
51		TOPIRAMATE	API	97240-79-4		Anticonvulsant
52		BROMHEXINE HCL	API	611-75-6		to treat a condition in which the airways are clogged with thick phlegm
53		FERROUS GLUCONATE	API	299-29-6		to treat or prevent iron deficiency anemia (a lack of red blood cells caused by having too little

					iron in the body).
54	CALCIUM CITRATE	API	813-94-5		to treat conditions caused by low calcium levels such as bone loss (osteoporosis), weak bones (osteomalacia/rickets), decreased activity of the parathyroid gland (hypoparathyroidism), and a certain muscle disease (latent tetany)
55	POTASSIUM GLUCONATE	API	299-27-4		to prevent or to treat low blood levels of potassium (hypokalemia)
56	MAGNESIUM GLUCONATE	API	3632-91-5		to prevent and treat low levels of magnesium. Magnesium is very important for the normal physiologic functioning of cells, nerves, muscles, bones.
57	CALCIUM LACTATE	API	814-80-2		
58	CALCIUM GLUCONATE	API	66905-23-5		It has a role as a nutraceutical. It contains a D-gluconate. Calcium gluconate is used as mineral supplement and medication when there is insufficient calcium in the diet. Supplementation may be done to treat or prevent osteoporosis or rickets, consequences of

					hypocalcemia
59	POTASSIUM CITRATE	API	6100-05-6		to treat a kidney stone condition called renal tubular acidosis
60	MAGNESIUM CITRATE	API	3344-18-1		It is used as a laxative to treat occasional constipation
61	ZINC GLUCONATE	API	4468-02-4		Zinc gluconate lozenges are used to help make cold symptoms less severe or shorter in duration
62	CALCIUM CITRATE MALATE	API	142606-53-9		It may be used to treat conditions caused by low calcium levels such as bone loss (osteoporosis), weak bones (osteomalacia/rickets), decreased activity of the parathyroid gland (hypoparathyroidism), and a certain muscle disease (latent tetany).
63	ROSUVASTATIN IN CALCIUM	API	147098-20-2		Rosuvastatin is used along with a proper diet to help lower "bad" cholesterol and fats (such as LDL, triglycerides) and raise "good" cholesterol (HDL) in the blood. It belongs to a group of drugs known as "statins." It works by reducing the amount of cholesterol made by the liver.

64	R & D	--	--	0.1	
Total				107.1	--

- 3) 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.
- 4) The proposal was considered in the SEAC video conference meeting dated 15.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) 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
- 8) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 1223(E) dated 27.03.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.
- 9) Committee asked justification for the end Use of Potassium Iodide, Ferrous Gluconate, Calcium Citrate, Potassium Gluconate, Magnesium Gluconate, Calcium Lactate, Calcium Gluconate, Potassium Citrate, Magnesium Citrate, Zinc Gluconate and Calcium Citrate Malate as API. PP could not justify the same.
- 10) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details
A-1	Project cost	

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

Total Project

Rs. 15.5 Crores

Break-up of proposed project Cost:

Details	Project Cost (Rs. In Crores)
Land	2.5
Building	5.0
Machinery	7.0
other	1.0

A-2 Details of CER -

PP shall carry out CER activities as below:

- ✓ Solid Waste Management – OWC
- ✓ Provision of Roof top solar Panel at nearby school

B Land / Plot ownership details:

Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/ANK/TRF/FTO/ANK1/1309/Date: 17.02.2021 for M/s. HTKP Industries Pvt Ltd only.

B-1 Plot area

Total Plot area
7140 Sq. m.

B-2 Area adequacy

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

Total Plot Area: 7140 Sq. meter

Manufacturing Area (F.F): 408 Sq. meter

Raw Material Storage Area (F.F): 408 Sq. meter

Hazardous Chemical Storage Area: 225.0 Sq. meter

Area Statement

Sr. No.	Name of Area	Area (G.F.)	Area (F.F.)
1	Security Cabin - 1	9.0	
2	Underground water tank	80.0	
3	OHC	100.0	
4	Admin	100.0	
5	Lab	100.0	
6	Manufacturing Plant	0.0	408.0
7	Raw material storage area	0.0	408.0

8	Drying & Packing area	408.0	
9	Finish good area	408.0	
10	Boiler Area	100.0	
11	DG set Area	64.0	
12	Utility Area	100.0	
13	Cooling tower	100.0	
14	Cylinder storage area	20.0	
15	PESO area	450.0	
16	Hazardous chemical storage area	225.0	
17	ETP area	300.0	
18	Security Cabin - 2	9.0	
19	Green Belt	2793.0	
20	Road & Open area	1774.0	
Total Plot Area		7140.0	816.0

➤ 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

	Total (Sq. meter)
Area in Sq. meter	2856
% of total area	40

Comments:

The condition shall be given that -

- The PP shall develop green belt (2856 Sq. m i.e. 40 % 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

Employment generation

Total
75

D WATER

D-1 Source of Water Supply

- Ankleshwar GIDC Water supply.

Comments:

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

D-2 Water consumption (KLD)

-

Category	Quantity KLD
(P) Domestic	4.0
(Q) Gardening	3.0
(R) Industrial	
Process	28.2
Washing	5.0
Boiler	10.0
Cooling	6.0
Others (Scrubber)	3.0
Industrial Total	52.2
Grand Total (A+B+C)	59.2

-

Comments:

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

D-3 Waste water generation (KLD)

-

Category	Waste water KLD
(M) Domestic	3.2
(N) Industrial	
Process	33.6
Washing	5.0
Boiler	1.0
Cooling	0.6
Others (Scrubber)	2.4
Total Industrial waste water	42.6
Total [A + B]	45.8

-

Comments:

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

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

3.2 KLD Domestic Waste Water shall be treated in ETP & treated wastewater will be sent to CMEE.

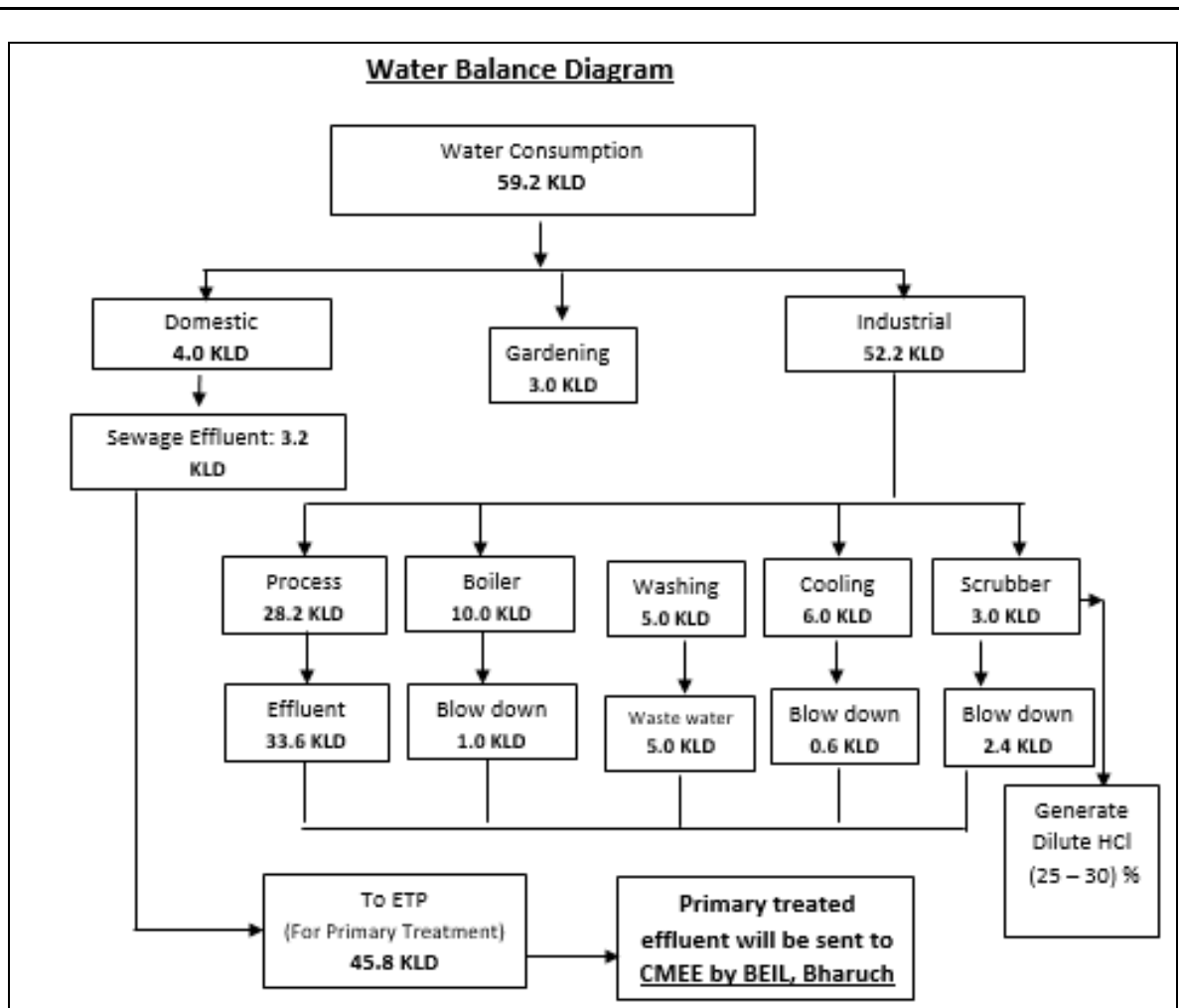
Comments:

- Domestic wastewater generation shall not exceed 3.2 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.

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

Sr. no.	Quantity KLD	Facility
1	45.8 KLD (Domestic & Industrial)	CMEE BEIL
2		
Total	45.8 KLD	
Membership Certificate no. & Date (For CMEE)		
Membership certificate of M/s: BEIL-Ankleshwar vide no. Ref. BEIL/ANK/2022/Date: 06 th January, 2022		

D-5b Simplified water balance diagram



D-5c		Summary	
	Summary of water requirement	Quantity KLD	Remarks
	Total water requirement for the project (A)	59.2	
	Quantity to be recycled (B)	0.0	
	Total fresh water requirement (C)	59.2	
Ensure Total water requirement = Fresh water + Recycled water i.e. A = B + C			

Comments:

Total water requirement for the project shall not exceed 59.2 KLD. Fresh water requirement shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.

- ✓ Management of Industrial effluent shall be as under:
- ✓ Industrial Effluent @ 42.6 KLD shall be generated from process/boiler/cooling tower/Scrubber Blow down & washing activity. It shall be Primary treated to in –house ETP then after it shall be sent to Common MEE Plant for further treatment.

✓ Unit shall send waste water to Common MEE only after achieving inlet norms prescribed by GPCB ensuring content of effluent for COD so as not to get air borne during spray drying after APCM in order to achieve no adverse impacts on Environment and Human Health.

✓

✓ Unit shall provide ETP with adequate capacity.

✓ 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 : 400 KVA

E-2 Flue gas emission details

Sr. No.	Source of emission with capacity	Stack Height In Meter	Type of Fuel	Quantity of Fuel	Parameter	Air Pollution Control Equipment
1.	Boiler – 1 Nos. (Capacity: 2.0 MT/Hr.)	30	Natural Gas	2000 SCM/Day	Particular matter SO ₂ NO _x	Adequate Stack Height
2.	TFH – 2 Nos. (Capacity: 2.0 Lacs Kcal/hr.)	30			Particular matter SO ₂ NO _x	Adequate Stack Height
3.	DG Set – 2 Nos. (Capacity: 250 kVa)	11	Diesel	30.0 Liter/hr.	Particular matter SO ₂ NO _x	Adequate Stack Height

E-3 Process gas

Sr. No.	Specific source of emission	Type of Emission	Stack Height In Meter	Air Pollution Control Equipment
1.	Reaction Vessel – 1	NH ₃	11	Two Stage Acid Scrubber
2.	Reaction Vessel – 2	HCl SO ₂	11	Two Stage Water + Alkali Scrubber
3.	Reaction Vessel – 3	HCl HBr	11	Two Stage Water + Alkali Scrubber
4.	Reaction Vessel – 4	HBr	11	Two Stage Water + Alkali Scrubber
5.	Reaction Vessel – 5	HCl	11	Two Stage Water Scrubber
6.	Reaction Vessel – 6	HF	11	Two Stage Alkali Scrubber

E-4 Fugitive emission details with its mitigation measures.

- Adequate ventilation will be provided.
- Regular maintenance of valves, pumps, flanges, joints and other equipment will be

- done to prevent leakages and thus minimizing the fugitive emissions.
- Periodic monitoring of work area will be carried out to check the fugitive emission.
 - Close feeding system will be provided for centrifuges. Centrifuge and filtrate tank vents will be connected to vent chillers.
 - Fugitive emission over reactors, formulation areas, centrifuges, chemical loading and transfer area will be collected through hoods and ducts by induced draft and controlled by scrubber.
 - Dedicated scrubber will be provided are used for fugitive emissions to control

Comments for E2, E3 & E4:

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

F Solvent management, VOC emissions etc.

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

Solvent Recovery Table

Name Of Product	Monthly quantity (MT)	Batch Size (Kg)	Name of Solvent	Use Qty.	Recovery	Spent Solvent		
				Kg/batch	(Kg)	MT/MT	MT/Month	MT/Annunum
TIZANIDINE HCL	12	2	Ethyl acetate 95%	1.2	1.14	0.57	6.84	82.08
	12	2	Acetone 93%	2	1.86	0.93	11.16	133.92
	12	2	Methanol 95%	0.26	0.247	0.12	1.48	17.78
GLIBENCLAMIDE	12	1	Butanone 95%	0.03	0.0285	0.03	0.34	4.10
	12	1	EDC 95%	0.09	0.0855	0.09	1.03	12.31
	12	1	Methanol 95%	0.06	0.057	0.06	0.68	8.21
	12	1	Acetone 93%	0.07	0.0651	0.07	0.78	9.37
DEXTROMETHORPHAN HBR	35	200	2-(Cyclohex-1-en-1-yl) ethanamine 95%	38.27	36.35	0.18	6.36	76.34

	35	200	(4-Methoxy phenyl) acetic acid 97%	103.86	100.74	0.50	17.63	211.55
	35	200	Toluene 97%	366.49	355.49	1.78	62.21	746.53
	35	200	Methanol 95%	30.07	28.56	0.14	5.00	59.98
	35	200	Acetone 93%	50.78	47.22	0.24	8.26	99.16
KETOCONAZOLE	35	100	Toluene 97%	30	29.1	0.29	10.19	122.22
	35	100	Methanol 95%	112	106.4	1.06	37.24	446.88
	35	100	n-Butanol 97%	5	4.85	0.05	1.70	20.37
	35	100	Methylene Dichloride 93%	35	32.55	0.33	11.39	136.71
	35	100	Ethyl Acetate 95%	42	39.9	0.40	13.97	167.58
	35	100	n-Hexane 95%	50	47.5	0.48	16.63	199.50
	35	100	Acetone 93%	25	23.25	0.23	8.14	97.65
PIROXICAM	35	330	o-xylene 97%	102	98.94	0.30	10.49	125.92
	35	330	IPA 93%	70	65.1	0.20	6.90	82.85
MINOXIDIL	60	1	Methanol 95%	0.06	0.057	0.06	3.42	41.04
	60	1	Piperidine 97%	0.55	0.5335	0.53	32.01	384.12
	60	1	Toluene 97%	0.2	0.194	0.19	11.64	139.68
LOSARTAN POTASSIUM	12	100	Toluene 97%	23	22.31	0.22	2.68	32.13
	12	100	MDC 93%	40	37.2	0.37	4.46	53.57
	12	100	Methanol 95%	80	76	0.76	9.12	109.44
	12	100	Ethyl acetate 95%	10	9.5	0.10	1.14	13.68
	12	100	IPA HCl 93%	32	29.76	0.30	3.57	42.85
D BIOTIN	60	1	Acetic Anhydride	0.992	0.9622	0.96	57.73	692.78

			e 97%					
CLOTRIMAZOLE	60	1	Toluene 97%	0.08	0.0776	0.08	4.66	55.87
	60	1	Acetone 93%	0.01	0.0093	0.01	0.56	6.70
OLANZAPINE	35	100	Methano I 95%	90	85.5	0.86	29.93	359.10
ETODOLAC	35	500	Methano I 95%	100	95	0.19	6.65	79.80
ONDANSETRON HCL	35	1	Toluene 97%	0.1	0.097	0.10	3.40	40.74
	35	1	DMF 97%	0.06	0.0582	0.06	2.04	24.44
NICLOSAMIDE	60	100 0	Mono Chloro Benzene 97%	60	58.2	0.06	3.49	41.90
	60	100 0	Methano I 95%	120	114	0.11	6.84	82.08
ACECLOFENAC	12	100	Toluene 97%	35	33.95	0.34	4.07	48.89
	12	100	DMF 97%	5	4.85	0.05	0.58	6.98
ITOPRIDE HCL	60	100 0	Toluene 97%	80	77.6	0.08	4.66	55.87
	60	100 0	IPA 93%	2435	2265	2.27	135.90	1630.80
RAFOXANIDE	60	100 0	Mono ChloroB enzene 97%	70	67.9	0.07	4.07	48.89
	60	100 0	Acetone 93%	70	65.1	0.07	3.91	46.87
TINIDAZOLE	60	100 0	Methyl Iso Butyl Ketone 97%	90	87.3	0.09	5.24	62.86
OFLOXACIN	60	100 0	N-Methyl Piperazi ne 97%	320	310.4	0.31	18.62	223.49
	60	100 0	Iso Propyl Alcohol 93%	60	55.8	0.06	3.35	40.18
FLUNIXIN MEGLUMINE	35	100 0	Toluene 97%	26	25.22	0.03	0.88	10.59
	35	100 0	Iso Propyl Alcohol 93%	100	93	0.09	3.26	39.06
LIDOCAINE	35	500	Toluene 97%	115	111.55	0.22	7.81	93.70
	35	500	Di ethyl	230	213.9	0.43	14.97	179.68

			Amine 93%					
	35	500	Acetone 93%	110	102.3	0.20	7.16	85.93
ETORICOXIB	35	50	Methano I 95%	6.8	6.46	0.13	4.52	54.26
	35	50	Acetone 93%	6.2	5.76	0.12	4.03	48.38
FEXOFENADINE HCL	12	66.7	Toluene 97%	12.4	12.028	0.18	2.16	25.97
	12	66.7	Methano I 95%	44.6	42.37	0.64	7.62	91.47
	12	66.7	Denatur ed spirit 95%	3	2.85	0.04	0.51	6.15
	12	66.7	Methyl- iso-butyl ketone 97%	5.5	5.335	0.08	0.96	11.52
	12	66.7	Acetone 93%	16	14.88	0.22	2.68	32.12
	12	66.7	IPA 93%	10	9.3	0.14	1.67	20.08
	12	66.7	Ethyl Acetate 95%	43	40.85	0.61	7.35	88.19
SODIUM PICOSULPHATE	35	48	Ethyl Acetate 93	2	1.86	0.04	1.36	16.28
	35	48	Methano I 95%	162	153.9	3.21	112.22	1346.63
CETRIZINE DIHYDROCHLO RIDE	35	200	Chlorofo rm 93%	30	27.9	0.14	4.88	58.59
	35	200	Methano I 95%	2	1.9	0.01	0.33	3.99
	35	200	Toluene 97%	21	20.37	0.10	3.56	42.78
	35	200	Ethyl Acetate 93%	35	32.55	0.16	5.70	68.36
	35	200	MDC 93%	15	13.95	0.07	2.44	29.30
	35	200	Acetone 93%	62	57.66	0.29	10.09	121.09
SERTRALINE HCL	12	100	Ethyl Acetate 93%	117	108.81	1.09	13.06	156.69
	12	100	Methano I 95%	36	34.2	0.34	4.10	49.25
	12	100	IPA 93%	75	69.75	0.70	8.37	100.44
LORNOXICAM HCL	12	50	Chlorofo rm 93%	13	12.09	0.24	2.90	34.82
	12	50	Methano	35.42	33.64	0.67	8.07	96.88

			1 95%					
	12	50	Ether 93%	5	4.65	0.09	1.12	13.39
	12	50	DMF 97%	15	14.55	0.29	3.49	41.90
	12	50	Xylene 97%	25	24.25	0.49	5.82	69.84
MELOXICAM	60	143	Toluene 97%	3	2.91	0.02	1.22	14.65
	60	143	Methano 1 95%	2	1.9	0.01	0.80	9.57
GABAPENTINE	35	100 0	Methylen e Dichlorid e 93%	30	27.9	0.03	0.98	11.72
TOPIRAMATE	60	500	Acetone 93%	105	97.65	0.20	11.72	140.62
	60	500	n- Hexane 95%	68	64.6	0.13	7.75	93.02
	60	500	Toluene 97%	82	79.54	0.16	9.54	114.54
	60	500	Ethyl Acetate 93%	80	74.4	0.15	8.93	107.14
	60	500	Isopropyl Alcohol 93%	70	65.1	0.13	7.81	93.74
PREGABALINE	35	100 0	Chlorofo rm 93%	25	23.25	0.02	0.81	9.77
	35	100 0	IPA 93%	60	55.8	0.06	1.95	23.44
BROMHEXINE HCL	60	100	MCB 97%	2	1.94	0.02	1.16	13.97
	60	100	Methano 1 95%	2	1.9	0.02	1.14	13.68
	60	100	Ethyl Acetate 93%	2.5	2.325	0.02	1.40	16.74
FERROUS GLUCONATE	60	100 0	Methano 1 95%	20	19	0.02	1.14	13.68
CALCIUM CITRATE	60	390	Methano 1 95%	20	19	0.05	2.92	35.08
ROSUVASTATIN CALCIUM	60	202	Acetonitr ile 95%	36	34.2	0.17	10.16	121.90
KETOROLAC TROMETHAMIN E	60	200	Acetone 93%	385	358	1.79	107.40	1288.80
DEFERASIROX	60	1	Toluene 97%	2.18	2.11	2.11	126.60	1519.20
	60	1	Methano 1 95%	0.8	0.76	0.76	45.60	547.20
	60	1	Ethanol	2	1.9	1.90	114.00	1368.00

			95%					
PAROXETINE HCL HEMIHYDRATE	60	150	EA 93%	340	316	2.11	126.40	1516.80
	60	150	Heptane 95%	280	266	1.77	106.40	1276.80
	60	150	THF 95%	145	137.75	0.92	55.10	661.20
	60	150	Toluene 97%	320	310	2.07	124.00	1488.00
	60	150	Acetone 93%	265	246	1.64	98.40	1180.80
	60	150	MDC 93%	300	279	1.86	111.60	1339.20
	60	150	IPA 93%	335	312	2.08	124.80	1497.60
PHENLYPHERIN E HCL	60	100	IPA 93%	135	125.55	1.26	75.33	903.96
	60	100	Toluene 97%	80	77.6	0.78	46.56	558.72
	60	100	Acetone 93%	95	88.35	0.88	53.01	636.12
	60	100	DMF 97%	40	38.8	0.39	23.28	279.36
	60	100	Methano l 95%	35	33.25	0.33	19.95	239.40
LACOSAMIDE	60	20	Ethyl Acetate 95%	45	43	2.15	129.00	1548.00
	60	20	Toluene 97%	32	31.04	1.55	93.12	1117.44
	60	20	DCM 93%	48	44.64	2.23	133.92	1607.04
BISOPROLOL FUMERATE	60	100	Toluene 97%	300	291	2.91	174.60	2095.20
LEVOCETRIZINE DIHCL	60	90	Toluene 97%	180	175	1.94	116.67	1400.00
	60	90	Cyclohe xane 95%	188	179	1.99	119.33	1432.00
	60	90	MDC 93%	200	186	2.07	124.00	1488.00
	60	90	Ethyl Acetate 95%	204	194	2.16	129.33	1552.00
	60	90	Acetone 93%	165	153	1.70	102.00	1224.00
VENLAFAXINE HCL	12	100	MDC 93%	300	279	2.79	33.48	401.76
	12	100	Toluene 97%	360	349.2	3.49	41.90	502.85
	12	100	MeOH 93%	328	305.04	3.05	36.60	439.26
	12	100	CHCl3	359	333.87	3.34	40.06	480.77

			93%					
	12	100	MEK 95%	399	379	3.79	45.48	545.76
	12	100	IPA 93%	298	277.14	2.77	33.26	399.08
	12	100	n- heptane 95%	200	190	1.90	22.80	273.60
TADALAFIL	12	15	Methano I 95%	26.2	24.89	1.66	19.91	238.94
	12	15	IPA 93%	19.5	18.13	1.21	14.50	174.05
	12	15	DCM 93%	50	46.5	3.10	37.20	446.40
LINEZOLID	35	90	Methano I 95%	305	290	3.22	112.78	1353.33
	35	90	MDC 93%	577	536	5.96	208.44	2501.33
	35	90	Ethyl Acetate 95%	450	427.5	4.75	166.25	1995.00
	35	90	Acetone 93%	500	465	5.17	180.83	2170.00
AMISULPRIDE	12	2	Acetone 93%	6.3	5.85	2.93	35.10	421.20
	12	2	Isopropyl alcohol 93%	1.5	13.95	6.98	83.70	1004.40
MONTELUKAST SODIUM	12	750	Toluene 97%	67.5	65.475	0.09	1.05	12.57
	12	750	Acetonitr ile 95%	58.5	55.57	0.07	0.89	10.67
	12	750	Methano I 95%	70	66.5	0.09	1.06	12.77
	12	750	n- Hexane 95%	130	123.5	0.16	1.98	23.71

F-2 VOC emission sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

N o.	Emission Source	Probable Pollutant Emission	Control measures
1	Solvent Storage area	VOC (Air Pollutant)	Carry out work place area monitoring to find out concentration level in ambient air. Connected with vent condensers with child brine circulation. Close handling system. Provision of breather valve cum flame arrester
2	Solvent Recovery System	VOC (Air Pollutant)	Vacuum distillation Close handling system.

			There will be recovery of more than 95-98% solvent.		
3	Solvents & Liquid raw material transferring to reactor	VOC, Acid fumes (Air Pollutant)	Feeding of Solvents & liquid raw materials will be carried out by closed pipeline and mechanical seal pump		
4	Flange joints of pipeline, pump & motors	VOC (Air Pollutant)	Routine & periodic inspection to check leakage. Preventive maintenance, follow SOP for maintenance. Pumps & motors mechanical seal type. LDAR program will be followed.		
-					
F-3	LDAR proposed:				
<u>LDAR Program</u>					
<input type="checkbox"/> Solvent losses monitoring <ul style="list-style-type: none"> ✓ In awarding, 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. ✓ 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 through handheld VOC meter (photoionization detection (PID) sensor technology) shall be carried out at the shopfloor. ✓ Periodic Leakage Audit at Plant and PDCA approach to be followed for control of leakages 					
<input type="checkbox"/> Preventive Maintenance <ul style="list-style-type: none"> ✓ In order to prevent leakage from Pump, Seals, Valves etc, preventive maintenance shall be carried out periodically as per plan. In case of any recurring problem, action plan shall be prepared or frequency shall be revised. 					
<input type="checkbox"/> Immediate Corrections in case of Leakages <ul style="list-style-type: none"> ✓ Plant shall have an internal competent team of Technicians and Engineers to handle different types of leakages round the clock. ✓ Plant shall also maintain adequate number of spares and consumables required 					
<u>Comments:</u>					
<ul style="list-style-type: none"> ➤ Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement. ➤ Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs). 					
G	Hazardous waste				
G-1	Hazardous waste management matrix				
Sr. No.	Particulars	Source of Generation	Category	Generation Qty. (Annum)	Hazardous Waste disposal/Management

1.	ETP Sludge	From Effluent treatment plant	35.3	180 MT	Collection, Storage, Transportation & Disposal at active TSDF site.
2.	Used/ Spent Oil	From plant machineries as lubricant	5.1	1.0 KL	Collection, Storage, Transportation, Disposal by selling to GPCB/ MoEF approved recycler/ reuse as lubricant within premises.
3.	Discarded Containers/ Bags/ Barrels	From raw material storage area	33.1	25 MT	Collection, Storage, Transportation, Decontamination, Disposal by send to the authorized dealer.
4.	Dilute HCl (25-30%)	From scrubber attached to reaction vessel	26.1	630 KL	Collection, Storage & reuse in process again OR Collection, Storage, Transportation & Disposal by selling to authorized users having rule 9 permission.
5.	Spent Carbon/Spent Hy – flow	During manufacturing process	28.3	149 MT	Collection, Storage, Transportation & Disposal by send it for co-processing / disposal at active TSDF site.
6.	Spent Catalyst	During manufacturing process	28.2	73 MT	Will be sent back for registration/reactivation to supplier
7.	Process Waste	During drying process of product/ from process	28.1	191 MT	Collection, Storage, Transportation & Disposal at active TSDF site
8.	Spent Solvent	From distillation process/ Solvent recovery system	20.2	5136 MT	Collection, Storage & reuse in process again OR Collection, Storage, Transportation & Disposal by selling to authorized users having rule 9 permission.
9.	Distillation Residue	During distillation process	36.1	207 MT	Collection, Storage & disposal by send it to CHWIF site for incineration.
10.	Organic Waste/ Residue	During manufacturing process	28.1	559 MT	Collection, Storage & disposal by send it to CHWIF site for incineration.
11.	Inorganic Waste/ Residue	During manufacturing process	28.1	685 MT	Collection, Storage, Transportation & Disposal at active TSDF site.

12.	Sodium Sulphate	From process of product Topiramate	26.1	327 MT	Collection, Storage, Transportation & Disposal at active TSDF site/ Sell to Actual users.
13.	NaBr Salt	F From process of product BROMHEXINE HCL	26.1	352 MT	Collection, Storage, Transportation & Disposal at active TSDF site/ Sell to Actual users.
14.	Sodium Chloride	From process of product like Etoricoxib	26.1	71 MT	Collection, Storage, Transportation & Disposal at active TSDF site/ Sell to Actual users.
15.	Bleed Liquor Form Scrubber	From Scrubber	20.2	876 KL	Collection, Storage & Send to ETP for further treatment.
Comments: <ul style="list-style-type: none"> ➤ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement. ➤ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB. 					
G-2	Non- Hazardous waste management matrix				
Not applicable					
H	SAFETY details				
H-1	Details regarding storage of Hazardous chemicals				
-					
-					
	Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
	1	Hydrochloric acid	9.5 KL	1	Corrosive
	2	Liquor Ammonia	30 KL	2	Corrosive
	3	Acetic Anhydride	15 KL	1	Toxic & Corrosive
	4	Ethyl Acetate	10 KL	1	Flammable & Toxic
	5	Acetone	13 KL	1	Toxic
	6	Thionyl Chloride	10 KL	1	Corrosive
	7	Ethanol	10 KL	1	Flammable & Toxic
	8	Methanol	20 KL	1	Flammable &

				Toxic
9	Cyclohexane	10 KL	1	Flammable
10	Dimethyl Sulfate	8.0 KL	1	Toxic
11	EDC	10.0 KL	1	Toxic
12	IPA	20 KL	1	Flammable
13	MDC	10 KL	1	Toxic
14	Citric Acid	10 KL	1	Corrosive
15	I-Propoxy Ethanol	10 KL	1	Explosive
16	Epi Chlorohydrin	20 KL	1	Explosive
17	Mono Methyl Amine	10 KL	1	Flammable
18	Sodium Hypochlorite	20 KL	2	Corrosive

Brief note on storage of Hazardous chemicals in Tanks

- There will be separate storage area for Liquid Materials.

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: <ul style="list-style-type: none"> ✓ 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

		<p>earth cover.</p> <ul style="list-style-type: none"> ○ Provided with external anti-corrosive coating or cathodic protection to prevent corrosion ; ○ Covered by earth, sand or any other non-corrosive material free from abrasive particles likely to damage the anti-corrosive coating of the vessel-the thickness of the covering material above the top surface of the vessel shall not be less than 0.5 meter; ○ Having the discharge level of the safety relief valves at least 2 meters above the top surface of the vessel, but in any case not less than 3 meters from the ground level; ○ Fitted with the necessary piping's, fittings, valves and other mounting on top of vessel in such a manner that they can be operated and maintained without disturbing the earth cover. In case of above ground vessel with earth cover (mound), liquid outlet pipe at the bottom may be allowed provided the control valve and emergency valve of this line is just outside the earth cover for the purpose of operation and maintenance from outside. <ul style="list-style-type: none"> ✓ 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 ✓ Lightning 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 <p>PESO Area Storage & Handling Safety: (UNLOADING)</p> <ul style="list-style-type: none"> ✓ 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 	
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		<p>be provided near filling points.</p> <ul style="list-style-type: none"> ✓ 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	<p>Safety measures for Acid storage Tank:</p> <ul style="list-style-type: none"> ✓ 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. 	

	<ul style="list-style-type: none"> ✓ Double drain valve will provide. ✓ Level gauge will be provided on all storage tanks. ✓ Safety permit for loading unloading of hazardous material will be prepared and implemented. TREM CARD will be provided to all transporters and will be trained for transportation Emergency of Hazardous chemicals. ✓ Fire hydrant system with jockey pump as per TAC norms will be installed. <p>Safety Measures of Non-PESO Tank</p> <ul style="list-style-type: none"> ✓ 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 provide. ✓ Level gauge will be provided on all storage tanks. ✓ Fire hydrant system with jockey pump as per TAC norms will be installed 					
<p>➤ Applicability of PESO: Yes. Unit will obtain PESO License for storage of chemicals.</p> <p>Comments:</p> <p>➤ 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.</p>						
H-2	Types of hazardous Processes involved and its safety measures:					
<table border="1"> <thead> <tr> <th data-bbox="181 1608 424 1709">Type of Process</th> <th data-bbox="424 1608 1374 1709">Safety measures including Automation</th> </tr> </thead> <tbody> <tr> <td data-bbox="181 1709 424 2027">Hydrogenation</td> <td data-bbox="424 1709 1374 2027"> <ul style="list-style-type: none"> ✓ DCS (Distributed Control System) will be provided in plant for handling of hydrogenation process. ✓ All electrical equipment shall be installed as per Hazardous Area Classification. ✓ Total enclosed process system. ✓ Instrument & Plant Air System. ✓ Nitrogen blanketing in Hydrogenation reactor. </td> </tr> </tbody> </table>	Type of Process	Safety measures including Automation	Hydrogenation	<ul style="list-style-type: none"> ✓ DCS (Distributed Control System) will be provided in plant for handling of hydrogenation process. ✓ All electrical equipment shall be installed as per Hazardous Area Classification. ✓ Total enclosed process system. ✓ Instrument & Plant Air System. ✓ Nitrogen blanketing in Hydrogenation reactor. 		
Type of Process	Safety measures including Automation					
Hydrogenation	<ul style="list-style-type: none"> ✓ DCS (Distributed Control System) will be provided in plant for handling of hydrogenation process. ✓ All electrical equipment shall be installed as per Hazardous Area Classification. ✓ Total enclosed process system. ✓ Instrument & Plant Air System. ✓ Nitrogen blanketing in Hydrogenation reactor. 					

	<ul style="list-style-type: none"> ✓ 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 prepared 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. 	
Sulphonation/ Chlorination (Thionyl Chloride)	<ul style="list-style-type: none"> ✓ DCS (Distributed Control System) will be installed for handling of Hydrogenation Process. ✓ Total enclosed process system. ✓ Safety valve, rupture disk provided on reactor and pressure storage tanks. ✓ Static earthing and electric earthing (Double) will be provided. ✓ Jumpers for static earthing on pipeline flanges of flammable chemical provided. ✓ Flame proof light fitting installed where ever it is required. ✓ Scrubbers provided on all process vents Storage area is away from the process plant ✓ Fencing and caution notes and hazard identification boards displayed near storage area. ✓ Only authorized person are permitted in storage area. ✓ Safety permit for hazardous material loading unloading is prepared and implemented. ✓ Static earthing provision is made at all loading unloading points of flammable chemical storage area. ✓ Caution note, safety posters, stickers and emergency preparedness plan will be displayed. ✓ Emergency facilities and medical emergency facilities are available at site. ✓ Wind direction indicators to be provided. ✓ Emergency siren installed at main gate as well as in all plant. ✓ Training to be provided to all employees on chemical safety and process safety. 	
Bromination	<ul style="list-style-type: none"> ✓ DCS (Distributed Control System) will be installed for handling of Bromination Process. ✓ All end nozzles in bromine charging hose will be blinded after 	

		<p>use.</p> <ul style="list-style-type: none"> ✓ Charging of bromine will be done when reactor is in vacuum and POP coated funnel will be used during charging. ✓ Excess bromine will be neutralized 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 (Permissible Exposure Limit). ✓ Work instructions for bromine charging will be displayed in local language Gujarati/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. ✓ Evacuate the area in down wind direction: ✓ For Bromine evacuate area in down wind direction up to 0.6 km (600 meter) in small spillage and in case of large spillage, evacuate the area in down wind direction 3.1 kms (3100 meters). ✓ In emergency situations resulting from vehicle accidents: ✓ Notify the local police, fire departments, emergency responders and the carrier. ✓ Isolate the area. ✓ Any person not dressed in proper protective clothing and not using an approved self-contained breathing apparatus should be kept a safe distance away. ✓ Call to the supplier. 	
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	✓ Seek immediate medical assistance for those injured and follow recommended first aid procedures.			
H-3	Details of Fire Load Calculation			
Total Plot Area:		7140 m ²		
Area utilized for plant activity:		3191 m ²		
Area utilized for Hazardous Chemicals Storage:		1103 m ²		
Number of Floors:		02		
Water requirement for firefighting in KLD:		16.3595 KL for 1.5 hr.		
Water storage tank provided for firefighting in KLD:		300		
Details of Hydrant Pumps:		90 HP Electric jockey pump (2 Nos.)		
Nearest Fire Station:		DPMC Fire Station Ankleshwar, Plot No. G/S-3, Nr. Jayaben Hospital, GIDC Ankleshwar (Within 5 KM from Project Site)		
Applicability of Off-Site Emergency Plan:		--		
Comments:				
➤ The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 300 KL. SEAC found it as per the requirement.				
H-4	Details of Fire NOC/Certificate:			
Shall be obtained after receipt of EC.				
H-5	Details of Occupational Health Centre (OHC):			
-				
Number of permanent Employee:		75		
Number of Contractual person/Labour:		16		
Area provided for OHC:		100		
Number of First Aid Boxes:		As per require		
Nearest General Hospital:		Jayaben Hospital, Ankleshwar GIDC		
Name of Antidotes to be store in plant:		As per require		
-				
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.				
Details of Environmental Management Plan (EMP)				As below:
Sr. No	Unit	Detail	Capital Cost (Rs. In Crores)	Total Recurring Cost (Rs. In Crores)
1	Waste Water	Cost of ETP	0.5	0.15
2	Air	Cost of APCM	0.21	0.05
3	Hazardous	Cost of designated	0.12	0.2

	Management	Storage Area, storage, handling and disposal cost		
4	Fire & Safety	Fire hydrant system	1.501	0.36
5	AWH Monitoring	NABL laboratory for regular monitoring	0.035	0.008
6.	Green Belt Development	Cost of tree species, manure, tree planting and regular maintenance	0.05	0.011
7.	Occupational Health	Antidotes, Medical kits & PPEs etc.	0.37	0.12
8.	CER Activity	Unit will provide fund 4% of total project cost to Environmental activities	0.62	----
Total			3.406	0.909

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.

11) DELIBERATION AND RECOMMENDATION:

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

- 1) Authenticated documents with technical justification regarding proposed product 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.

12	SIA/GJ/IND3/247346/2021	M/s. Darshan Industries Plot No. 1802, G.I.D.C Estate, Ankleshwar, District: Bharuch, Gujarat	EC
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Category of the unit: **5 (f)**

Project status: **Expansion**

In context to above subject matter finds below the recommendation of SEAC for your perusal.

1) Details of Application:

1.1. Type of application:	EC-Expansion
1.2. Proposal no.	SIA/GJ/IND3/247346/2021

1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	24.12.2021
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. &Date :	Not applicable as project is categorized as B2
1.7. Technical expert / Environmental Consultant :	M/s Ecopreneur Incorporate
1.8. SEAC Meeting No. and Date:	381 st meeting dated 15.03.2022
1.9. Compliance of Existing EC & CCA	<ul style="list-style-type: none"> ➤ GPCB has been issued a Consolidated Consent and Authorization [CCA] on the name of M/s. Komal Pharmaceuticals vide order no. AWH-101425, valid up to 14/05/2024 for manufacturing of inorganic chemicals. ➤ EC issued by SEAC vide order on the M/s. Komal Pharmaceuticals vide order no. SEIAA/GUJ/EC/5(f)/2/2020 dated 07/01/2021. ➤ Unit has transferred EC on the name of M/s. Darshan Industries vide order no. SEIAA/GUJ/EC/5(f)/1045/2021 on Dated: -02/07/2021. ➤ Based on Granted EC, GPCB has granted name change application in Existing granted CCA from M/s. Komal Pharmaceutical to M/s. Darshan Industries having inward ID-15287 on dated 08.07.2020. ➤ After that unit has obtained EC to CTE on the name of M/s. Darshan Industries for organic products vide order no. CTE-47344 from GPCB and same has been granted on dated: - 07/06/2021.

2) This is an Expansion project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below.

Product Table

Sr. no.	Name of the Products	API OR INTERMEDIATE	CAS no.	Quantity MT/Month			End-use of the products *
				Existing	Proposed	Total	
1	Magnesium Stearate	---	557-04-0	3.0	0.0	3.0	It is used in Medication capsules.
2	Calcium Stearate	---	1592-23-0	3.0	0.0	3.0	It is used in pharmaceutical industry include tablet mold release, anti-tack agent, and gelling agent.
3	Zinc Stearate	---	557-05-1	3.0	0.0	3.0	It is used as a water-repellent, a protective agent used in powders and ointments in the treatment of eczema, acne, and other skin diseases.
4	Aluminium Stearate	---	637-12-7	3.0	0.0	3.0	It is used as an anticaking agent; colorant; emulsion stabilizer; and viscosity increasing agent.
5	Lead Stearate	---	1072-35-1	3.0	0.0	3.0	Speciality Chemicals
6	Dibasic Lead Stearate	---	56189-09-4	3.0	0.0	3.0	Speciality Chemicals
7	Sodium Citrate	---	68-04-2	3.0	0.0	3.0	This medication is used to make the urine less acidic. Urine that is less acidic helps the kidneys get rid of uric acid, helping to prevent gout and certain types of kidney stones (urate).
8	Meta Bromo Anisole	Intermediate	2398-37-0	21.0 [Sr No. 8 to 21]	0.0	21.0 [Sr No. 8 to 50]	It is used to help relieve moderate to moderately severe pain. Tramadol is similar to opioid analgesics. It works in the brain to change how your body feels and responds to pain.
9	Tetra butyl amino bromide	Intermediate	1643-19-2				Is used to treat skin infections such as athlete's foot, jock itch, ringworm, and other fungal skin infections (candidiasis).
10	Tramadol	API	27203-92-5				It is used to help relieve moderate to moderately severe pain. Tramadol is similar to opioid analgesics. It works in the brain to change how your body feels and responds to pain.
11	Micanazole Nitrate	API	22916-47-8				Is is used to treat skin infections such as athlete's foot, jock itch, ringworm, and other fungal skin infections

						(candidiasis).
12	Paracetamol	API	103-90-2			It is used to treat many conditions such as headache, muscle aches, arthritis, backache, toothaches, colds, and fevers.
13	Ondansetron HCl	API	10363-9-04-9			Is used alone or with other medications to prevent nausea and vomiting caused by cancer drug treatment (chemotherapy) and radiation therapy. It is also used to prevent and treat nausea and vomiting after surgery.
14	Ciprofloxacin	API	85721-33-1			It is used to treat a variety of bacterial infections. It belongs to a class of drugs called quinolone antibiotics. It works by stopping the growth of bacteria.
15	Bromhexine Base-HCl	API	611-75-6			It is used as a mucolytic for the treatment of respiratory disorders associated with productive cough.
16	Clotrimazole	API	23593-75-1			It is used to treat skin infections such as athlete's foot, jock itch, ringworm, and other fungal skin infections.
17	4,4,4-trifluoro-1-(4-methylphenyl)butane-1,3-dione	Intermediate	720-94-5			It is used to treat pain or inflammation caused by many conditions such as arthritis, ankylosing spondylitis, and menstrual pain .
18	Cis-[2-(2,4-Dichlorophenyl)-2-(1H-imidazol-1-ylmethyl)-1,3-dioxolan-4-yl]methyl-4-methylbenzene sulphate	Intermediate	13407-1-44-6			It is used for psoriasis, another inflammatory skin disease that causes skin flaking, skin plaques, and redness.
19	4-Sulfonamido Phenyl Hydrazine Hydrochloride	Intermediate	17852-52-7			It is used to treat pain or inflammation caused by many conditions such as arthritis, ankylosing spondylitis, and menstrual pain .
20	5-amino-2,4,6-triiodobenzene-1,3-dicarbonyl chloride	Intermediate	37441-29-5			It contrast agents are used to allow blood vessels, organs, and other non-bony tissues to be seen more clearly on a CT scan or other radiologic (x-

							ray) examination. it is used to help diagnose certain disorders of the heart, brain, blood vessels, and nervous system.
21	2,2,4,-Trichloro Acetophenone	Intermediate	4252-78-2				Is used to treat skin infections such as athlete's foot, jock itch, ringworm, and other fungal skin infections (candidiasis).
22	Atorvastatin Calcium & its Intermediates	API	134523-00-5				Atorvastatin is used along with a proper diet to help lower "bad" cholesterol and fats (such as LDL, triglycerides) and raise "good" cholesterol (HDL) in the blood.
	Tetra-butyl 2-((4R,6R)-6-(2-aminoethyl)-2,2-dimethyl-1,3-dioxan-4-yl)acetate	Intermediate	125995-13-3				
	Tert-butyl 2-((4R,6R)-6-(2-(2-(4-fluorophenyl)-5-isopropyl-3-phenyl-4-(phenylcarbamoyl)-1H-pyrrol-1-yl)ethyl)-2,2-dimethyl-1,3-dioxan-4-yl)acetate	Intermediate	125971-95-1				
23	Bisoprolol Fumarate & its Intermediates	API	66722-44-9	0.0	21.0 [Sr No. 22 to 50]		Bisoprolol is a medicine used to treat high blood pressure (hypertension) and heart failure. If you have high blood pressure, taking bisoprolol helps prevent future heart disease, heart attacks and strokes.
	4-((2-isopropoxyethoxy) methyl)phenol	Intermediate	177034-57-0				
	2-((4-((2-isopropoxyethoxy) methyl) phenoxy) methyl) oxirane	Intermediate	66722-57-4				
	1-(4-((2-isopropoxyethoxy) methyl) phenoxy)-3-(isopropyl amino) propan-2-ol	Intermediate	5790-46-5				
24	Irbesartan & its Intermediates	API	138402-11-6				Irbesartan is a medicine widely used to treat high blood pressure. Irbesartan helps to prevent future strokes, heart attacks and kidney problems.
	4'-(2-Butyl-4-oxo-1,3-diazaspiro[4,4]non-1-ene-3-yl	Intermediate	138401-24-8				

	methyl)biphenyl-2-carbonitrile					
	2-n-butyl-4-spiro cyclopenetrat e-1-((2'-triphenyl methyl tetrazol-5-yl) biphenyl-4-yl methyl)-2-imidazole	Intermed iate	12475 1-00-4			
25	Dabigatran & its Intermediates	API	21191 5-06-			Dabigatran is used to treat deep vein thrombosis (DVT; a blood clot, usually in the leg) and pulmonary embolism (PE; a blood clot in the lung) in adults and children 3 months of age and older who have been treated with an injectable anticoagulant ('blood thinner').
	3-[(2-[(4-(Hexyloxy carbonylamino-imino-methyl)-phenylamino)-methyl]-1-methyl-1H-benzoimidazol e-5-carbonyl)-pyridine-2-yl-amino]-propionic acid ethyl ester	Intermed iate	21 19 15- 06- 9			
	3-({2-[(4-carbamimidoyl-phenylamino)-methyl]-1-methyl-1H-benzoimidazol e-5-carbonyl}-pyridine-2-yl-amino)-propionic acid ethyl ester hydrogen chloride	Intermed iate	76 47- 01- 0			
	3-({2-[(4-cyano-phenylamino)-methyl]-1-methyl-1H-benzoimidazole -5-carbonyl}-pyridine-2-yl-amino)-propionic acid ethyl ester methanesulfoate	Intermed iate	21 19 15- 84- 3			
	3-(3-Amino-4-methylamino-benzoyl)-pyridine-2-yl-amino-	Intermed iate	21 23 22- 56-			

	propionic acid ethyl ester		0					
26	Phenylephrine HCl & its Intermediates	API	61-76-7			Phenylephrine is a medication primarily used as a decongestant, to dilate the pupil, to increase blood pressure, and to relieve hemorrhoids.		
	3-acetylphenyl acetate	Intermediate	2454-35-5					
	3-(2-bromoacetyl)phenyl acetate & 2-(benzyl(methyl)amino-1-(3-hydroxyphenyl)ethane-1-one	Intermediate	38396-89-3					
	3-(1-hydroxy-2-(methylamino)ethyl)phenol	Intermediate	532-38-7					
27	Rosuvastatin Calcium & its Intermediates	API	147098-20-2			Rosuvastatin is used along with a proper diet to help lower "bad" cholesterol and fats (such as LDL, triglycerides) and raise "good" cholesterol (HDL) in the blood. It belongs to a group of drugs known as "statins."		
	N-[5-(bromomethyl)-4-(4-fluorophenyl)-6-isopropylpyrimidin-2-yl]-N-methyl methane sulfonamide. TPP salt	Intermediate	799842-07-2					
	Tert-butyl 2-((4R,6S)-6-((E)-2-(4-(4-fluorophenyl)-6-isopropyl-2-(N-methylmethylsulfonamido)pyrimidin-5-yl)vinyl)-2,2-dimethyl-1,3-dioxan-4-yl)acetate	Intermediate	289042-12-2					
	monomethylamine salt of rosuvastatin	Intermediate	287714-41-4					
28	Glimepiride & its Intermediates	API	93479-97-1			Glimepiride is a medicine used to treat type 2 diabetes. Type 2 diabetes is a condition where the body doesn't make enough insulin, or the insulin that it makes doesn't work properly.		
	3-ethyl-4-methyl-2-oxo-2,5-dihydro pyrrole-1-carboxylic acid phenethylamide	Intermediate	247098-18-6					
	3-ethyl-4-methyl-2-oxo-2,5-dihydro pyrrole-1-	Intermediate	119018-29-0					

	carboxylic acid[2-4(-sulfamoyl phenyl) ethyl] amide					
29	Gabapentin	API	60142-96-3			Gabapentin is used with other medications to prevent and control seizures. It is also used to relieve nerve pain following shingles (a painful rash due to herpes zoster infection) in adults.
30	Amisulpiride	API	53583-79-2			It is used to ease the symptoms of schizophrenia.
31	Losartan Potassium	API	124750-99-8			Losartan is used to treat high blood pressure (hypertension) and to help protect the kidneys from damage due to diabetes.
32	Terbinafine Hydrochloride	API	78628-80-5			Terbinafine is an antifungal medicine. It is used to treat skin infections caused by a fungus (yeast), including: athlete's foot, fungal nail infections.
33	Pregabalin	API	148553-50-8			Pregabalin is used to relieve neuropathic pain (pain from damaged nerves) that can occur in your arms, hands, fingers, legs, feet, or toes.
34	Ornidazole	API	16773-42-5			It is used to treat people who have certain types of vaginal, urinary tract and intestinal infections, or some specific infections that are in the body.
35	Lisinopril	API	83915-83-7			Lisinopril is used to treat high blood pressure. Lowering high blood pressure helps prevent strokes, heart attacks, and kidney problems.
36	Moxifloxacin	API	186826-86-8			Moxifloxacin is used to treat certain infections caused by bacteria such as pneumonia, and skin, and abdominal (stomach area) infections.
37	Fluconazole	API	86386-73-4			Fluconazole is used to treat serious fungal or yeast infections, including vaginal candidiasis, oropharyngeal candidiasis (thrush, oral thrush), esophageal candidiasis (candida esophagitis).

38	Hydrochlorothiazide	API	58-93-5				Hydrochlorothiazide is used to treat edema (fluid retention; excess fluid held in body tissues) caused by various medical problems, including heart, kidney.
39	Atenolol	API	29122-68-7				Atenolol belongs to a group of medicines called beta blockers. It's used to treat high blood pressure and irregular heartbeats (arrhythmia). It can also be used to prevent chest pain caused by angina.
40	Itopride Hydrochloride	API	122892-31-3				Itopride is a compound already marketed in Japan and in some countries of Eastern Europe under the name of Ganaton.
41	Venlafaxine Hydrochloride	API	99300-78-4				Venlafaxine contains the active substance venlafaxine. Venlafaxine is an antidepressant that belongs to a group of medicines called serotonin and norepinephrine reuptake inhibitors (SNRIs).
42	Torsemide	API	56211-40-6				Torsemide is used alone or in combination with other medications to treat high blood pressure. Torsemide is used to treat edema caused by various medical problems, including heart, kidney, or liver disease.
43	Celecoxib	API	169590-42-5				Celecoxib is used to relieve pain, tenderness, swelling and stiffness caused by osteoarthritis (arthritis caused by a breakdown of the lining of the joints).
44	Pantoprazole Sodium	API	138786-67-1				Pantoprazole is used to treat certain stomach and esophagus problems (such as acid reflux).
45	Fexofenadine Hydrochloride	API	153439-40-8				Fexofenadine is an antihistamine used to relieve allergy symptoms such as watery eyes, runny nose, itching eyes/nose, sneezing, hives, and itching.
46	Sertraline Hydrochloride	API	79559-97-0				Sertraline is used to treat depression, panic attacks, obsessive compulsive

						disorder, post-traumatic stress disorder, social anxiety disorder (social phobia).
47	Levofloxacin	API	10098 6-85- 4			Levofloxacin is used to treat a variety of bacterial infections. This medication belongs to a class of drugs known as quinolone antibiotics.
48	Cetirizine Dihydrochloride	API	83881 -52-1			Cetirizine is used to temporarily relieve the symptoms of hay fever (allergy to pollen, dust, or other substances in the air).
49	Rabeprazole Sodium	API	11797 6-90- 6			Rabeprazole reduces the amount of acid your stomach makes. It's used for heartburn, acid reflux and gastro-oesophageal reflux disease (GORD) – GORD is when you keep getting acid reflux.
50	Lansoprazole	API	10357 7-45- 3			Lansoprazole reduces the amount of acid your stomach makes. It's used for indigestion, heartburn, acid reflux and gastroesophageal-reflux-disease (GORD).
R & D					0.1	
Total Production After Expansion					42.1 TPM	

- 3) 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.
- 4) The proposal was considered in the SEAC video conference meeting dated 15.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) GPCB has been issued a Consolidated Consent and Authorization [CCA] on the name of M/s. Komal Pharmaceuticals vide order no. AWH-101425, valid up to 14/05/2024 for manufacturing of inorganic chemicals.
- 8) After that, EC issued by SEAC vide order on the M/s. Komal Pharmaceuticals vide order no. SEIAA/GUJ/EC/5(f)/2/2020 dated 07/01/2021.
 - ✓ Unit has transferred EC on the name of M/s. Darshan Industries vide order no. SEIAA/GUJ/EC/5(f)/1045/2021 on Dated: -02/07/2021.
 - ✓ Based on Granted EC, GPCB has granted name change application in Existing granted CCA from M/s. Komal Pharmaceutical to M/s. Darshan Industries having inward ID-15287 on dated 08.07.2020.

900 Sq. m.

0.0 Sq. m.

900 Sq. m.

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B-2 Area adequacy

Sr. No.	Area List	Area in Sq. m.				%
		Ground Floor	First Floor	Second floor	Total Area	
1	Production Area: Existing	0	85	85	170	
	RM	50	0	0	50	
	F.G storage	35	0	0	35	
	Total existing area	85	85	85	255	9
2	Production: Proposed	0	115	115	230	
	Raw Material Area	70	0	0	70	
	F.P Storage Area	45	0	0	45	
	Total Proposed area	115	115	115	345	13
3	ETP Area	80	0	0	80	9
4	Spent solvent area	30	0	0	30	3
5	Fresh solvent area	20	0	0	20	2
6	Utility Area	55	0	0	55	6
7	Office Area/OH centre	30	30	30	90	3
8	Green Belt Area	135	0	0	135	15
9	Open Area	350.00	0	0	350	39
	Total	900.000				100

Area Adequacy table:

- Production capacity: 42.0 MT/Month.
- List of Hazardous chemicals stored in tanks shown below.

S. N.	Name of chemical	Quantity (Nos.)	Total (Nos.)	Total Qty. to be store
Non-PESO Storage				
1	Sulphuric Acid	250 Lit	36 Nos.	8.86 KL
2	Hydrochloric Acid	250 Lit	33 Nos.	8.16 KL
3	Nitric acid	250 Lit	3 Nos.	0.73 KL
PESO Storage				
1	Acetone	250 Lit	30 Nos.	7.4 KL
2	EDC	250 Lit	13 Nos.	3.18 KL
3	Ethanol	250 Lit	10 Nos.	2.45 KL
4	MDC	250 Lit	19 Nos.	4.71 KL
5	Methanol	250 Lit.	38 Nos.	9.33 KL
6	THF	250 Lit.	2 Nos.	0.34 KL
7	Toluene	250 Lit.	24 Nos.	5.83 KL
Set of Cylinder and Bottles				
1	Hydrogen	60 Kg	4 Nos.	0.20 m ³
2	Ammonia	50 Kg	9 Nos.	0.44 m ³
3	Bromine Solution	3 Kg	193 Nos.	0.58 MT

- Area required for ETP 80 m².
- 55 m² area provided for the Boiler House.
- 230 m² (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) for existing	Bags/Drums: 186 Nos. (1 Bag/ 0.5 m ²)	4.9	32.6	35
2	Finished product storage area (1-week inventory) for proposed	Bags/Drums: 186 Nos. (1 Bag/ 0.5 m ²)	4.9	32.6	45
3	Raw Material Storage Area Drum (1-week inventory) (G+2) Existing	Drums: 50 Nos. (1 Drum/ 0.5 m ²)	6	15	25
4	Raw Material Storage Area Bags (1-week inventory) (G+2) Existing	Bags: 80 Nos. (1 Drum/ 0.5 m ²)	2	8	15
5	Raw Material Storage Area Drum (1-week inventory) (G+2) Proposed	Drums: 50 Nos. (0.5 MT/1m ²)	15	37.5	40
6	Raw Material Storage Area Bags (1-week inventory) (G+2) Proposed	Bags: 80 Nos. (1 Bag/ 0.5 m ²)	6	24	30
7	Solvent storage area (PESO) (Storage at a time) (1-week inventory) (G+2)	Drums: 68 Nos. (1 Drum/ 0.5 m ²)	20	40	50
8	Bromine storage Area	--	0.58	16	18
9	Hydrogen storage Area	--	0.20	2	4
10	Ammonia Storage Area	--	0.44	6	10
			60.02 MT	213.7 m²	272 m²

- 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	Proposed (Sq. meter)	Total (Sq. meter)
Area in Sq. meter	365	0.0	365
% of total area	40	0	40
Note: - Inside Premises: - 135 Sq. M (15 %) + Outside Premises 230 Sq. meter (25%)			

Comments:

The condition shall be given that -

- The PP shall develop green belt [135 m² (15%) inside plant premises + 230 m² (25%) at Common Plot in Ankleshwar GIDC= Total: 365 Sq. m.) i.e., 40% 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.

C Employment**Employment generation**

Total
20

-

D WATER**D-1 Source of Water Supply**

- Ankleshwar 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	Remarks
(S) Domestic	3.00	2.00	5.00	
(T) Gardening	2.00	2.00	4.00	
(U) Industrial				
Process	9.30	8.90	18.20	
Washing	3.50	2.20	5.70	
Boiler	5.32	4.28	9.60	
Cooling	2.20	2.20	4.40	
Scrubber	0.60	0.00	0.60	
Industrial Total	20.92	17.58	38.50	
Grand Total (A+B+C)	25.92	21.58	47.50	

-

Comments:

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

D-3 Waste water generation (KLD)

-

Category	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD	Remarks
(O) Domestic	3.00	1.50	4.50	
(P) Industrial				
Process	6.80	12.01	18.81	
Washing	3.50	2.20	5.70	
Boiler blow down	0.92	1.12	2.04	
Cooling Bleed off	0.45	0.50	0.95	
Scrubber	0.00	0.00	0.00	
Industrial Total	11.67	15.83	27.50	
Total [1 + 2 + 3]	14.67	17.33	32.00	

-

Comments:

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

D-4 Break-up of waste water disposal & facility (For Domestic)**4.5 KLD Domestic Wastewater shall be treated in ETP.****Comments:**

Domestic wastewater generation shall not exceed 4.5 KL/day for proposed project, and it shall be treated in ETP-II. It shall not be disposed off through soak pit/ septic tank.

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

Sr. no.	Quantity KLD	Facility
1	18.81	After Expansion total effluent generated from the process shall be collected and treated into ETP I [Primary Treatment] and after treatment effluent will be passed from stripper. After stripper strip out solution shall be mixed with ETP II effluent.
2	8.69	After expansion, effluent from ETP I shall be mixed with effluent generated from the utility and washing section. Effluent shall be collected and treated in to Primary + Secondary + Tertiary

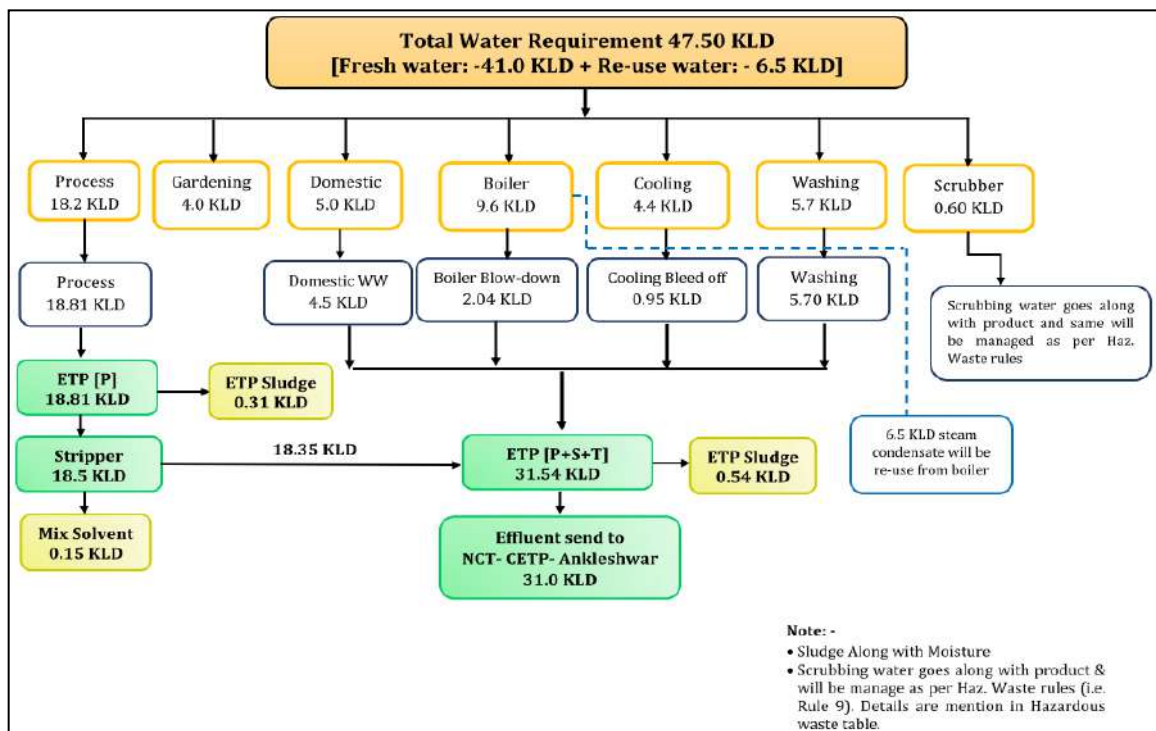
treatment plant and then send to CETP-NCT for further treatment and disposal.

Total 27.5

Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)

Membership certificate of CETP-NCT: -
NCT/BQC/Transfer/2020/July-80, Date: -10-07-2020

D-5b Simplified water balance diagram



D-5c Summary

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	47.50	
Quantity to be recycled (B)	6.5	
Total fresh water requirement (C)	41.0	
Ensure Total water requirement = Fresh water + Recycled water i.e. A = B + C		

Comments:

- ✓ Total water requirement for the project shall not exceed 47.50 KLD. Unit shall reuse 6.5 KLD of treated industrial effluent within premises. Hence, freshwater requirement shall not exceed 41.0 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.

- ✓ Management of Industrial effluent shall be as under:
- ✓ After Expansion 18.81 KLD total effluent generated from the process shall be collected and treated into ETP I [Primary Treatment] and after treatment effluent will be passed from stripper. After stripper strip out solution shall be mixed with ETP II effluent.
- ✓ After expansion, 18.35 KLD effluent from ETP I shall be mixed with 8.69 KLD effluent generated from the utility and washing section and 4.5 KLD effluent from domestic section. 31.54 KLD Effluent shall be collected and treated into Primary + Secondary + Tertiary treatment plant and then send to CETP-NCT for further treatment and disposal.
- ✓ Unit shall send waste water to CETP-NCT only after achieving inlet norms prescribed by GPCB ensuring content of effluent for COD so as not to get air borne during spray drying after APCM in order to achieve no adverse impacts on Environment and Human Health.
- ✓ Unit shall provide ETP with adequate capacity.
- ✓ The PP shall ensure to dispose of Wastewater to the Common Facilities having valid CTO of GPCB.

E	AIR					
E-1	Power (Electricity) requirement :100 KVA					
E-2	Flue gas emission details					
-						
Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
Existing						
1.	Boiler [Cap. 0.8 TPH]	11	Natural Gas	180 Nm ³ /Day	PM SO ₂ NO _x	Adequate Stack height
2.	Hot Air Generator	11				
3.	Boiler [Cap. 0.8 TPH]	20	Natural Gas	630 Nm ³ /Day		
4.	DG Set [Capacity: -55 KVA] For Emergency Purpose	12	Diesel	50 Lit/Day.		
After Expansion						
1.	Boiler [Cap. 1 TPH]	33	Natural Gas	850 Nm ³ /Day	PM SO ₂ NO _x	Adequate Stack height
2.	Hot Air Generator [Cap. 2 Lakh K Cal/Hr.]	33	Natural Gas	220 Nm ³ /Day		
3.	Thermic Fluid Heater [Cap. 2 Lakh K Cal/Hr.]	33	Natural Gas	400 Nm ³ /Day		

4.	DG Set [Capacity: -100 KVA] For Emergency Purpose	15	Diesel	60 Lit/Day.		
Note: -After Expansion, unit will installed only 1 Nos. of boiler having total capacity of 1.0 TPH. , 1 Nos. of HAG and TFH and DG Set.						

E-3 Process gas

Sr. no.	Specific Source of emission (Name of the Product & Process)	Type of emissions i.e. Air Pollutants (SO ₂ , HCl, Cl etc.)	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
After Expansion				
1.	Spin Flash Driers	PM-150 mg/Nm ³	11	Bag Filter
2.	Reaction Vessel:-I [HBr From Product no: 10,18] [SO ₂ From Product no:19,20]	HBr, SO ₂	15	Two Stage Alkali scrubber
3.	Reaction Vessel-II [From Product no: - 14,18,21,25,37,45]	HCl	15	Two Stage scrubber [Water Scrubber + Alkali scrubber]
4.	Reaction Vessel-III [From Product no: - 8]	NO ₂	15	Two Stage Alkali Scrubber

E-4 Fugitive emission details with its mitigation measures.

- For fugitive emission such as VOCs, VOC detectors will be installed.
- Leak Detection and Repair (LDAR) program shall be implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment.
- To control fugitive emission from process / reaction, all reactor condensers shall be connected to a scrubber to minimize loss of solvents / fugitive emission in to the atmosphere.

Comments for E2, E3 & E4:

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

reaction condensers, thermic fluid heaters, boilers, and scrubbing systems as per the requirements, to achieve the emission norms prescribed by the competent authorities.

F Solvent management, VOC emissions etc.

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

Sr. No.	Product	Solvent	Fresh Qty MT/Month	Recover Qty MT/Month	Boiling Point	Percentage Recovery
						%
8	Meta Bromo Anisole	Toluene	19.5	19.1	110.6°C	98.0
		Methanol	11.0	10.8	64.7 °C	98.0
9	tetra butyl amino bromide	Acetonitrile	5.5	5.3	82°C	96.5
		Ethyl Acetate	8.4	8.1	77.1°C	96.6
10	Tramadol Base	MDC	2.1	2.0	39.6 °C	96.0
		Toluene	5.3	5.0	110.6°C	96.0
		IPA	6.5	6.3	82.50C	96.8
11	Micanazole Nitrate	Toluene	60.9	59.0	110.6°C	96.8
		DMSO	2.1	2.0	189°C	97.5
12	Ondansetron HCl	Toluene	21.0	20.3	110.6°C	96.5
		DMF	10.5	10.2	153°C	97.0
13	Ciprofloxacin	Acetic acid	13.9	13.4	118.1°C	96.5
		IPA	26.3	25.6	82.50C	97.5
14	Bromhexine Base-HCl	Toluene	21.0	19.7	110.6°C	94.0
		Monochlorobenzene(MCB)	10.5	10.1	132°C	96.0
		Methanol	21.0	20.4	64.7 °C	97.2
15	Clotrimazole	Toluene	42.0	40.3	110.6°C	96.0
		Acetone	5.2	5.0	56°C	96.3
16	4,4,4-trifluo-1-(4-methylphenyl) butane-1,3-dione	Ethanol	3.2	3.0	78.37 °C	96.0
		Methanol	2.1	2.0	64.7 °C	96.0
17	Cis-[2-(2,4-Dichlorophenyl)-2-(1H-imidazol-1-ylmethyl)-1,3-dioxolan-4-yl]methyl-4-methylbenzenesulphonate	Toluene	8.4	8.1	110.6°C	96.5
		Ethyl Acetate	6.3	6.0	77.1°C	95.5
		Methylene chloride	6.3	6.1	39.6 °C	96.5
		Methanol	4.2	4.0	64.7 °C	95.5
22	Atorvastatin Calcium	Methanol	10.5	10.1	64.7 °C	96.0
23	Bisoprolol fumarate	Toluene	8.4	8.1	110.6 °C	96.0
		Methanol	5.3	5.0	64.7 °C	96.0

		MDC	8.4	8.1	39.6 °C	96.0
		Acetone	5.3	5.0	56 °C	96.0
24	Irbesartan	DMF	2.1	2.0	153 °C	96.0
		Toluene	4.2	4.0	110.6 °C	96.0
		Ethyl acetate	10.5	10.1	77.1 °C	96.0
		IPA	8.4	8.1	82.5 °C	96.0
25	Dabigatran Etexilate	Acetic Acid	8.4	8.1	118 °C	96.0
26	Phenylepherin e HCL	Methanol	4.6	4.4	64.7 °C	96.0
		Chloroform	2.7	2.6	61.2 °C	96.0
		IPA	6.7	6.5	82.5 °C	96.0
		L(+) Tartaric acid	4.2	4.0	42.0 °C	96.0
		Acetone	2.5	2.4	56 °C	96.0
27	Rosuvastatin Calcium	Toluene	6.3	6.1	110.6 °C	96.7
		Acetone	2.1	2.0	56 °C	96.0
		Butanol	2.7	2.6	117.7 °C	96.2
28	Glimepiride	N, N'-Dimethyl formamide	29.4	28.2	153 °C	96.0
		Acetone	76.4	74.1	56 °C	97.0
		Methanol	114.5	111.0	64.7 °C	97.0
29	Gabapentin	MDC	10.5	10.1	39.6 °C	96.0
		Methanol	12.6	12.2	64.7 °C	96.7
30	Amisulpiride	Acetone	36.8	35.3	56 °C	96.0
		Isopropyl alcohol	15.8	15.1	82.5 °C	96.0
31	Flurbiprofen	Toluene	13.1	12.6	110.6 °C	96.0
		Ethanol	10.5	10.1	78.37 °C	96.0
		DMF	9.5	9.1	153 °C	96.0
		Acetic Acid	16.5	16.3	118 °C	98.4
32	Terbinafine Hydrochloride	Toluene	12.6	12.1	110.6 °C	96.0
		Isopropyl Alcohol(IPA)	10.5	10.1	82.5 °C	96.0
33	Tramadol Hydrochloride	MDC	2.1	2.0	39.6 °C	96.0
		Toluene	5.3	5.0	110.6 °C	96.0
		IPA	6.5	6.3	82.5 °C	96.8
34	Ornidazole	Methanol	20.2	19.6	64.7 °C	97.0
		MDC	20.2	19.6	39.6 °C	97.0
35	Lisinopril	Methanol	16.8	16.1	64.7 °C	96.0
36	Carvedilol	Toluene	10.7	10.3	110.6 °C	96.0
		Methanol	3.2	3.0	64.7 °C	96.0
37	Fluconazole	EDC	13.7	13.2	83.47 °C	97.0
		Toluene	31.5	30.6	110.6 °C	97.0
		IPA	14.7	14.3	82.5 °C	97.0
39	Atenolol	Mono isopropyl	147.4	141.5	32 °C	96.0

		amine				
		Acetone	287.3	275.8	56 °C	96.0
40	Itopride Hydrochloride	Toluene	8.4	8.1	110.6 °C	97.0
		Methanol	6.3	6.1	64.7 °C	97.0
		IPA	5.0	4.9	82.5 °C	97.0
41	Venlafaxine Hydrochloride	Methanol	6.3	6.0	64.7 °C	96.0
		IPA	4.2	4.0	82.5 °C	96.0
42	Torsemide	Toluene	4.2	4.0	110.6 °C	96.0
		MDC	6.3	6.1	39.6 °C	96.7
43	Celecoxib	Toluene	5.3	5.0	110.6 °C	96.0
		Ethanol	3.2	3.0	78.37 °C	96.0
		Methanol	7.4	7.1	64.7 °C	96.0
		IPA	2.9	2.8	82.5 °C	96.0
44	Pantoprazole Sodium	MDC	6.3	6.1	39.6 °C	97.0
		Acetone	4.2	4.0	56 °C	96.0
		Ethyl acetate	5.0	4.8	77.1 °C	96.0
45	Fexofenadine Hydrochloride	Toluene	4.2	4.1	110.6 °C	97.0
		Benzene	1.9	1.8	80.1 °C	97.0
		DMF	2.1	2.0	153 °C	97.0
		Chloro benzene	2.7	2.6	132 °C	97.0
		THF	1.5	1.4	66 °C	97.0
		MIBK	2.1	2.0	116 °C	97.0
		Ethyl acetate	1.7	1.6	77.1 °C	97.0
		IPA	2.5	2.4	82.5 °C	97.0
46	Sertraline Hydrochloride	Methanol	84.0	81.5	64.7 °C	97.0
		IPA	105.0	101.9	82.5 °C	97.0
47	Omeprazole	Methanol	8.4	8.1	64.7 °C	96.5
		Acetone	6.3	6.1	56 °C	96.7
48	Cetirizine Dihydrochloride	Toluene	7.4	7.1	110.6 °C	97.0
		Dimethyl formamide	4.2	4.0	153 °C	96.0
		Acetone	14.7	14.1	56 °C	96.0
49	Rabeprazole Sodium	Methanol	4.9	4.7	64.7 °C	96.0
		MDC	4.9	4.7	39.6 °C	95.5
		Ethyl acetate	7.3	7.0	77.1 °C	95.5
		Cyclohexane	4.9	4.7	80.75 °C	96.0
		Ethanol	4.9	4.7	78.37 °C	96.0
		Di-isopropyl ether	7.3	7.1	69 °C	97.0
50	Lansoprazole	Toluene	5.9	5.7	110.6 °C	96.5
		Methanol	9.8	9.5	64.7 °C	97.5
		Di isopropyl ether	4.9	4.7	69 °C	96.5

		Ethyl acetate	6.3	6.1	77.1 °C	96.0
		Acetone	7.3	7.1	56 °C	96.5
		Di isopropyl ether	4.9	4.7	69 °C	96.0
F-2	VOC emission sources and its mitigation measures					
	Measures for achieving maximum solvent recovery and minimize VOC generation:					
	<ul style="list-style-type: none"> • The entire manufacturing activities & distillation process will be carried out in a totally closed system. • Maintenance of the pipeline and valves & fittings will be carried out regularly to avoid any leakages. • Reactor will be connected with three numbers of condensers where in the first condenser chilled water will be used whereas in second and third condenser brine solution will be used as media and it will be also equipped with vacuum system as per requirement. • The condenser will be provided with sufficient HTA and residence time to achieve more than 90% recovery. • All the Flange joints of the pipe lines which carry solvents will be covered with flange guards. • VOC detectors will be installed at various places to identify any fugitive emissions. • Minimum number of flanges, joints and valves in pipelines shall be provided. 					
F-3	LDAR proposed:					
	<p>Leak Definition</p> <ul style="list-style-type: none"> • A leak is detected whenever the measured concentration exceeds the threshold standard (i.e., leak definition) for the applicable regulation. • Leak definitions vary by regulation, component type, service (e.g., light liquid, heavy liquid, gas/vapor), and monitoring interval. • Many equipment leak regulations also define a leak based on visual inspections and observations (such as fluids dripping, spraying, misting or clouding from or around components), sound (such as hissing), and smell. <p>Following steps shall be followed for effective implementation of LDAR Program:</p> <ol style="list-style-type: none"> 29. Process Controls 30. Emissions control program 31. Selection of appropriate method for leak detection 32. Scheduling and checklist for Leak Detection 33. Methods for rectification of identified leaks 34. Frequency of Monitoring 35. Record keeping of LDAR Program 					
	<p>Comments:</p> <ul style="list-style-type: none"> ➤ Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement. ➤ Spent solvents shall be recovered by in-house distillation in such a manner that recovery 					

shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

G Hazardous waste							
G-1 Hazardous waste management matrix							
Sr. No.	Name of Hazardous Waste	Source of Generation	Cat as per HWM, 2016	Quantity MT/ Year			Remarks
				Exist ing	Propo sed	Total	
1.	Empty barrels/ containers/liners contaminated with hazardous chemicals /wastes	Raw Material and Packaging	33.1	56	24	80	Collection, Storage, Transportation, Decontamination, reuse or send back to supplier, and sold to Authorized end users registered under rule-9.
2.	Used Oil	From Machinery	5.1	0.1	0.1	0.2	Collection, Storage, Transportation and sold to authorized Recyclers.
3.	ETP	ETP	35.3	129	177	306	Collection, Storage, Transportation and sent to TSDF site. (Through GPS mounted
4.	Process Residue	From Product 10,36,39 Max. Tramadol	26.1	20	0.0	20	
5.	Distillation Residue	From Product No. 8 to 11, 13 to 18, 20 to 22, 25 to 37, 39, 40 to 55 Max. Terbinafine Hydrochloride	20.3	14	22	36	Collection, Storage, transportation and sent for co-processing in cement industries disposal at CHWIF. (Through GPS mounted vehicle)
6.	Spent Carbon	From Product No. 12,14,18, 23,26,30, 35,39,43,47,49	28.3	6	2	8	

7.	Potassium Nitrite (55-65%)	From Product No. 8 Max. Meta Bromo Anisole	--	178	0.0	178	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
8.	HCl (28-33%)	APCM- Scrubber & From Product No. 14,18,21,25,37,45 Max. Cis-[2-(2,4-Dichlorophenyl)-2-(1H-imidazol-1-	--	199	0.0	199	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
9.	Sodium Bromide (15-20%)	APCM- Scrubber & From Product No. 10, 18 Max. Tramadol	--	205	0.0	205	Collection, Storage, Transportation and sell to authorized end users registered
10.	Sodium bisulfite Sol. [30-40%]	APCM- Scrubber & From Product No. 19,20 Max. 5-amino-2,4,6-triiodobenzen e-1,3-dicarbonyl chloride	---	288	0.0	288	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
11.	AlCl ₃ Solution	From Product No. 21 Max. 2,2,4, - Trichloro Acetophenone	--	490	0.0	490	
12.	Spent Solvent	From Product No. 8 to 11, 13 to 18, 20 to 22, 25 to 37, 39, 40 to 55 Max. Miconazole Nitrate	20.2	732	0.0	732	Collection, Storage, Recovery and Recycle for manufacturing of product.

13.	Spent/Mix Solvent	Stripper	28.6	54	0.0	54	Collection, Storage, Recovery and Recycle for manufacturing of product and/or Transportation and sell to authorized end users registered under rule-9 or disposal at
14.	Spent Catalyst	From Product No. 10, 11,12,49,50 Max. Rabeprazole Sodium and Lansoprazole	28.2	2	3.0	5.0	Collection, Storage, transportation and sent for co-processing in cement industries disposal at
15.	Off-Specification Products	Products	28.4	5.0	5.0	10.0	CHWIF. (Through GPS mounted vehicle)
16.	Sodium Hypochlorite Solution	APCM Scrubber	--	--	10.0	10.0	Collection, storage and utilised into ETP for further
<p>Comments:</p> <ul style="list-style-type: none"> ➤ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement. ➤ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB. 							
G-2	Non- Hazardous waste management matrix						
	<ul style="list-style-type: none"> ✓ Fly Ash generation will be Not Applicable. ✓ STP sludge generation will be Not Applicable 						
Comments:							
H	SAFETY details						
H-1	Details regarding storage of Hazardous chemicals						
-							
-							
Safety details....							

S. N.	Name of chemical	Quantity (Nos.)	Total (Nos.)	Total Qty. to be store
Non-PESO Storage				
1	Sulphuric Acid	250 Lit	36 Nos.	8.86 KL
2	Hydrochloric Acid	250 Lit	33 Nos.	8.16 KL
3	Nitric acid	250 Lit	3 Nos.	0.73 KL
PESO Storage				
1	Acetone	250 Lit	30 Nos.	7.4 KL
2	EDC	250 Lit	13 Nos.	3.18 KL
3	Ethanol	250 Lit	10 Nos.	2.45 KL
4	MDC	250 Lit	19 Nos.	4.71 KL
5	Methanol	250 Lit.	38 Nos.	9.33 KL
6	THF	250 Lit.	2 Nos.	0.34 KL
7	Toluene	250 Lit.	24 Nos.	5.83 KL
Set of Cylinder and Bottles				
1	Hydrogen	60 Kg	4 Nos.	0.20 m ³
2	Ammonia	50 Kg	9 Nos.	0.44 m ³
3	Bromine Solution	3 Kg	193 Nos.	0.58 MT

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	<p>Safety Measures for PESO Underground storage tank farm:</p> <ul style="list-style-type: none"> ✓ 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

		<p>earth cover.</p> <ul style="list-style-type: none"> ○ Provided with external anti-corrosive coating or cathodic protection to prevent corrosion ; ○ Covered by earth, sand or any other non-corrosive material free from abrasive particles likely to damage the anti-corrosive coating of the vessel-the thickness of the covering material above the top surface of the vessel shall not be less than 0.5 meter; ○ Having the discharge level of the safety relief valves at least 2 meters above the top surface of the vessel, but in any case not less than 3 meters from the ground level; ○ Fitted with the necessary piping's, fittings, valves and other mounting on top of vessel in such a manner that they can be operated and maintained without disturbing the earth cover. In case of above ground vessel with earth cover (mound), liquid outlet pipe at the bottom may be allowed provided the control valve and emergency valve of this line is just outside the earth cover for the purpose of operation and maintenance from outside. <ul style="list-style-type: none"> ✓ 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 ✓ Lightning 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 <p>PESO Area Storage & Handling Safety: (UNLOADING)</p> <ul style="list-style-type: none"> ✓ 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. 	
--	--	---	--

		<ul style="list-style-type: none"> ✓ 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 21 of 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	<p>Safety measures for Acid storage Tank:</p> <ul style="list-style-type: none"> ✓ 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. 	

	<ul style="list-style-type: none"> ✓ 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. <p>Safety Measures of Non PESO Tank</p> <ul style="list-style-type: none"> ✓ 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 					
<p>➤ Applicability of PESO: Yes. Unit will obtain PESO License for storage of chemicals.</p> <p>Comments:</p> <p>➤ 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.</p>						
H-2	Types of hazardous Processes involved and its safety measures:					
<table border="1"> <thead> <tr> <th data-bbox="181 1574 411 1641">Type of Process</th> <th data-bbox="411 1574 1374 1641">Safety measures including Automation</th> </tr> </thead> <tbody> <tr> <td data-bbox="181 1641 411 2036">Bromination</td> <td data-bbox="411 1641 1374 2036"> <ul style="list-style-type: none"> ➤ 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 </td> </tr> </tbody> </table>	Type of Process	Safety measures including Automation	Bromination	<ul style="list-style-type: none"> ➤ 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 		
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		<p>concentration of bromine vapor well below PEL.</p> <ul style="list-style-type: none"> ➤ 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	<ul style="list-style-type: none"> ➤ 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. <p>Hydrogen gas detector will be installed for early detection of gas leak.</p>
	Amination	<p><u>Ammonia Storage & Handling Safety:</u></p> <p>Atmospheric Ammonia Storage</p> <ul style="list-style-type: none"> • In case of any emergency in storage system, the feed to the storage should be stopped at once by remote and local Isolations. • Storage Failure • Flare should be ignited if it has gone off for required burning of ammonia vapour if situation demands. • Transfer of ammonia from atmospheric storage to new storage & vice-versa and subsequent consumption in plants. • Vapour pipelines failure • In case of ammonia vapour line failure, It should be flared immediately and pressure to be controlled by burning of ammonia vapour. • Any In-flow of ammonia to should not be allowed. Inform Ammonia plant

	<p>Shift In charge and other Plant In charge.</p> <ul style="list-style-type: none"> • Ammonia Storage Compressor Failure • De-energize the compressor and isolate inlet/outlet ammonia line. • Stop incoming feed to storage and flare ammonia for pressure control if required. <p><u>Ammonia storage Tank</u> Tank Bottom Nozzle Failure</p> <ul style="list-style-type: none"> • Cut off feed to tank from Ammonia plant. Ammonia plant Shift In charge to inform Shift In charge of other plant about emergency. • Transfer Ammonia to consuming plants and new storage tank, if required, ammonia plant may be shut down. • Flare storage tank vapors through remote operated valve • Guide fire hydrant monitors towards escaping ammonia vapour • Alert other plants and Security / Fire Dept. • Transfer Pump / In Plant pipelines failure • Stop transfer pumps • Close storage tank liquid outlet line isolation valve • Limit storage tank input feed • Failure of Ammonia line from storage tank to plants • In case of failure of transfer line, ensure that transfer pumps have tripped automatically and supply has immediately stopped. <p><u>Leakage of Ammonia from Storage Tank / Plant</u></p> <ul style="list-style-type: none"> • Release of Ammonia vapors which may contaminate environment. In this case, fire water hydrants should be used for spraying for escaping vapors which may lead to increase the quantity of contaminated effluent. • The effluents should not be allowed to enter into storm water drain, if not possible, for this a bund should be provided to the storm water drain. • Contaminated effluent should transfer to ETP with immediate information to neutralize Ammonia. • Inform to ETP operating staff about the emergency and to take necessary action to hold the total effluent for treatment. • Depute Laboratory person to monitor the level of Ammonia near Gates. • In case if it is more than the TLV (25 ppm), inform chief emergency controller to inform police Station to initiate Off-Site Emergency. <ul style="list-style-type: none"> ➤ If tanker unloading is going on than stop unloading, isolate all associated valves. Stop the pump.
Nitration process	➤ Not Applicable
Chlorination Process	➤ Not Applicable
H-3 Details of Fire Load Calculation	
Total Plot Area:	900 M2
Area utilized for plant activity:	415 M2
Area utilized for Hazardous Chemicals Storage:	305 M2
Number of Floors:	G+2
Water requirement for firefighting in KLD:	2375 Liter
Water storage tank provided for firefighting in KLD:	100
Details of Hydrant Pumps:	15
Nearest Fire Station :	2-4 Km
Applicability of Off Site Emergency Plan:	Yes

Comments:

- The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 200 KL. SEAC found it as per the requirement.

H-4 Details of Fire NOC/Certificate:

Shall be obtained after receipt of EC.

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

-

Number of permanent Employee:	20
Number of Contractual person/Labour:	10
Area provided for OHC:	30 M ²
Number of First Aid Boxes:	10
Nearest General Hospital:	2-4 Km
Name of Antidotes to be store in plant:	--

-

Comments

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

Details of Environmental Management Plan (EMP)

As below:

Sr. No	Unit	Details	Capital Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)
1	Waste Water	Installation cost of ETP I[P] and ETP II[P+S+T] + Stripper + Treatment cost of ETP I[P] and ETP II[P+S+T] + Stripper and NCT.	0.6	2.71
2	Air	Installation Cost of Boiler+ HAG+TFH+ DG set, and stack with Maintenance cost	0.23	0.08
3	Hazardous Management	Construction of Hazardous waste storage yard with membership certificate	0.3	0.60
4	Fire & Safety	Installation cost of all the Safety Equipment's Control Measures [i.e. Personal protective Equipment, Noise Control system, Process Safety] Installation cost of Fire Extinguisher, Fire hydrant	0.69	0.19

		line, alarm system in plant area		
6	Green Belt Development	33% of the plant area shall be developed as greenbelt.	0.015	0.01
7	Occupational Health	VOC/LDAR meter cost along with monitoring cost	0.22	0.08
8	Noise Control	Cost includes medical room, Doctor and first aids box kit	0.045	0.03
9	CER Funds	---	---	0.045
Total			2.10	3.715 Crores/Annum

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.

13) DELIBERATION AND RECOMMENDATION:

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

Conditions with which Environment Clearance is recommended:**Construction Phase**

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

- h) Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.
- i) Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. Project Proponent (PP) shall strictly abide by the outcome/decision of Hon'ble Supreme Court of India in Civil Appeal no. 8478/2020 regarding operation of the Hon'ble NGT orders dated 10/07/2019 & 14/11/2019
2. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after the 31st December 2021, 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 subsequent amendments.
4. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
5. (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.
6. 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**].
7. 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.
8. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained
9. **Safety & Health:**
 - a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals

- b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
- c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
- d) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
- e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
- f) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
- g) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
- h) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
- i) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
- j) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
- k) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
- l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

WATER

10. Total water requirement for the project shall not exceed 47.50 KLD. Unit shall reuse 6.5 KLD of steam condensate from boiler reuse within premises. Hence, fresh water requirement shall not exceed 41.0 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.

11. The industrial effluent generation from the project shall not exceed 27.5 KLD.

12. Management of Industrial effluent shall be as under:

- ✓ After Expansion 18.81 KLD total effluent generated from the process shall be collected and treated into ETP I [Primary Treatment] and after treatment effluent will be passed from stripper. After stripper strip out solution shall be mixed with ETP II effluent.
- ✓ After expansion, 18.35 KLD effluent from ETP I shall be mixed with 8.69 KLD effluent generated from the utility and washing section and 4.5 KLD effluent from domestic section. 31.54 KLD Effluent shall be collected and treated into Primary + Secondary + Tertiary treatment plant and then send to CETP-NCT for

further treatment and disposal.

- ✓ Unit shall send waste water to CETP-NCT only after achieving inlet norms prescribed by GPCB ensuring content of effluent for COD so as not to get air borne during spray drying after APCM in order to achieve no adverse impacts on Environment and Human Health.

13. Domestic wastewater generation shall not exceed 4.5 KL/Day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
14. Unit shall provide ETP with adequate capacity.
15. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.
16. The unit shall provide metering facility at the inlet and outlet of ETP, Stripper and maintain records for the same.
17. Proper logbooks of ETP, Stripper; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

18. Unit shall not exceed fuel consumption for Steam Boiler, HAG, TFH and D G Set as per the point no. E-2 as mentioned above.
19. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
20. Unit shall provide adequate APCM with process gas generation sources as the point no. E-3 as mentioned above.
21. The fugitive emission in the workzoneenvironment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
 - Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
 - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
 - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
22. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
23. For control of fugitive emission, VOCs, following steps shall be followed :
 - ✓ Closed handling and charging system shall be provided for chemicals.
 - ✓ Reflux condenser shall be provided over Reactors / Vessels.
 - ✓ Pumps shall be provided with mechanical seals to prevent leakages.
 - ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or

providing enclosures.

24. Solvent management shall be carried out as follows:

- ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
- ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
- ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
- ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
- ✓ Solvents shall be stored in a separate space specified with all safety measures.
- ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
- ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.

25. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, HCl, Br₂, HCl, NH₃, HBr and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

26. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.

27. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.

28. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.

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

30. 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

31. The PP shall develop green belt [135 m² (15%) inside plant premises + 230 m² (25%) at Common Plot in Ankleshwar GIDC= Total: 365 Sq. m.) i.e. 40 % 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.

OTHERS:

32. The project proponent shall carry out the entire activities [Rainwater harvesting system at Sanjali village] proposed under CER shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
33. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

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

13	SIA/GJ/IND3/248078/2021	M/s. Dudhat Chemicals Pvt. Ltd. Plot No 26, Umiya Industrial Estate,	EC
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Village: Indrad, Taluka: Kadi, District:
Mehsana, Gujarat

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

Project status: **New**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) Details of Application:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	SIA/GJ/IND3/248078/2021
1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	28.12.2021
1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
1.6. TOR No. &Date :	Not applicable as project is categorized as B2
1.7. Technical expert / Environmental Consultant :	M/s Enviro Fluid Consultants
1.8. SEAC Meeting No. and Date:	381 st meeting dated 15.03.2022
1.9. Compliance of Existing EC & CCA	Not Applicable

2) This is a new project proposed for manufacturing of synthetic organic chemicals [API and API Intermediates] as tabulated below;

Product Table

Sr. no.	Name of the Products	API OR INTERMEDIATE	CAS no	Quantity MT/Month	*End-use of the products
1	Acyclovir and/or its Intermediate	API	59277-89-3	50	Acyclovir is used to treat the symptoms of chickenpox, shingles, herpes virus infections of the genitals, the skin, the brain, and mucous membranes.
2	Diacetyl guanine	Intermediate (n-2)	3056-33-5		
3	Diacetyl Acyclovir	Intermediate (n-1)	75128-73-3		
4	Azithromycin	API	117772-70-0		
5	Atorvastatin Calcium	API	344423-98-9		
					It used to treat chest infections such as pneumonia, infections of the nose and throat such as sinus infection.
					It is a lipid-lowering drug included in the statin

				class of medications.
6	Rosuvastatin Calcium	API	147098-20-2	To help lower bad cholesterol and fats (such as LDL, triglycerides) and raise good cholesterol (HDL) in the blood.
7	Betamethasone	API	378-44-9	Used as Anti Inflammatory.
8	Betamethasone Dipropionate	API	5593-20-4	This medication is used to treat a variety of skin conditions.
9	Betamethasone Sodium Phosphate	API	151-73-5	This medicine is given by injection (shots) into a muscle, a joint, or a sore on the skin. It is used to reduce inflammation, irritation, and pain. It is also used to treat skin problems, arthritis, and other joint or tendon problems
10	Betamethasone Valerate	API	2152-44-5	This medication is used to treat a variety of skin conditions
11	Betamethasone Acetate	API	987-24-6	It is used to reduce inflammation, irritation, and pain. It is also used to treat skin problems, arthritis, and other joint or tendon problems.
12	Chlorhexidine base	API	55-56-1	It is used in disinfectants
13	Chlorhexidine Gluconate	API	18472-51-0	It is used to treat gingivitis (swelling, redness, bleeding gums).
14	Chlorhexidine Acetate	API	56-95-1	It is a disinfectant and antiseptic that is used for skin disinfection before surgery and to sterilize surgical instruments.
15	Chlorhexidine Hydrochloride	API	3697-42-5	It is used as a disinfectant and topical anti-infective agent used also as mouthwash to prevent oral plaque.
16	Metoprolol Base	API	51384-51-1	It is used in the treatment of hypertension and angina pectoris.
17	Metoprolol Succinate	API	98418-47-4	It is used to treat chest pain (angina), heart failure, and high blood pressure.
18	Metoprolol Tartrate and/or	API	56392-17-7	It is used to treat high

	its Intermediate				blood pressure (hypertension).
19	3-[4-(2-methoxyethyl)phenoxy]-1,2-epoxypropane	Intermediate (n-2)	56718-70-8		
20	Sevelamer Hydrochloride	API	152751-57-0		It is used to control high blood levels of phosphorus in people with chronic kidney disease
21	Sevelamer carbonate and/or its Intermediate	API	845273-93-0		It is used to lower high blood phosphorus (phosphate) levels in patients who are on dialysis due to severe kidney disease
22	Polyallylamine hydrochloride	Intermediate (n-1)	71550-12-4		
23	Allylamine HCl	Intermediate (n-2)	10017-11-5		
24	Vildagliptin and/or its Intermediate	API	274901-16-5		It is used for the treatment of Type 2 diabetes mellitus
25	(S) -1-(N-(3-Hydroxy-1-adamantyl)glycyl) Methyl pyrrolidine-2-carboxylate (Vilda-Ester)	Intermediate	565453-39-6		
26	(S) -1-(N-(3-Hydroxy-1-adamantyl)glycyl) Methyl pyrrolidine-2-carboxamide (Vildmide-4)	Intermediate	565453-39-6		
27	Teneligliptin and/or its Intermediate	API	760937-92-6		It is used to treat Type 2 diabetes patients
28	Tert butyl-(2S)-4-[4-(3-methyl-1-phenyl-1H-pyrazol-5-yl)piperazin-1-yl]-2-(1,3-thiazolidine-3-yl-carbonyl) pyrrolidine-1-carboxylate	Intermediate (n-2)	401564-36-1		
29	Teneligliptin	Intermediate (n-1)	906093-29-6		
30	Vilazodone	API	163521-12-8		Vilazodone is used to treat depression
31	Ziprasidone	API	146939-27-7		It is used to treat the symptoms of schizophrenia
32	Benzocaine	API	94-09-7		Benzocaine is used short term to relieve pain from minor mouth problems (such as toothache, canker sores, sore gums/throat, mouth/gum injury).
33	Lidocaine and/or its Intermediate	API	137-58-6		It is used to temporarily numb and relieve pain from minor burns
34	2,6 -Dimethylphenyl chloroacetamide	Intermediate	1131-01-7		
35	Ropivacaine	API	84057-95-4		It is used as a local (in only one area) anesthesia for a spinal block, also called

					an epidural.
36	Bupivacaine	API	38396-39-3		Bupivacaine injection is used to numb an area of your body during or after surgery or other procedures, childbirth, or dental work.
37	Gabapentin Hydrochloride and/or its Intermediate	API	60142-95-2		This medication is used to relieve nerve pain following shingles (a painful rash due to herpes zoster infection) in adults.
38	2- Azaspiro[4.5]decan- 3-one	Intermediate	64744-50-9		
39	Pregabalin and/or its Intermediate	API	148553-50-8		Pregabalin is used to treat epilepsy and anxiety.
40	Dimethyl 3-isobutylpentanedioate or Isobutyl glutaric acid	Intermediate (n-4)	145328-03-6		
41	± 3-(Carbamoyl methyl)-5-methyl hexanoic acid (CMMHA)	Intermediate (n-3)	181289-33-8		
42	3R-(-)-3-(Carbamoyl methyl)-5-methyl hexanoic acid	Intermediate (n-1)	181289-33-8		
43	Prendisolone	API	50-24-8		It is used to treat a wide range of health problems including allergies, blood disorders, skin diseases, infections, certain cancers and to prevent organ rejection after a transplant.
44	Telmisartan and/or its Intermediate	API	144701-48-4		It is used alone or in combination with other medications to treat high blood pressure).
45	4-Methyl -6-(1-methyl-1Hbenzoimidazol-2-yl)-2-propyl-1Hbenzoimidazole	Intermediate (n-4)			
46	4-Bromomethyl)biphenyl-2-carboxylic acid methyl ester	Intermediate (n-3)	114772-38-2		
47	Mehtyl -4-[[2n-propyl-4-methyl-6- (1-methylbenzimidazole-2-yl)- benzimidazole-1-yl]methyl]biphenyl carboxylate	Intermediate (n-1)			
48	Losartan Potassium and/or its Intermediate	API	124750-99-8		It is used to treat high blood pressure (hypertension) and to help protect the kidneys from damage due to diabetes
49	4-Bromomethyl-biphenyl-2-carbonitrile /2-Cyano-4-bromo methyl biphenyl	Intermediate (n-4)	114772-54-2		
50	4'-(2-Butyl-4-chloro-5-formyl-imidazol-1-ylmethyl)-biphenyl-2- carbonitrile	Intermediate (n-3)	114772-55-3		
51	2-Butyl-5-chloro-3-[2'(2H-tetrazol-5-yl)-biphenyl-4-	Intermediate (n-2)	124751-00-4		

	ylmethyl]-3H-imidazole-4-carbaldehyde				
52	Paracetamol and/or its Intermediate	API	103-90-2		<p>It can help treat pain and reduce a high temperature (fever).</p> <p>It is used to treat vitamin B12 deficiency.</p> <p>Niacin is a B vitamin that's made and used by your body to turn food into energy.</p> <p>It is used to prevent and treat niacin deficiency (pellagra)</p> <p>Omeprazole is used to treat certain stomach and esophagus problems</p> <p>It is used to treat duodenal and gastric ulcers, gastric ulcers</p> <p>It's used for heartburn, acid reflux and gastro-oesophageal reflux disease (GORD).</p> <p>It's used for heartburn, acid reflux and gastro-oesophageal reflux disease (GORD).</p>
53	Para Amino Phenol	Intermediate (n-1)	123-30-8		
54	Methylcobalamine Vitamin	API	13422-55-4		
55	Niacin	API	59-67-6		
56	Niacinamide	API	98-92-0		
57	Omeprazole and/or its Intermediate	API	73590-58-6		
58	2 chloromethyl -4- methoxy 3,5-dimethyl pyridine hydrochloride	Intermediate	73590-93-9		
59	5 -Methoxy -2- (4-methoxy - 3,5-Dimethyl Pyridinyl) (Methylthio) 1H Benzimidazole /(5-Methoxy-2- [[4-methoxy-3,5-diemthylpyridin-2-yl) methyl] thio-1H-benzimidazole)	Intermediate	73590-85-9		
60	Lansoprazole and/or its Intermediate	API	103577-45-3		
61	2- chloromethyl 3- methyl pyridine hydrochloride	Intermediate	127337-60-4		
62	2(4-(2,2,2-trifluoro ethoxy)-3-methyl pyridinyl (Methylthio) 1H Benzimidazole	Intermediate	103577-40-8		
63	Rabeprazole & Rabeprazole Sodium and/or its Intermediate	API	117976-90-6		
64	2-((4(3-Methoxypropoxy)-3-methylpyridin-2-yl) methylthio-1H -benzo(d) immidazole (Sulfide compound)	Intermediate	117977-21-6		
65	2-(((4(3-Methoxypropoxy)-3-methylpyridin-2-yl) methyl) sulfinyl -1H -benzo(d) immidazole (Sulfoxide compound)	Intermediate	117976-89-3		
66	Pantaprazole & Pantaprazole Sodium and/or its Intermediate	API	102625-70-7 & 138786-67-1		
67	5- (difluoromethoxy) -2-[[{(3,4-dimethoxypyridin-2-yl) methyl] thio}- 1H-benzimidazole (Sulfide compound)	Intermediate	102625-64-9		

68	5- (di fluoromethoxy) -2-[[3,4-dimethoxypyridin-2-yl) methyl] sulfinyl) -1H -benzo(d) imidazole (Sulfoxide compound)	Intermediate	102625-64-9		
69	Esomeprazole	API	119141-88-7		It's used for heartburn, acid reflux and gastro-oesophageal reflux disease (GORD)
70	O-floxacin	API	82419-36-1		It is used to treat a variety of bacterial infections.
71	Norfloxacin	API	70458-96-7		It is used to treat a variety of bacterial infections.
72	Levofloxacin	API	100986-85-4		Levofloxacin is used to treat a variety of bacterial infections.
73	Moxifloxacin HCl	API	186826-86-8		It is used as antibacterial
74	Clotrimazole	API	23593-75-1		It is used to treat skin infection
75	Ketoconazole	API	65277-42-1		It is used to treat skin infection
76	Valsratan and Intermediate	API	137862-53-4		It is used to treat high blood pressure and heart failure.
77	Nebivolol HCl	API	152520-56-4		It is used to treat high blood pressure.
78	Mefanamic Acid	API	61-68-7		It is used to relieve mild to moderate pain
79	Phenyl Butazone Calcium	API	70145-60-7		It is to treat inflammation and pain
80	Glimepiride and/or its Intermediate	API	93479-97-1		It is used to treat type 2 diabetes.
81	4-Methyl Cyclohexanone	Intermediate (n-1)	589-92-4		
82	Cloxiquine (5-Chloro 8-Hydroxy Quinoline) and/or its Intermediate	API	130-16-5		It is used against Mycobacterium tuberculosis
83	4-Chloro-2- Aminophenol	Intermediate (n-3)	95-85-2		
84	Phenyethylamine	Intermediate (n-1)	64-04-0		Phenformin is an anti-diabetic medication
85	N-propyl bromide	Intermediate (n-3)	106-94-5	20	It is used in API Albendazole, Valproic Acid primarily used to treat epilepsy and bipolar disorder and to prevent migraine headaches.
86	N-butyl bromide	Intermediate (n-2)	109-65-9		It is used in API Hyoscine butylbromide, which is taken to relieve cramps in the stomach, intestines

					or bladder.
87	Bromobenzene	Intermediate (n-3)	108-86-1		Pirfenidone is used to treat a lung disease called idiopathic pulmonary fibrosis (IPF).
88	Tetra butyl ammonium bromide	Intermediate (n-3)	1643-19-2		Clopidogrel bisulfate is used to treat patients with acute coronary syndrome, myocardial infarction (MI), peripheral vascular disease and some stroke (ischemic type) patients.
89	Cetyl trimethyl ammonium bromide	Intermediate	57-09-0		Cetrimide Antiseptic is used topically for wound cleansing and the treatment of some skin disorders
90	Ethyl bromide	Intermediate (n-3)	74-96-4		Tepantadol Hydrochloride is used to treat moderate to severe acute pain
91	Isopropyl bromide	Intermediate (n-1)	75-26-3		Ipratropium bromide is used to control and prevent symptoms (wheezing and shortness of breath) caused by ongoing lung disease (chronic obstructive pulmonary disease-COPD which includes bronchitis and emphysema).
92	Bromo acetyl bromide	Intermediate	598-21-0		Clonazepam is used to control seizures or fits due to epilepsy, involuntary muscle spasms, panic disorder and sometimes restless legs syndrome.
93	R & D product	--	--	0.1	--
Total Production				70.1	

- 3) 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.
- 4) The proposal was considered in the SEAC video conference meeting dated 15.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.

- 7) PP submitted satellite map showing that there is no any water bodies, villages, School, monuments etc. within 500 m radius of the project site. Aerial distance of nearest habitat of village Bileshwarpura Village is @ 1.95 Km. PP also submitted that there are no Eco sensitive zones, wild life sanctuaries within the 10 km area from the boundary of the project site.
- 8) Committee found presentation and submission of project proponent satisfactory.
- 9) 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
- 10) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 1223(E) dated 27.03.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.
- 11) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details														
A-1	Project cost															
Total cost of Proposed Project (Rs. in Crores):																
<table border="1"> <tr> <td>Total Project</td> <td></td> </tr> <tr> <td>Rs. 6.0 Crores</td> <td></td> </tr> </table>			Total Project		Rs. 6.0 Crores											
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Break-up of proposed project Cost:																
<table border="1"> <thead> <tr> <th>Details</th> <th>Project Cost (Rs. In Crores)</th> </tr> </thead> <tbody> <tr> <td>Land</td> <td>--</td> </tr> <tr> <td>Building</td> <td>2.25</td> </tr> <tr> <td>Machinery</td> <td>2.55</td> </tr> <tr> <td>Env. & Safety</td> <td>1.20</td> </tr> <tr> <td>Miscellaneous</td> <td>-</td> </tr> <tr> <td>Total</td> <td>6.0</td> </tr> </tbody> </table>			Details	Project Cost (Rs. In Crores)	Land	--	Building	2.25	Machinery	2.55	Env. & Safety	1.20	Miscellaneous	-	Total	6.0
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Land	--															
Building	2.25															
Machinery	2.55															
Env. & Safety	1.20															
Miscellaneous	-															
Total	6.0															
A-2	Details of CER -															
PP shall carry out CER activities as below:																
<ul style="list-style-type: none"> ✓ Installation of solar street light in nearby village ✓ Provision of RO system and water cooler system for the drinking water facility. 																
B	Land / Plot ownership details:															
Land is taken on rent for 15 years by M/s. Dudhat Chemicals Pvt. Ltd. from the owner Madhubhai Dudhat.																
B-1	Plot area															
<table border="1"> <tr> <td>Total Plot area</td> <td></td> </tr> </table>			Total Plot area													
Total Plot area																

2430.6 Sq. m.

B-2 Area adequacy**Area Adequacy table:**

Sr. No.	Description	Area (In Sq. mtr.)	Floor Area (In Sq. mtr.)	% Total Plot Area
1.	Security Cabin	20	0	0.82
2.	Office (F. F.) + OHC (G.F.)	30	60	1.23
3.	Process Plant (G + 4)	231	924	9.50
4.	Product storage Area	30	30	1.23
5.	Spent solvent storage area	66	66	2.72
6.	Raw Material storage area	132	0	5.43
7.	Bromine storage area	20	0	0.82
8.	Hydrogen gas storage area	25	0	1.03
9.	Hydrogenation area	30	0	1.23
10.	Hazardous waste storage area	50	0	2.06
11.	Utility area	70	0	2.88
12.	ETP area	66	0	2.72
13.	Fresh solvent storage area	50	0	2.06
14.	Solvent tank farm area	100	0	4.11
15.	Pump House	20	0	0.82
16.	Green belt area	802	0	33.00
17.	Road and open area	688.6	0	28.33
Total Area		2430.6	1080	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

	Total (Sq. meter)
Area in Sq. meter	802 Sq. m.
% of total area	33%

Comments:

The condition shall be given that -

- The PP shall develop green belt (802 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																						
Employment generation																							
<table border="1"> <tr> <td style="width: 80%;"></td> <td style="text-align: center;">Total</td> </tr> <tr> <td></td> <td style="text-align: center;">15</td> </tr> </table>			Total		15																		
	Total																						
	15																						
-																							
D	WATER																						
D-1	Source of Water Supply																						
<p>➤ Estate Water supply.</p> <p>Comments:</p> <p>➤ Prior permission from concerned authority shall be obtained for withdrawal of water.</p>																							
D-2	Water consumption (KLD)																						
-																							
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Scrubber (Alkali)	4.0
Scrubber (Ammonia)	1.8
Total Industrial	116.5
Grand Total (A+B+C)	120.0

-
Comments:

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

D-3 Waste water generation (KLD)

Category	Waste water KLD
(Q) Domestic	0.80
(R) Industrial	
Process	40
Washing	0.5
Boiler	0.8
Cooling	2.0
RO Reject	3.5
Scrubber (Boiler)	0.5
Scrubber (Water)	3.8
Scrubber (Alkali)	4.2
Scrubber (Ammonia)	2.0
Total industrial	57.3
Total [A + B]	58.1

Comments:

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

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

0.80 KLD Domestic Waste Water will be treated in ETP along with industrial effluent generation.

Comments:

- Domestic wastewater generation shall not exceed 0.80 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.

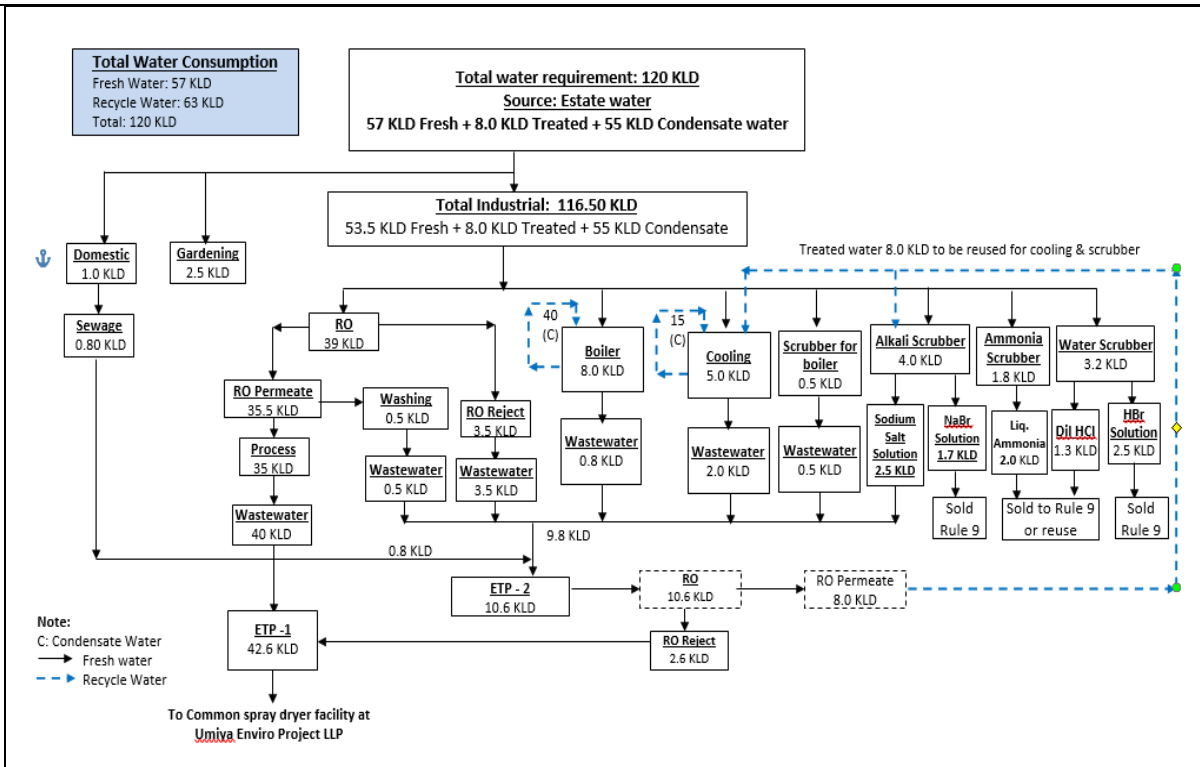
D-5a Break-up of waste water disposal & facility (For Industrial)

Sr. no.	Quantity KLD	Facility
1	0.80 KLD	Domestic wastewater shall be treated in ETP-2 along with industrial wastewater
2	40 KLD	40 KLD effluent shall be treated in ETP-1 and treated effluent shall be disposed to the common spray dryer facility at Umiya Enviro Projects LLP
3	9.8 KLD	Effluent generated from Boiler, Cooling, Scrubber, RO reject and washing shall be treated in ETP-2 followed by RO. RO permeate shall be reused again in cooling & scrubber.
4	1.7 KLD	NaBr solution shall be sold to actual users under Rule- 9
5	2.5 KLD	HBr solution shall be sold to actual users under Rule- 9
6	2.0 KLD	Liq. Ammonia shall be sold to actual users under Rule- 9
7	1.3 KLD	Dil. HCl shall be sold to actual users under Rule- 9
Total	58.1 KLD	--

Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)

Membership certificate of Common spray dryer obtained from Umiya enviro Project Ltd.

D-5b Simplified water balance diagram



D-5c		Summary	
Summary of water requirement	Quantity KLD	Remarks	
Total water requirement for the project (A)	120		
Quantity to be recycled (B)	63	8 KLD RO permeate 55 KLD Condensate water	
Total fresh water requirement (C)	57		
Ensure Total water requirement = Fresh water + Recycled water i.e. A = B + C			

Comments:

33. Total water requirement for the project shall not exceed 120 KLD. Unit shall reuse 8.0 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 57 KLD and it shall be met through Estate water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.

34. Management of Industrial effluent shall be as under:

✓ **Concentrated Effluent:**

40 KLD, concentrated stream generated from process shall be treated in ETP1 consisting of primary treatment units and sent to common spray dryer for further treatment and disposal.

✓ **Dilute Effluent:**

✓ 9.8 KLD, low COD effluent from washing, utility & scrubber and 0.8 KLD domestic

effluent shall be treated in ETP consists of primary, secondary & tertiary treatment units followed by RO. 8 KLD RO permeate shall be reused within plant premises and 2.6 KLD, RO reject shall be sent to common spray dryer for further treatment and disposal.

- ✓ Unit shall send waste water to Common spray dryer only after achieving inlet norms to Common spray dryer prescribed by GPCB ensuring content of effluent for COD so as not to get air borne during spray drying after APCM in order to achieve no adverse impacts on Environment and Human Health.

35. Unit shall provide ETP with adequate capacity.

36. 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 :1500 KVA

E-2 Flue gas emission details

-

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
1	Boiler – 2nos. (Capacity: 2 TPH)	30	Imported coal or Briquette	5.8 TPD or 6.5 TPD	PM, SO ₂ , NO _x	Multi-cyclone Separator, bag filter & alkali scrubber
2	D. G. Set, 2 nos. (625 KVA)	11	HSD	1200 L/day		Adequate Stack Height

-

E-3 Process gas

-

Sr. no.	Specific Source of emission (Name of the Product & Process)	Type of emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
1	Process Vent (Multipurpose Reactors)	NH ₃ , SO ₂ , HCl, Cl ₂	12	Two stage Water scrubber followed by Alkali Scrubber
2	Reaction Vessel (Bromination Process)	Br ₂ , HBr	12	Two stage Water scrubber followed by Alkali Scrubber

-

E-4 Fugitive emission details with its mitigation measures.

Fugitive emission details with its mitigation measures.

- Powdered Raw materials charging will be done in closed system and in covered area.
- All necessary safety precautions will be taken while charging of raw materials.
- Raw materials and products will be stored in designated storage area as per its characteristics.

- Reactor and solvent handling pumps will have mechanical seals to prevent leakages.
- Reactors shall also be provided with breather valve to prevent losses.
- Pucca flooring will be provided on the inner roads of the factory to control SPM concentration in ambient air.
- The unit will developed Green Belt in the industrial premises as well will participate in greenbelt development program in nearby area.
- All the raw materials will be pneumatically transfer to the reactor.
- Care will be taken to store construction material properly to prevent fugitive emissions, if any.
- Plantation will be done around the project area and along the roads.
- Adequate ventilation will be provided.
- Regular maintenance of valves, pumps and other equipment will be done to prevent leakages and thus minimizing the fugitive emissions of VOCs.
- Entire process will be carried out in the closed assembly with proper maintenance of pressure and temperature.
- Periodic monitoring of work area will be carried out to check the fugitive emission as per the norms of Gujarat Factory Rules.
- To eliminate chances of leakages from glands of pumps, mechanical seal will be provided at all solvent pumps.
- Solvent recovery will not be less than 90% under any case.
- Spent solvents will be distilled at atmospheric pressure and distillation facility shall include condensers with sufficient Heat Transfer Area and residence time so as to achieve more than 95% recovery.
- 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 vents will be connected to a common carbon adsorber for removing traces of solvent from vent gases.
- Nomenclature and proper label pasted on them indicating name of solvent will be made on each of the storage unit.
- Reactor and solvent handling pump will have proper seals to prevent leakages.

Comments for E2, E3 & E4:

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

F Solvent management, VOC emissions etc.

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

	<ul style="list-style-type: none"> ➤ Primary condenser: Cooling tower water or chilled water will be used to condensed the solvents depend on the vapor pressure at its operating conditions and the non-condensed vapors will be condensed in a secondary condenser. ➤ Secondary condenser: Chilled Brine at -5°C will be used to condensate the non-condensed vapors in the secondary condensers final venting will be done after passing through carbon column. ➤ More than 96% of Spent Solvent will be recovered. 	
F-2	VOC emission sources and its mitigation measures	
	<p>Due to Manufacturing process chances of VOC emissions. Entire process and material charging has been carried out in closed loop. Regular work place monitoring will be done. Standard SOP will be followed to handle powder and liquid raw materials.</p>	
F-3	LDAR proposed:	
	<p>Leak Detection and Repair (LDAR) is a program implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment. Leaking equipment, such as valves, pumps, and connectors, are a large source of emissions of volatile organic compounds (VOCs) and volatile hazardous air pollutants (VHAPs).</p> <p>Quarterly VOC monitoring would be conducted by NABL laboratory and six-monthly workplace VOC monitoring would be carried out to identify areas with VOC levels greater than the threshold limits. In case of any identified area appropriate controls would be put in to identify the reasons for VOC /fugitive emissions and rectify the same. Documentation of procedures for the monitoring and inspecting of emission control equipment are prepared.</p> <p>The Following methodology will adopt during LDAR study:</p> <ul style="list-style-type: none"> ▪ Identify the Chemical streams that will be monitored. ▪ Types of components (pumps, valves, connectors, etc.) will be monitored. ▪ Actions to be taken if a leak is detected. ▪ All the rotating equipment like pumps will be installed with Mechanical Seals to arrest any sort of emissions. ▪ Length of time in which an attempt to repair the leak must be performed. ▪ Actions that must be taken if a leak cannot be repaired within guidelines. ▪ Record-keeping and reporting requirements. <p>To prevent losses of these solvents in atmosphere, following infrastructure shall be used in addition to LDAR program.</p> <ul style="list-style-type: none"> ▪ Leak free pumps for transfer of solvents. ▪ MSW Gaskets in solvent pipelines to prevent leakage from flanges. ▪ Minimum number of flanges, joints and valves in pipelines. ▪ To eliminate chances of leakages from glands of pumps, mechanical seal will be provided at all solvent pumps. ▪ All the rotating equipments like pumps will be installed with Mechanical Seals to arrest to arrest any sort of emissions. ▪ Condenser and scrubber through hoods and ducts by induced draft, and control by scrubber / dust collector to be ensured. ▪ In case the small spillage or leakage observed, first pour the china clay (vermiculate) on material and collect the contaminated china clay (vermiculate) and send to ETP. ▪ If the spillage is of flammable liquid, switch off all the power supply in the area to prevent 	

Electric spark.

Comments:

- Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

G Hazardous waste

G-1 Hazardous waste management matrix

Sr. no.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules.	Quantity (MT/ Annum)	Management of HW
1	Used Oil	Machinery	5.1	0.05	Collection, Storage, Transportation and reused within premises and if excess Disposal by selling to registered recycler
2	Discharged Bags/Containers / Drums	Raw Material	33.3	10	Collection, Storage, Transportation, Decontamination & Sale to GPCB approved recycler/reuse
3	Distillation Residue	From Solvent Recovery Plan & Mfg Process	Sch – I 36.1	360	Collection, Storage, Transportation & Disposal to authorized CHWIF
4	Spent Carbon	Mfg Process	Sch – I 28.3	78	
5	Organic Residue	Manufacturing process	--	180	
6	ETP Sludge	Effluent Treatment Plant	Sch – I 35.3	380	Collection, storage, Transportation and disposal to approved TSDF.
7	Inorganic Residue	Manufacturing process	--	170	
8	Spent HCl (20-30%)	Water Scrubber	SC-II- B15	475	Collection, storage, Transportation and reused within premises and if excess Disposal to actual user under Rule 9
9	Liquor Ammonia	Ammonia scrubber	--	730	
		Manufacturing process of product no. 19	--	300	

10	Spent Sulphuric Acid (60-70%)	Manufacturing process N-propyl bromide, N-butyl bromide, Isopropyl bromide	--	285	Collection, storage, Transportation and Disposal to actual user under Rule 9
11	Hydrogen Bromide (HBr) Solution	Manufacturing process of bromo Benzene, Bromochloro Phenol	--	288	
		Scrubber	--	913	
12	Sodium Bromide Solution (NaBr)	Manufacturing process of N-Propyl Bromide		18	
		Scrubber		621	
13	Bleed Liquor (Sodium Salts)	Alkali Scrubber	--	913	Collection and to be taken in in-house ETP for treatment
14	Sulphur (20-30%)	Manufacturing Process of N-Propyl Bromide, N-Butyl Bromide	--	4	Collection, storage, disposal and sent to TSDF site/CHWIF site.
15	Spent Solvent	Solvent recovery system	28.6	11725	Recovery and reuse in next batch
16	Off Specification products	Mfg. Process	28.4	Whatever generated	Collection, Storage, Transportation & Disposal to authorized CHWIF.
Comments:					
<ul style="list-style-type: none"> ➤ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement. ➤ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB. 					
G-2	Non- Hazardous waste management matrix				
✓ Fly Ash generation will be 210 MTPA.					
Comments:					
<ul style="list-style-type: none"> ➤ Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit. 					
H	SAFETY details				

H-1 Details regarding storage of Hazardous chemicals

Sr. No.	Name of chemical	Capacity of Tank, MT	Number of Tanks
1	Acetone	10	01
2	Isopropyl alcohol	10	01
3	Methanol	10	01
4	Toluene	10	01

Brief note on Storage of Hazardous chemicals in tanks

- Construction of Dyke walls around storage tanks to keep liquid from flowing out in case of damage to tank
- Proper earthing shall be provided to all storage tank to prevent the firing due to static charges.
- In order to avoid the accident due to spillages or overflow the level indicators are placed which helps to know the exact level inside the tank.
- Display boards shall be provided on all storage area and tanks which includes the name of the product, stored material of construction, calibration of tanks and date of painting.
- Breathe valves and Flame arrestors shall be provided on flammable liquid storage tanks to prevent the firing.

Brief note on 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.

Safety details of Hazardous Chemicals:

Type of Hazardous chemicals	Safety Measures
Methanol	<ul style="list-style-type: none"> • Stored separately from strong oxidant & Kept it in well ventilated room. • Dyke wall shall provide to all above ground storage tank. • Fire hydrant system will be installed. • Safety shower and eye washer shall be installed near storage area. • Safety permit system shall be followed for loading and unloading. • Level gauge and level measurement instruments shall be provided for storage tanks.
Concentrated Acid	<ul style="list-style-type: none"> • Storage of all acids in chemically compatible containers and properly marked with hazardous symbol. • Provision of suitable level indicator for storage and day tanks. • Provision of all acids containers with containment tray. • Provision of emergency transfer arrangements for transferring material into another tank.
Bromine	<ul style="list-style-type: none"> • Bromine handling areas is clearly marked and restricted to qualified, trained personnel only.

	<ul style="list-style-type: none"> • Bromine process area will be done with good ventilation. • Transfer or repackage bromine only in a controlled, closed environment. • Exhaust ventilating systems is used in enclosed areas where bromine is handled. • Personal Protective Equipments are compulsory when handling Bromine 							
<p>➤ Applicability of PESO: Will obtained PESO permission from competent authority after obtaining EC.</p>								
<p><u>Comments:</u></p> <p>➤ 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.</p>								
H-2	Types of hazardous Processes involved and its safety measures:							
<table border="1"> <thead> <tr> <th data-bbox="231 1081 529 1115">Types of Process</th> <th data-bbox="529 1081 1428 1115">Safety Measures including Automation</th> </tr> </thead> <tbody> <tr> <td data-bbox="231 1115 529 1496"> <ul style="list-style-type: none"> • Bromination Reaction </td> <td data-bbox="529 1115 1428 1496"> <ul style="list-style-type: none"> • Bromination will be done by liquid bromine. • Bromination will be done in closed glass lined vessels. • Liquid bromine is an extremely corrosive & toxic capable of causing severe skin burns and eyes damage. • The bromination reaction will be controlled by systematic cooling design to withdraw the energy evolved. • In our bromination process, reaction will be controlled by adequate dosing of reaction chemicals in a fixed time having adequate cooling water circulation in jacket if reaction vessel. • Adequate pressure relief valve will be provided for each vessels having pressure release capacity will be kept below -3 kg/cm³ than that of reaction vessels. </td> </tr> <tr> <td data-bbox="231 1496 529 2033"> <ul style="list-style-type: none"> • Hydrogenation reaction </td> <td data-bbox="529 1496 1428 2033"> <ul style="list-style-type: none"> • FLP type area will be provided. • Total enclosed process system. • Instrument & Plant Air System. • Provision of Gas detector in hydrogenation section as per requirement • Nitrogen blanketing in Hydrogenation reactor. • Safety valve and Rupture disc provided on reactor. • Cooling Chilling and power alternative arrangement have been made on reactor. • Hydrogen and Nitrogen Cylinder bank away from the auto clave reactor. • PRV station with shut off valve, safety valve provision will be made for hydrogenation reaction safety. • Before Hydrogen Gas charging in to reactor and after completion of reaction Nitrogen flushing will be done. • Flame arrestor will be provided on vent line of reactor and it will be extended up to roof level. • Open well ventilated and fragile roofs will be provided to on reactor. </td> </tr> </tbody> </table>			Types of Process	Safety Measures including Automation	<ul style="list-style-type: none"> • Bromination Reaction 	<ul style="list-style-type: none"> • Bromination will be done by liquid bromine. • Bromination will be done in closed glass lined vessels. • Liquid bromine is an extremely corrosive & toxic capable of causing severe skin burns and eyes damage. • The bromination reaction will be controlled by systematic cooling design to withdraw the energy evolved. • In our bromination process, reaction will be controlled by adequate dosing of reaction chemicals in a fixed time having adequate cooling water circulation in jacket if reaction vessel. • Adequate pressure relief valve will be provided for each vessels having pressure release capacity will be kept below -3 kg/cm³ than that of reaction vessels. 	<ul style="list-style-type: none"> • Hydrogenation reaction 	<ul style="list-style-type: none"> • FLP type area will be provided. • Total enclosed process system. • Instrument & Plant Air System. • Provision of Gas detector in hydrogenation section as per requirement • Nitrogen blanketing in Hydrogenation reactor. • Safety valve and Rupture disc provided on reactor. • Cooling Chilling and power alternative arrangement have been made on reactor. • Hydrogen and Nitrogen Cylinder bank away from the auto clave reactor. • PRV station with shut off valve, safety valve provision will be made for hydrogenation reaction safety. • Before Hydrogen Gas charging in to reactor and after completion of reaction Nitrogen flushing will be done. • Flame arrestor will be provided on vent line of reactor and it will be extended up to roof level. • Open well ventilated and fragile roofs will be provided to on reactor.
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- Safe Catalyst charging method will be adopted.
- SOP will be prepared and operators will be trained for the same.
- Static earthing and electric earthing (Double) provided.
- Reactor vent extended outside the process area and flame arrestor provided on vent line.
- Dumping vessel arrangement will be made.
- Jumpers for static earthing on pipeline flanges of flammable chemical will be provided.

H-3 Details of Fire Load Calculation

Total Plot Area:	2430.6 sq. m
Area utilized for plant activity:	924 sq. m
Area utilized for Hazardous Chemicals Storage:	557 sq. m
Number of Floors:	Ground Floor +4
Water requirement for firefighting in KLD:	25 KLD
Water storage tank provided for firefighting in KLD:	200 KLD
Details of Hydrant Pumps:	3 Hydrant pumps (1 Main, 1 DG Pump & 1 Jockey pump)
Nearest Fire Station :	Kalol fire station @ 10 km, SE Kadi Fire station @ 9.0 km, WSW
Applicability of Off Site Emergency Plan:	Yes, Applicable

Comments:

- The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and provides for fire water storage tank of 200 KL. SEAC found it as per the requirement.

H-4 Details of Fire NOC/Certificate:

Fire NOC shall be obtained from concerned authority

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

Number of permanent Employee:	15
Number of Contractual person/Labour:	2
Area provided for OHC:	30 sq. m
Number of First Aid Boxes:	5
Nearest General Hospital:	Soham Hospital, Kalol
Name of Antidotes to be store in plant:	Milk of Magnesia, Cordinol Tab, Novasin drops for eyes, Eno, Fomepizole

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.				
Details of Environmental Management Plan (EMP)				
As below:				
Sr. No.	Unit	Detail	Capital Cost (Rs. In Lacs)	Total Recurring Cost (Rs. In Lacs)
1	Waste Water	ETP: 2 nos. and RO & Common Spray dryer membership certificate	20	35
2	Air	APCM	10	6.5
3	Hazardous Management	Cost of designated storage area, storage, handling and disposal cost	5.0	3.0
4	Fire & Safety	Fire Hydrant system	53.24	5.0
5	AWH Monitoring	NABL laboratory for regular monitoring	1.0	1.5
6	Green Belt Development	Cost of tree species, manure, tree planting and regular maintenance	1.0	1.5
7	Occupational Health	Cost of Designated area with First aid facilities, Periodical medical check-up through doctor/ hospital, PPE Kits	2.0	3.0
8	Cost of SCADA and PLC system	Bromination, hydrogenation and Distillation process	16.0	3.0
9	CER cost	Provision of Solar street lights & Provision of RO system with water tank	12.0	0
	Total	--	120.24	58.5

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.

12) DELIBERATION AND RECOMMENDATION:

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

safety measures, green belt development planning, regulatory compliance assured of related statutory provisions, necessary documents of requisite permissions provided from concerned departments and overall environmental management planning for the project, along with financial resources committed for operation and maintenance, and on the basis of presentation made before SEAC, modification suggested by SEAC and incorporated by project proponent, SEAC finds the project as per the requirement and **unanimously** recommends the same to SEIAA for environmental clearance."

Conditions with which Environment Clearance is recommended:

Construction Phase

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

SPECIFIC CONDITIONS:

1. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after the 31st December 2021, considered as per the provisions in force at that time as mentioned in the Notification vide S.O. 1223 (E) dated 27/03/2020.
2. 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 subsequent amendments.
3. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
4. (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.

5. 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**].
6. 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.
7. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained
8. **Safety & Health:**
 - a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals
 - b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
 - c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
 - d) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
 - e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
 - f) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
 - g) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
 - h) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
 - i) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.

- j) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
- k) Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
- l) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.
- m) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for nitration vessel safety
- n) Unit shall provide safety valve and rapture disc, as well as auto dump or auto quench/, suppress system for exothermic reaction vessel safety.

WATER

9. Total water requirement for the project shall not exceed 120 KLD. Unit shall reuse 8.0 KLD of treated industrial effluent water within premises. Hence, fresh water requirement shall not exceed 57 KLD and it shall be met through Estate water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
10. The industrial effluent generation from the project shall not exceed 57.3 KLD. Out of which, 7.5 KLD exhausted scrubbing media shall be sold to actual users having Rule-9 permission as per hazardous waste rule 2016.
11. Management of Industrial effluent shall be as under:
 - ✓ **Concentrated Effluent:**
40 KLD, concentrated stream generated from process shall be treated in ETP1 consisting of primary treatment units and sent to common spray dryer for further treatment and disposal.
 - ✓ **Dilute Effluent:**
9.8 KLD, low COD effluent from washing, utility & scrubber and 0.8 KLD domestic effluent shall be treated in ETP consists of primary, secondary & tertiary treatment units followed by RO. 8 KLD RO permeate shall be reused within plant premises and 2.6 KLD, RO reject shall be sent to common spray dryer for further treatment and disposal.
12. Domestic wastewater generation shall not exceed 0.8 KL/Day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
13. Unit shall provide ETP with adequate capacity.
14. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.
15. The unit shall provide metering facility at the inlet and outlet of ETP & RO and maintain records for the same.
16. Proper logbooks of ETP & RO; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

17. Unit shall not exceed fuel consumption for Steam Boiler and D G Set as per the point no. E-2 as mentioned above.

18. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
19. Unit shall provide adequate APCM with process gas generation sources as the point no. **E-3** as mentioned above.
20. The fugitive emission in the workzoneenvironment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
- Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
 - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
 - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
21. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
22. For control of fugitive emission, VOCs, following steps shall be followed :
- ✓ Closed handling and charging system shall be provided for chemicals.
 - ✓ Reflux condenser shall be provided over Reactors / Vessels.
 - ✓ Pumps shall be provided with mechanical seals to prevent leakages.
 - ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.
23. Solvent management shall be carried out as follows:
- ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
 - ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
 - ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
 - ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
 - ✓ Solvents shall be stored in a separate space specified with all safety measures.
 - ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
 - ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.
24. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, HCl, Cl₂, Br₂, NH₃, HBr and

VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

25. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
26. Authorized end-users shall have permissions from the concerned authorities under the Rule 9 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016.
27. Unit shall explore the possibilities for environment friendly methods like co-processing of hazardous waste for disposal of Incinerable & land fillable wastes before sending to CHWIF & TSDF sites respectively.
28. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
29. 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.
30. 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

31. The PP shall develop green belt (802 Sq. m i.e. 33 % of the total plot area) as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

32. The project proponent shall carry out the entire activities [Installation of solar street light in nearby village & Provision of RO system and water cooler system for the drinking water facility] proposed under CER shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
33. All the environmental protection measures and safeguards proposed in the Form-1 & PFR submitted by the project proponent and commitments made in their application shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

34. Project proponent shall inform to all the concerned authorities including Municipal Corporation and District Collector and shall also give wide publicity through advertisement in minimum two local

newspapers within seven days, about the Environment Clearance order accorded.

35. Project proponent shall appoint a key person in the organization who shall be responsible for compliance of above condition fully on behalf of the proponent. It will not mean that appointing a key person will exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.
36. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
37. The Nodal Department or any authority or officer authorized by MOEF&CC/SEIAA can inspect the site of the project and all the facilities, for verification of compliances of environment clearance conditions.
38. In case of violation reported upon, the project proponent shall be responsible for all the legal actions as per Environment Protection Act, 1986 including SEIAA may cancel, withdraw or keep in abeyance, the Environment Clearance accorded.
39. Any person including the project proponent affected by this Environment Clearance order may file appeal to Honorable National Green Tribunal West Zone branch, Pune, preferably within a period of thirty days from the date of issue of Environment Clearance as prescribe under section 16 of National Green Tribunal Act 2010.
40. All complains and public grievance or representations may be addressed to SEIAA/SEAC in the email addresses (a) msseiaagj@gmail.com& (b) seacgujarat@gmail.com

14	SIA/GJ/IND3/68456/2019	M/s Kewin Parin Industries Survey no:- 462, 463 ,Plot:- 10-11, Nr. J.B. Farm House, Gayatri Dairy Road , Village-Indrad, Ta-Kadi ,Dis-Mehsana-382715, Gujarat, India.	EC
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Category of the unit: **5 (f)**

Project status: **New**

In context to above subject matter find below the recommendation of SEAC for your perusal.

1) DETAILS OF APPLICATION:

1.1. Type of application:	EC-New
1.2. Proposal no.	SIA/GJ/IND3/68456/2019
1.3. Category of Project :	5 (f) – B1
1.4. Date of application :	17/12/2021
1.5. Documents Submitted by Project Proponent(PP)	EIA report, Form-2, EMP

1.6. TOR No. & Date :	SEIAA/GUJ/TOR/5(f)/964/2020, Date: 27 Aug 2020.
1.7. Date of Public hearing	01.01.2022
1.8. Technical expert / Environmental Consultant :	Mr. Parin P. Patel & Mr. Kewin D. Shah. (Partner of Kewin Parin Industries) Mr. B. S.Rana (Environment Consultant)
1.9. SEAC Meeting No. and Date:	381 st meeting dated 15.03.2022
1.10. Compliance of Existing EC & CCA	Not Applicable

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

Product Table

Sr. No.	Name Of Product	CAS NO.	Proposed Production (MT/Month)	End Use of Products
GROUP -A (PRODUCTS USED OLEUM)				
1	Aniline 2.5 Di Sulphonic Acid	98-44-2	75 and Or Any Product maximum per day 2.5 MT Only	Dyes manufacturing
2	4 SulphoAnthranalic Acid	98-43-1		
3	Para Nitro ToluineSulphonic Acid	121-03-9		
4	Metanilic Acid	121-47-1		
5	4 Nitro 2 Amino Phenol Sulphonic Acid	96-67-3		
6	6 Nitro 2 Amino Phenol Sulphonic Acid	96-93-5		
7	Meta Phenylene Di Amine Di Sulphonic Acid	137-50-8		
GROUP -B (PRODUCTS NOT USED OLEUM)				
1	Para Amino Azo Benzene Sulphonic Acid(PAABSA)	104-23-4	75 and Or Any Product maximum per day 2.5 MT Only	Dyeing & Printing
2	4- Chloro 2- Amino Phenol (4-CAP)	95-85-2		
3	Direct Orange-39	1325-54-8		
4	5- Nitro 2 Amino Phenol (5-NAP)	121-88-0		
5	2:5 Di Chloro Para Nitro Aniline(2:5DCPNA)	6627-34-5		
6	Ortho Amino Phenol Para Sulfonamide(OPSAMIDE)	98-32-8		
7	4,4 DinitroStilbine 2,2 Disulfonic Acid(DNSDSA)	128-42-7		
8	Meta Amino Phenol(MAP)	591-27-5		
9	1,8 Dihydroxy 3,6 Disulfo Nephthelene(Cromotropic Acid)	148-25-4		
10	DehydroThio p-Toluidine Sulphonic Acid (D.T.P.T.S.A)	130-17-6		
11	Meta Sulfo Phenyl Gama Acid(M.S.P. Gamma)	25251-42-7		
12	Copper Formazone base	77840-01-8		
13	Pigment Orange 5	3468-63-1		
14	Mix Cleave's Acid	51548-48-2		

15	Naphthols AS-BS-ASD-ASE-ASOL-ASCL-ASITR	92-77-3		
16	4 Nitro 2 Methoxy Aniline/Scarlate R Base			
17	Meta Nitro Para Amino Toluene			
18	Bodex GP			
Total			150	

- 3) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
- 4) The proposal was considered in the SEAC video conference meeting dated 22.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile and public hearing proceedings.
- 7) Committee noted that PP could not represented current status of Public hearing issues and compliance of Specific ToRs issued by SEIAA.

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

1. Complete compliance of Specific ToRs issued.
2. Current status for the issues raised during public hearing (All points raised including written complaints/representations)

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

Minutes approved by:

1.	Shri Akshay Kumar Saxena, Chairman, SEAC	
2.	Dr. S. C. Pant, Vice Chairman, SEAC	
3.	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	