

Minutes of the 399th meeting of the State Level Expert Appraisal Committee held on 11th April 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 11/04/2022 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/IND2/65339/2007	M/S. ORGO SYNTH Plot No. 237/1 and 246/3, G.I.D.C. Estate Pandesar, Surat – 394 221, Gujarat.	EC
Category of the unit: 5 (f)			
Project status: Expansion			
1) DETAILS OF APPLICATION:			
1.1. Type of application:		EC-Expansion	
1.2. Proposal no.		SIA/GJ/IND2/65339/2007	
1.3. Category of Project:		5 (f) – B1	

1.4. Date of application:	14.07.2021
1.5. Documents Submitted by Project Proponent (PP)	EIA report, Form-2, EMP
1.6. TOR No. &Date:	No. IA-J-11011/282/2020-IA-II(I) , Date: 16 Dec 2020.
1.7. Date of Public hearing	Not applicable
1.8. Technical expert / Environmental Consultant:	M/s. En-vision Environmental Services
1.9. SEAC Meeting No. and Date:	399 th meeting dated 11.04.2022
1.10. Compliance of Existing EC & CCA	YES, Certified Compliance Report of EC Attached as annexure VII in EIA Report. Consent order no.: AWH-114837, Date of Validity: 10/08/2026 Self-compliance report of CCA&A submitted with application Attached as annexure VIII in EIA Report.

2) This is an existing unit and now proposed for expansion in manufacturing of synthetic organic chemicals as mentioned below:

Product Table

Sr. No	Name of Products	CAS / SI no.	Production Capacity (MT/Month)			End-use of the products
			Existing	Proposed	Total	
1	Ortho Benzoyl Benzoic Acid (OBBA)	85-52-9	3.0	-3.0	0	Synthesis of various Dyes Products
2	Anthraquinone (AQ)	84-65-1	2.5	-2.5	0	
3	Vat Red 10	2379-79-5	0.08	-0.08	0	Coloration of various Clothes
4	Vat Violet FFBN		0.08	-0.08	0	
5	Vat Brown R	131-92-0	0.43	-0.43	0	
6	Vat Golden Orange 3G	1936-15-8	0.08	-0.08	0	
7	Vat Olive R	12199-37-0	0.5	-0.5	0	
8	Vat Yellow 3 RT	59112-78-6	0.16	-0.16	0	
9	Orange RF	40690-89-8	0.08	-0.08	0	
10	Vat Pink R	8016-20-4	0.25	-0.25	0	
11	Vat Red 13	2425-85-6	0.08	-0.08	0	

12	Vat Orange RK	1324-11-4	0.08	-0.08	0	
13	Vat Green 1 (Vat Green FFB)	128-58-5	0	5.0	5.0	
14	Vat Violet 1 (Vat Violet 2R)	1324-55-6	1.5	8.5	10.0	
15	2 Methyl AQ	615-15-6	0	3.0	3.0	
16	Vat Magenta B (Vat Violet 3)	2379-75-1	2			
17	Vat Red 14 (Vat Scarlet GG)	8005-56-9	1			
18	Vat Orange 7 (Vat Orange GR)	4424-06-0	0.5			
19	Vat Red 15 (Vat Bordeaux 2R)	4216-02-8	0.5	20.59	25.0	
20	Vat Blue BC (Vat Blue 6)	130-20-1	0.25			
21	Vat orange 2 (Vat Orange RRTS)	2172-33-0	0.08			
22	Vat Red 41 (Vat Red 5B)	17804-49-8	0.08			
23	Vat Black 25 (Vat Olive T)	4395-53-3	0			
24	Vat Green 3 (Vat Olive Green B)	3271-78-9	0			
25	Vat Blue 4 (Vat Blue RSN)	81-77-6	0			
26	Solvent Blue 35	17354-14-2	0			
27	Solvent Orange 63	2646-17-5	0			
28	Benzanthrone	16306-19-7	0			
29	Vat Blue 20 (Vat Dark Blue BO)	116-71-2	0			
30	Vat Blue 18	2553-71-1	0			
31	Vat grey 3B (Vat Black 16)	5413-75-2	0.5			
32	Vat Violet 9	1328-19-4	0			
33	Vat Green 9	4424-87-7	1.0			
Total			14.73	29.77	43.0	
CO-PRODUCT						
1	Zinc Carbonate (30-40 % solution)	743369-26-8	26.45	0	26.45	--
2	Copper Sulphate (Will be reused)	7758-98-7	0.458	0	0.458	
3	Para Toluene Sulphonic acid	24057-28-1	0.18	-0.18	0	
4	Copper Sulphide	84535-40-0	0.125	-0.125	0	
5	MnO ₂	109216-35-5	0.708	0	0.708	
6	Aluminum hydroxide	21645-51-2	3.875	0	3.875	
Total					31.5	

- 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 11.04.2022.
- 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 vide No. SEIAA/GUJ/EC/5(f)/153/2008 dated: 01.12.2008. 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. PP submitted that there is no legal court case and public complaint against unit.
- 8) Looking to the location of industry in GIDC-Pandesara, Committee was of the view that this GIDC is surrounded by residential and commercial area of Surat city. Upon asking regarding the justification for expansion within existing premises in compliance to the existing CTO keeping in view sensitivity of surrounding area of GIDC Pandesara, Project proponent as well as their EIA consultant could not replied satisfactorily.
- 9) Committee also asked to submit the following:
 - Revised lay out.
 - OHC at ground floor.
 - List of raw material with Storage quantity with (Product wise as well as cumulative) and its management in line to the prevailing safety guidelines.
 - Revised CER including Solar Panel
 - Number of peoples to be affected with threat zone inhouse plus outside the premises due to leakage in HCl storage tank. Revised risk assessment report in this regard.
 - Storage details of raw materials other than HCl
 - Details regarding temporary number of persons.
- 10) PP presented salient features of the project including Water, Air and Hazardous waste management.

• **After detail deliberation, Committee decided to consider the proposal only after satisfactory submission of the following details.**

1. Justification for expansion within existing premises in compliance to the existing CTO keeping in view sensitivity of surrounding area of GIDC Pandesara.
2. Revised site Plan/layout including fire plan & floor plans and provision of separate entry & exits, peripheral road, OHC, production areas, raw material & finished goods storage areas, ETP area, utility area, hazardous waste storage area, hazardous chemical storage area, greenbelt etc.
3. List of raw material with Storage quantity with (Product wise as well as cumulative) and its management in line to the prevailing safety guidelines.

4. Revised CER including Solar Panel
5. Number of peoples to be affected with threat zone inhouse plus outside the premises due to leakage in HCl storage tank. Revised risk assessment report in this regard.
6. Storage details of raw materials other than HCl
7. Details regarding temporary number of persons.

02	SIA/GJ/IND3/240642/2021	M/s. Cropel Lifesciences Private Limited Plot No. D-2/CH/365+366+367, Dahej 2 GIDC Industrial Estate, Dist.-Vagra, Gujarat	EC
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Category of the unit: **5 (f)**

Project status: **New**

1) Details of Application:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	SIA/GJ/IND3/240642/2021
1.3. Category of Project:	5 (f) – B2
1.4. Date of application:	24.11.2021
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 Ecopreneur Incorporate
1.8. SEAC Meeting No. and Date:	399 th meeting dated 11.04.2022
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	150.0
2	R & D	0.1

SR. No.	NAME OF PRODUCT	API OR INTERMEDIATE	CAS No.	Quantity MT/Month	End-use of the Products

1	Adapalene	API	106685-40-9	50 TPM (Sr. no. 1 to 50)	This medication is used to treat acne. It may decrease the number and severity of acne pimples and promote quick healing of pimples that do develop.
2	Alpha Lipoic Acid	API	1077-28-7		Alpha-lipoic acid is an antioxidant that is made naturally in the body and also found in foods. It is used to break down carbohydrates and to make energy.
3	Atovaquone	API	95233-18-4		Atovaquone is used to treat or prevent pneumonia
4	Bronopol	API	52-51-7		Bronopol is <u>Used as an antimicrobial</u>
5	Benidipine HCl	API	91599-74-5		Benidipine HCl is usually used for the treatment of hypertension, renal parenchymal hypertension, and angina pectoris.
6	Cetirizine hydrochloride	API	83881-52-1		Cetirizine Hydrochloride are used for the relief of symptoms of hayfever and other allergic conditions (e.g. sneezing, runny or itchy nose) or for skin rashes (chronic nettle rash, idiopathic urticaria) in adults and children over 6 years of age.
7	Clotrimazole	API	23593-75-1		Clotrimazole is used to treat vaginal yeast infections, oral thrush, diaper rash, pityriasis versicolor, and types of ringworm including athlete's foot.
8	Dapagliflozin	API	461432-26-8		This medication used to treat type 2 diabetes. It is also used to treat adults with certain kinds of heart failure.
9	Desloratidine	API	100643-71-8		It is used in adults and children to relieve hay fever and allergy symptoms, including sneezing; runny nose;

					red, itchy, tearing eyes.
10	Diacerein	API	13739-02-1		Diacerein is used to treat joint diseases such as osteoarthritis
11	Diclofenac Sodium	API	15307-79-6		Diclofenac Sodium is used to relieve joint pain from arthritis
12	Ethopabate	API	59-06-3		Ethopabate is used to treat infections caused by protozoa, which are single cell organisms that belong to the type of parasites.
13	Etoricoxib	API	202409-33-4		Etoricoxib is indicated for the treatment of rheumatoid arthritis, psoriatic arthritis, osteoarthritis, ankylosing spondylitis, chronic low back pain, acute pain, and gout.
14	Felbinac	API	5728-52-9		Felbinac helps to provide relief from painful joint and muscular inflammations caused due to sprains or strains.
15	Fluconazole	API	86386-73-4		Fluconazole is used to treat vaginal yeast infections. It works by stopping the growth of common types of vaginal yeast (fungus).
16	Glimepiride	API	93479-97-1		Glimepiride used with a proper diet and exercise program to control high blood
17	Lercanidipine	API	100427-26-7		Lercanidipine is used in the treatment of high blood pressure.
18	Levocetirizine Hydrochloride	API	130018-87-0		Levocetirizine is an antihistamine used to relieve allergy symptoms such as watery eyes, runny nose, itching eyes/nose, and sneezing.
19	Lidocaine	API	137-58-6		Lidocaine is a local anesthetic agent that is commonly used for local and topic anesthesia, It can be used as an adjunct to tracheal intubation.

20	Linezolid	API	165800-03-3	Linezolid is used to treat different types of bacterial infections, such as pneumonia, skin infections, and infections that are resistant to other antibiotics.
21	Lornoxicam	API	70374-39-9	Lornoxicam is an NSAID indicated in the treatment of mild to moderate pain, as well as rheumatoid arthritis and osteoarthritis.
22	Losartan Potassium	API	124750-99-8	Losartan is an angiotensin II receptor blocker used to treat hypertension, diabetic nephropathy, and to reduce the risk of stroke.
23	Luliconazole	API	105816-04-4	Luliconazole is used to treat diabetes mellitus type 2.
24	Meloxicam	API	71125-38-7	Meloxicam is used to treat arthritis. It reduces pain, swelling, and stiffness of the joints. Meloxicam is known as a nonsteroidal anti-inflammatory drug (NSAID).
25	Metoclopramide base	API	364-62-5	Metoclopramide base is used mostly for heartburn that occurs after a meal or during the daytime.
26	Metoclopramide hydrochloride	API	7232-21-5	Metoclopramide hydrochloride is used to treat certain conditions of the stomach and intestines.
27	Metoprolol succinate	API	98418-47-4	Metoprolol succinate is used to treat chest pain and hypertension (high blood pressure). It is also used to lower your risk of death or needing to be hospitalized for heart failure.

28	Metoprolol tartarate	API	56392-17-7	Metoprolol tartarate is used to treat High blood pressure (hypertension).
29	Metoprolol hydrochloride	API	56392-18-8	Metoprolol hydrochloride is used to treat chest pain (angina), heart failure, and high blood pressure. Lowering high blood pressure helps prevent strokes, heart attacks, and kidney problems.
30	Nebivolol hydrochloride	API	152520-56-4	Nebivolol hydrochloride is highly cardio selective under certain circumstances
31	Ondansetron hydrochloride	API	103639-04-9	Ondansetron hydrochloride is used to prevent nausea and vomiting caused by cancer chemotherapy, radiation therapy, and surgery.
32	Oxcarbazepine	API	28721-07-5	Oxcarbazepine is used either alone or with other medicines to treat partial seizures
33	Palenesetron hydrochloride	API	135729-62-3	Palenesetron hydrochloride is prescription medicine used in adults to help prevent the nausea and vomiting that happens with certain anticancer medicines.
34	Pantoprazole Sodium	API	138786-67-1	Pantoprazole Sodium is used to treat erosive esophagitis (damage to the esophagus from stomach acid caused by gastroesophageal reflux disease, or GERD) in adults and children who are at least 5 years old.
35	Perindopril Erbumine	API	107133-36-8	Perindopril is a medicine used to treat high blood pressure and heart failure. It's also prescribed after a heart attack.
36	Phenylephrine Hydrochloride	API	61-76-7	Phenylephrine is used to relieve nasal

					discomfort caused by colds, allergies, and hay fever.
37	Pregabalin	API	148553-50-8		Pregabalin capsules and oral solution are used along with other medications to treat certain types of seizures in adults and children 1 month of age and older.
38	Prilocaine	API	721-50-6		Prilocaine is Anaesthetic agent- used to prevent pain caused by an injection.
39	Prochlorperazine Maleate	API	84-02-6		Prochlorperazine Maleate Tablets is an antipsychotic used to treat schizophrenia, and is also an antiemetic used to control severe nausea and vomiting.
40	Rabeprazole Sodium	API	117976-90-6		Rabeprazole Sodium is used to treat certain stomach and esophagus problems (such as acid reflux, ulcers).
41	Rivaroxaban	API	366789-02-8		Rivaroxaban is used to prevent or treat a type of blood clot called deep vein thrombosis (DVT), which can lead to blood clots in the lungs (pulmonary embolism)
42	Sevelamer	API	52757-95-6		Sevelamer is a phosphate binding medication used to treat hyperphosphatemia in patients with chronic kidney disease
43	Tadalafil	API	171596-29-5		Tadalafil is used to treat erectile dysfunction (ED, impotence; inability to get or keep an erection), and the symptoms of benign prostatic hyperplasia.

44	Tamsulosine hydrochloride	API	106463-17-6		Tamsulosin is used by men to treat the symptoms of an enlarged prostate (benign prostatic hyperplasia-BPH).
45	Terbinafine HCL	API	78628-80-5		Terbinafine HCL is used to treat a variety of fungal skin infections such as ringworm, athlete's foot, and jock itch.
46	Tolperisone Hydrochloride	API	3644-61-9		Tolperisone Hydrochloride is a muscle relaxant used to relieve spasticity after stroke in adults.
47	Topiramate	Intermediate	97240-79-4		Topiramate is used to prevent migraine headaches
48	Trifluoperazine hydrochloride	Intermediate	440-17-5		Trifluoperazine hydrochloride is used to treat certain mental/mood disorders (such as schizophrenia, psychotic disorders).
49	Voriconazole	Intermediate	137234-62-9		Voriconazole medicine used to treat Invasive Aspergillosis, Candidemia, Esophageal Candidiasis and Serious Fungal Infections.
50	Vildagliptin	Intermediate	274901-16-5		Vildagliptin is used to treat diabetes mellitus type 2.
51	(+/-)-trans-4-(4-Fluorophenyl)-3-(hydroxymethyl)-1-methylpiperidine	Intermediate	318279-38-8		100 TPM (Sr. no. 51 to 75)
52	±3-(Carbamoyl Methyl Hexanoic Acid	Intermediate	181289-15-6	Pregabalin capsules and oral solution are used along with other medications to treat certain types of seizures in adults and children 1 month of age and older.	
53	2,2-Dimethoxyethanamine	Intermediate	22483-09-6	Dolutegravir is an antiviral medicine that is used with other	

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

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

					certain types of seizures in adults and children 1 month of age and older.
71	2-[(dimethylamino) methyl] cyclohexanone hydrochloride	Intermediate	42036-65-7		Tramadol is used to treat moderate to severe pain in adults. The extended-release form of tramadol is for around-the-clock treatment of pain.
72	1-(2,4-Difluorophenyl)-2-(1H-1,2,4-triazol-1-yl)ethanone	Intermediate	110-59-8		Losartan potassium is medication mainly used to treat high blood pressure.
73	Valero Nitrile	Intermediate	124750-51-2		Losartan potassium is medication mainly used to treat high blood pressure.
74	5-(4'-Bromomethyl-1, 1'-Biphenyl-2-YL)-1-Triphenylmethyl-1H-Tetrazole (TTBB)	Intermediate	83857-96-9		Losartan potassium is medication mainly used to treat high blood pressure.
75	Para Amino Salicylic Acid	Intermediate	65-49-6		Rifampicin is used to prevent and treat tuberculosis and other infections. This antibiotic treats only bacterial infections.
*R&D				0.1 MT/Month	
TOTAL				150.1 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 11.04.2022.
- 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:**
 - ✓ Submit GIDC plot allotment letter with mentioning its purpose for API manufacturing
 - ✓ Submit revised layout plan with mentioning PESO tank farm area, non-PESO tank farm area and storage of hazardous chemicals considering its type of hazard and compatibility chart and mentioning area adequacy considering storage of chlorine, bromine, hydrogen, Ammonia and various solvents with land break up.
 - ✓ Submit CETP membership certificate for proposed wastewater quantity of GIDC Dahej.

- ✓ Technical clarification regarding storage of ammonia mentioned in cylinder of 900 kg and revised storage details of ammonia considering worst case scenario for usage as raw material for proposed project
- ✓ Risk assessment of chlorine, bromine, hydrogen, Ammonia and various solvent like methanol, toluene and other Hazardous chemicals storage & its handling considering worst case scenario of any blast, leakage or fire and super impose of satellite image for dispersion model with mentioning its impact on surrounding villages residential habitat area and its mitigation measures. Also standard operating procedure (SOP) for handling and storage of oleum and emergency spare storage tank for chlorine, bromine, hydrogen, Ammonia and various solvent like methanol, toluene and other Hazardous chemicals storage and details of offsite emergency plan details considering population affected due to proposed Hazardous chemicals storage along with its remedial measures.

- 8) Later on PP submitted above mentioned details.
- 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. 10 Crores</td> </tr> </table>			Total Project	Rs. 10 Crores												
Total Project																
Rs. 10 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>2.95</td> </tr> <tr> <td>Building</td> <td>1.2</td> </tr> <tr> <td>Machinery</td> <td>2.15</td> </tr> <tr> <td>Env. & Safety</td> <td>3.7</td> </tr> <tr> <td>Miscellaneous</td> <td>--</td> </tr> <tr> <td>Total</td> <td>10</td> </tr> </tbody> </table>			Details	Project Cost (Rs. In Crores)	Land	2.95	Building	1.2	Machinery	2.15	Env. & Safety	3.7	Miscellaneous	--	Total	10
Details	Project Cost (Rs. In Crores)															
Land	2.95															
Building	1.2															
Machinery	2.15															
Env. & Safety	3.7															
Miscellaneous	--															
Total	10															

A-2	Details of CER -									
PP shall carry out CER activities as below:										
<ul style="list-style-type: none"> ✓ Solar Power and Rainwater harvesting management ✓ Installation of Solar Street Light near Gam Panchayat Area – ✓ Installation of Roof Top Solar System for Gam Panchayat Office 										
B	Land / Plot ownership details:									
Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/ENG/DEE/ANK/DAH1/00013/2021/389 on dated 07/09/2021 in favor of Cropel Lifesciences Private Limited.										
B-1	Plot area									
<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">Total Plot area</td> <td style="width: 50%;"></td> </tr> <tr> <td>11307.42 Sq. m.</td> <td></td> </tr> </table>							Total Plot area		11307.42 Sq. m.	
Total Plot area										
11307.42 Sq. m.										
B-2	Area adequacy									
Area Adequacy table:										
Sr. No.	Area	Ground Floor	First Floor	Second Floor	Sq. M.	%				
1	Production Area	0	211	211						
	R. M. Storage: - Drum	145	0	0						
	R.M. Storage: - Bag	66	0	50						
	Total API Products	211	211	261	683	1.9				
2	Production Area	0	253	253						
	R. M. Storage: - Drum	158	0	0						
	R.M. Storage: - Bag	95	0	50						
	Production Area- Intermediate Products	253	253	303	809	2.2				
3	Area for future Expansion	400	0	0	400	3.5				
3	R. M. Storage:- Toxic Material	200	0	0	200	1.8				
4	R. M. Storage-Corrosive Material	100	0	0	100	0.9				
5	F.G. Storage	154	154	0						
	Packing Area	130	130	0						
	Labelling Area	120	120	0						
	Total F.G Storage Area	404	404	0	808	3.6				
6	Utility Area	188	0	0	188	1.7				
7	ETP Area	310	0	0	310					
	Solid Waste storage Area	55	0	0	55					
	Haz Waste storage area	90	0	0	90					
	Total ETP Area	455	0	0	455	4.0				
8	Fresh Solvent Storage Area	120	0	0	120	1.1				
9	Recover Solvent Storage Area	250	0	0	250	2.2				
10	Tank Farm storage area For Acids	135	0	0	135					
	Tank Farm storage area for PESO Material	170	0	0	170					
	Tank Farm storage area	305	0	0	305	2.7				
11	Green Belt Area	3731.45	0	0	3731	33.0				
12	OH centre	135	0	0						
	QC Lab Area	0	135	0						
	Office Area	0	0	135						
	Total Admin Area	135	135	135	405	1.2				

13	Parking Area	113.0742	0	0	113	1.0
14	Open Area	4441.90	0	0	4442	39.3
	TOTAL	11307.42				100

- Production capacity: 150 MT/Month.
- Company will store its raw material in Tanks (We procure Raw Materials from the local market. 90% of these raw materials are easily available from this market. Hence, no excess quantity of raw materials will be stored).
- List of Hazardous chemicals stored in tanks shown below.

S. N.	Name of chemical	Quantity (Nos.)	Total (Nos.)	Total Qty. to be store (KL)
Non-PESO solution				
1	Sulphuric Acid	10 KL	1 Nos.	9.33 KL
2	Nitric Acid	5 KL	1 Nos.	3.03 KL
3	Hydrochloric Acid	10 KL	1 Nos.	7.51 KL
PESO Solution-Drum				
1	Acetic acid	250 Lit	16 Nos.	4 KI
2	Acetone	250 Lit	31 Nos.	7.88 KI
3	Chloroform	250 Lit	45 Nos.	11.33 KI
4	DMF	250 Lit	41 Nos.	10.50 KI
5	EDC	250 Lit	9 Nos.	2.33 KI
6	Ethanol	250 Lit	28 Nos.	7 KI
7	Ethyl acetate	250 Lit	37 Nos.	9.33 KI
8	IPA	250 Lit	33 Nos.	8.17 KL
PESO Solution-Tank				
9	MDC	30 KL	1 Nos.	29.28 KL
10	Methanol	15 KL	1 Nos.	13.64 KL
11	Toluene	30 KL	1 Nos.	22.05 KI
Set of Cylinder and Bottle				
1	Hydrogen Gas	60 Kg	6 Nos.	0.35 M ³
2	Ammonia Gas	50 Kg	76 Nos.	3.78 M ³
3	Bromine Solution	3 Kg.	467 Nos.	1.40 MT
4	Chlorine Gas	900 Kg	4 Nos.	2.80 M ³

- Area required for ETP 250 m².
- 160.0 m² area provided for the Boiler House.
- 2100.0 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/Drums : 700 0.6 m ² / 1 Bag	35	140	300
2	Raw Material Storage area (1 week inventory)	Drums: 320 (0.5 m ² /1 Drum)	80	112	200
3	Raw Material Storage area (1 week inventory)	Bags: 800 (0.6 m ² / 1	40	160	200

		Bag)			
4	Solvent storage area	Drums: 560 (0.5 m ² /1 Drum)	140	172	370
5	Hydrogen Cylinder storage area	-	0.35	6	10
6	Chlorine Tonner Area	-	2.80	30	40
7	Bromine storage area	--	1.40	30	50
8	Ammonia cylinder area		3.78	40	60
			303.33 MT	690 m²	1230 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	3731.44 inside
% of total area	33% Inside

Comments:

The condition shall be given that -

- The PP shall develop green belt (3731.44 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
	100

D WATER

D-1 Source of Water Supply

- GIDC Water supply.
- Ref. No. GIDC/DEE/WS/BRH/1368, Dated: 27.01.2022

Comments:

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

D-2 Water consumption (KLD)

-

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

-

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)

-

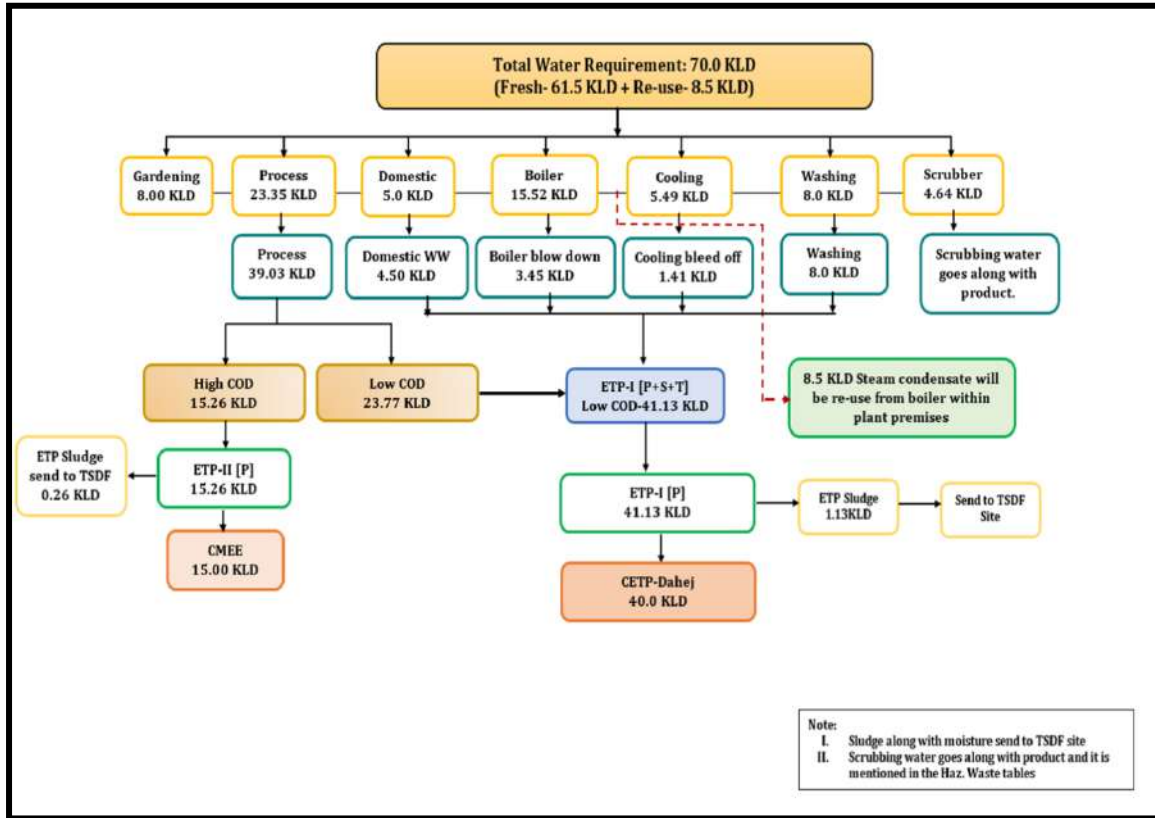
Category	Waste water KLD
(A) Domestic	4.5
(B) Industrial	
Process	39.03
Washing	8.00
Boiler	3.45
Cooling	1.41
Others (Scrubber)	0.00
Total Industrial waste water	51.89
Total [A + B]	56.39

-

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)			
<p>4.5 KLD Domestic Wastewater will be treated in ETP I.</p> <p><u>Comments:</u></p> <p>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.</p>				
D-5a	Break-up of waste water disposal & facility (For Industrial)			
		Sr. no.	Quantity KLD	Facility
		1	36.63 KLD	Low COD Effluent generated from process will be mixed with Domestic, Utilities and Washing section will be treated into Effluent treatment plant [Primary + Secondary+ Tertiary] and after adequate treatment it will be send to CETP-Dahej for further treatment and disposal.
		2	15.26 KLD	High COD Effluent generated from Process will be treated into Effluent treatment plant [Primary] and after adequate treatment effluent send to Common MEE for further disposal.
		Total	51.89 KLD	
<p>Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)</p> <p>Membership certificate of M/s: BEIL-Ankleshwar vide no. Ref. BEIL/ANK/2022 dated 05.01.2022</p> <p>Membership certificate of Dahej-CETP vide no. Ref. GIDC/BRH/DEE/DRG/993 dated 01.02.2022</p>				
D-5b	Simplified water balance diagram			



D-5c	Summary		
	Summary of water requirement	Quantity KLD	Remarks
	Total water requirement for the project (A)	70.0	
	Quantity to be recycled (B)	8.5	
	Total fresh water requirement (C)	61.5	
	Ensure Total water requirement = Recycled water + Fresh water i.e. A = B + C		

Comments:

- Total water requirement for the project shall not exceed 70 KLD. Unit shall reuse 8.5 KLD of treated industrial effluent within premises. Hence, freshwater requirement shall not exceed 61.5 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:
 - ✓ Low COD Effluent generated from process shall be mixed with Domestic, Utilities and Washing section [Total 41.13 KLD] shall be treated into Effluent treatment plant [Primary + Secondary+ Tertiary] and after adequate treatment it shall be send to CETP-Dahej for further treatment and disposal.

- ✓ High COD Effluent generated from Process [15.26 KLD] shall be treated into Effluent treatment plant [Primary] and after adequate treatment effluent send to Common MEE [15.0 KLD] for further disposal.
- ✓ Unit shall send waste water to Common MEE and CETP-Dahej 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.

3. Unit shall provide ETP with adequate capacity.

4. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

E AIR

E-1 Power (Electricity) requirement :250 KVA

E-2 Flue gas emission details

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 [Cap. 2 TPH]	30	Natural Gas OR Briquette / Agro Waste	1720 SCM/Day OR 3.0 MT/Day	PM, SO ₂ , NO _x	Adequate stack height or Multi Cyclone Separator + Bag Filter + Water Scrubber
2.	Boiler [Cap. 1 TPH]	30	Natural Gas OR Briquette / Agro Waste	860 SCM/Day 1.5 MT/Day	PM, SO ₂ , NO _x	Adequate stack height or Multi Cyclone Separator + Bag Filter + Water Scrubber
3.	Thermic Fluid Heater [Cap. 4 lakh Kcal/Hr.]	30	Natural Gas OR Briquette / Agro Waste	950 SCM/Day 4 MT/Day	PM, SO ₂ , NO _x	Adequate stack height or Multi Cyclone Separator + Bag Filter + Water Scrubber
4.	D.G. Set [Cap. 120 KVA]	15	Diesel	60 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-I [HCl: Product no. 3,5,7,15,41,61,62,64,69,72]	HCl	20	Two Stage Scrubber (Water Scrubber + Alkali Scrubber)		
2	Reaction Vessels-II [NH ₃ : From Product No. 53]	NH ₃	20	Two Stage Acidic Scrubber		
3	Reaction Vessels-III [HBr: From Product No. 4,44,55,57,62] [SO ₂ : From Product no.3,5,59]	HBr, SO ₂	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.	Product	Solvent	Boiling point	Fresh Qty MT/ Month	Recover Qty MT /Month	% Rec.
1	Adapalene	IPA	82.5 °C	10.00	9.60	96.00

		MDC	39.6 °C	15.00	14.50	96.67
		Methanol	64.7 °C	5.00	4.80	96.00
2	Alpha Lipoic Acid	Toluene	110.6 °C	94.50	91.67	97.00
		MDC	39.6 °C	125.50	121.74	97.00
3	Atovaquone	Acetone	56 °C	10.00	9.60	96.00
5	Benidipine HCl	IPA	82.5 °C	15.00	14.50	96.67
		Toluene	110.6 °C	10.00	9.60	96.00
		MDC	39.6 °C	7.50	7.25	96.67
6	Cetirizine hydrochloride	Toluene	110.6 °C	11.00	10.67	97.00
		DMF	153 °C	11.00	10.67	97.00
		Acetone	56 °C	7.50	7.28	97.00
7	Clotrimazole	Acetone	56 °C	45.00	44.00	97.78
8	Dapagliflozin	THF	66 °C	9.38	8.81	94.00
		Isopropyl Acetate	89 °C	10.42	10.00	96.00
		Heptane	98.42 °C	8.85	8.41	95.00
		MDC	39.6 °C	8.33	8.08	97.00
		Iso Propyl Alcohol	82.5 °C	12.50	12.00	96.00
		Methanol	64.7 °C	10.42	9.90	95.00
		Ethyl acetate	77.1 °C	10.42	10.10	97.00
		Cyclohexane	80.75 °C	12.50	11.88	95.00
9	Desloratidine	Cyclohexane	80.75 °C	10.00	9.60	96.00
		Methanol	64.7 °C	10.00	9.60	96.00
		Toluene	110.6 °C	12.00	11.52	96.00
10	Diacerein	Methanol	64.7 °C	103.09	99.48	96.50
11	Diclofenac Sodium	Toluene	110.6 °C	43.75	41.56	95.00
		Sodium Methoxide	350 °C	37.57	36.44	97.00
12	Ethopabate	Toluene	110.6 °C	19.50	18.92	97.00
13	Etoricoxib	Toluene	110.6 °C	20.00	19.20	96.00
14	Felbinac	Methanol	64.7 °C	96.15	91.35	95.00
15	Fluconazole	EDC	83.47 °C	32.50	31.53	97.00
		Toluene	110.6 °C	75.00	72.75	97.00
		IPA	82.5 °C	35.00	33.95	97.00
16	Glimepiride	Methanol	64.7 °C	36.50	35.77	98.00
		Acetone	56 °C	72.99	71.17	97.50
17	Lercanidipine	Toluene	110.6 °C	49.32	48.09	97.50
		Methanol	64.7 °C	24.66	24.17	98.00
		Methylene dichloride	39.6 °C	24.66	22.93	93.00
18	Levocetirizine Hydrochloride	Triethyl Amine	89.28 °C	25.64	25.13	98.00
		Toluene	110.6 °C	25.64	25.00	97.50
		MDC	39.6 °C	23.08	22.38	97.00
		Acetone	56 °C	20.51	19.90	97.00
19	Lidocaine	Diethyl Amine	55.5 °C	20.00	19.20	96.00
		Toluene	110.6 °C	25.00	24.00	96.00

20	Linezolid	Ethyl acetate	77.1 °C	13.00	12.48	96.00
		Ethylene Dichloride	83.47 °C	14.50	14.07	97.00
21	Lornoxicam	O-Xylene	144 °C	10.00	9.60	96.00
		Methanol	64.7 °C	15.00	14.50	96.67
22	Losartan Potassium	Methanol	64.7 °C	20.00	19.20	96.00
23	Luliconazole	Methanol	64.7 °C	64.10	63.14	98.50
24	Meloxicam	O - Xylene	144 °C	30.00	28.80	96.00
		Isopropyl Alcohol	82.5 °C	8.35	8.10	97.00
		Acetic Acid	118 °C	25.00	24.00	96.00
25	Metocloprami de base	Toluene	110.6 °C	15.50	14.73	95.00
		IPA	82.5 °C	10.00	9.70	97.00
26	Metocloprami de hydrochloride	Isopropyl alcohol	82.5 °C	113.64	110.00	96.80
27	Metoprolol succinate	Isopropyl alcohol	82.5 °C	100.00	99.00	99.00
28	Metoprolol tartarate	Isopropyl alcohol	82.5 °C	100.00	99.00	99.00
29	Metoprolol hydrochloride	Isopropyl alcohol	82.5 °C	15.00	14.40	96.00
30	Nebivolol hydrochloride	Methanol	64.7 °C	25.00	24.38	97.50
		Isopropyl alcohol	82.5 °C	18.75	18.25	97.33
31	Ondansetron hydrochloride	Isopropyl alcohol	82.5 °C	125.00	120.00	96.00
32	Oxcarbazepin e	Methanol	64.7 °C	50.00	48.50	97.00
		MDC	39.6 °C	30.00	29.10	97.00
33	Palenesetron hydrochloride	Hexane	69 °C	13.00	12.48	96.00
		THF	66 °C	11.00	10.67	97.00
		IPA	82.5 °C	12.50	12.13	97.00
		Ethyl Acetate	77.1 °C	13.25	12.85	97.00
34	Pantoprazole Sodium	MDC	39.6 °C	15.00	14.55	97.00
		Acetone	56 °C	10.00	9.60	96.00
		Ethyl acetate	77.1 °C	12.00	11.52	96.00
35	Perindropil Erbumine	Methylene dichloride	39.6 °C	29.07	28.20	97.00
		Isopropyl alcohol	82.5 °C	48.45	47.00	97.00
36	Phenylephrin e Hydrochloride	Methanol	64.7 °C	11.00	10.56	96.00
		Chloroform	61.2 °C	6.50	6.24	96.00
		IPA	82.5 °C	16.00	15.36	96.00
		L(+) Tartaric acid	399.3 °C	10.00	9.60	96.00
37	Pregabaline	Acetone	56 °C	6.00	5.76	96.00
		Iso Propyl alcohol	82.5 °C	20.00	19.40	97.00

		Methanol	64.7 °C	10.00	9.70	97.00
		Chloroform	61.2 °C	16.00	15.52	97.00
38	Prilocaine	Methylene Dichloride	39.6 °C	51.60	49.54	96.00
		N - Propylamine	47.8 °C	25.00	24.00	96.00
		Hexane	69 °C	22.50	21.60	96.00
39	Prochlorperazine Maleate	Toluene	110.6 °C	7.50	7.28	97.00
40	Rabeprazole Sodium	Methanol	64.7 °C	11.63	11.16	96.00
		MDC	39.6 °C	5.81	5.58	96.00
		Ethyl acetate	77.1 °C	6.98	6.70	96.00
		Cyclohexane	80.75 °C	9.30	8.93	96.00
		Ethanol	78.37 °C	5.81	5.58	96.00
		Di-isopropyl ether	69 °C	11.63	11.16	96.00
		Toluene	110.6 °C	6.98	6.70	96.00
41	Rivaroxaban	Toluene	110.6 °C	12.50	12.13	97.00
		Xylene	139 °C	5.00	4.85	97.00
		Methanol	64.7 °C	15.00	14.55	97.00
		Methylene chloride	39.6 °C	12.50	12.13	97.00
		Acetone	56 °C	15.00	14.55	97.00
43	Tadalafil	Methylene dichloride	39.6 °C	71.81	68.58	95.50
		Methanol	64.7 °C	17.29	17.03	98.50
44	Tamsulosine hydrochloride	IPA	82.5 °C	10.00	9.60	96.00
		Methanol	64.7 °C	25.00	24.25	97.00
45	Terbinafine HCL	Toluene	110.6 °C	50.00	48.00	96.00
		Isopropyl Alcohol(IPA)	82.5 °C	45.00	43.20	96.00
46	Tolperisone Hydrochloride	Toluene	110.6 °C	54.05	53.24	98.50
		Isopropyl alcohol	82.5 °C	23.78	23.51	98.86
47	Topiramate	Ethylene dichloride	83.47 °C	50.76	49.75	98.00
48	Trifluoperazine hydrochloride	Toluene	110.6 °C	11.10	10.66	96.00
		Ethyl acetate	77.1 °C	11.00	10.67	97.00
49	Voriconazole	Methylene dichloride	39.6 °C	32.89	32.01	97.30
		Tetra hydrofuran	66 °C	27.41	26.10	95.20
50	Vildagliptin	DMF	153 °C	10.00	9.60	96.00
		IPA	82.5 °C	5.00	4.80	96.00
51	(+/-)-trans-4-(4-	Toluene	110.6 °C	16.00	15.52	97.00
		Ethanol	78.37 °C	10.00	9.70	97.00

	Fluorophenyl)-3-(hydroxymethyl)-1-methyl piperidine	n-Heptane	98.42 °C	5.00	4.85	97.00
		THF	66 °C	10.00	9.70	97.00
		DIPE	69 °C	9.00	8.64	96.00
		Ethyl acetate	77.1 °C	10.00	9.60	96.00
52	3 – Carbomoyl methyl – 5 – Methyl Hexanoic Acid	Toluene	110.6 °C	25.00	24.00	96.00
56	2-n-Butyl-3(4-Hydroxy Benzoyl) Benzofuran	Methanol	64.7 °C	119.76	115.57	96.50
57	3-(3-chloro propyl)-7,8-dimethoxy-1,3-dihydro-2H-3-benzazepin-2-one	Methanol	64.7 °C	20.00	19.20	96.00
58	4-(2-Methoxy ethyl) Phenol	Ethylene dichloride	83.47 °C	66.67	63.33	95.00
		Methanol	64.7 °C	58.33	55.42	95.00
59	Bis-(2-chloro ethyl amine) hydrochloride	EDC	83.47 °C	50.00	48.00	96.00
		Acetone	56 °C	20.00	19.40	97.00
60	2-Amino 5-Methyl Thiazole	Toluene	110.6 °C	50.00	48.00	96.00
61	Dimethyl aminoethylchloride hydrochloride	Ethylene dichloride	83.47 °C	200.00	196.00	98.00
		Isopropyl alcohol	82.5 °C	50.00	49.00	98.00
62	Methyl-5-bromo-2-hydroxy-3-propanoylbenzoate	EDC	83.47 °C	20.00	19.20	96.00
63	Ketosulfone	Tetrahydrofuran	66 °C	90.00	87.30	97.00
64	Dibenzo[b,f][1,4]Thiazepin-11[10H]-One	Ethanol	78.37 °C	62.50	60.63	97.00
65	N,N-Diethyl Ethylene Diamine	Toluene	110.6 °C	100.00	97.50	97.50
66	N-octyl d-glucamine	Methanol	64.7 °C	133.33	129.33	97.00
68	Para Chloro Benzhydryl Piperazine	Toluene	110.6 °C	96.00	94.08	98.00

69	Para Chloro Benzo Phenone	Methanol	64.7 °C	60.00	57.60	96.00
70	Ethyl cyanoacetate	Toluene	110.6 °C	30.00	29.10	97.00
		Ethanol	78.37 °C	35.00	33.95	97.00
71	2-[(dimethyl amino) methyl] cyclohexanone hydrochloride	IPA	82.5 °C	50.00	49.00	98.00
72	1-(2,4-Difluorophenyl)-2-(1H-1,2,4-triazol-1-yl)ethanone	EDC	83.47 °C	22.22	21.56	97.00
73	Valero Nitrile	DMSO	189 °C	30.00	28.50	95.00
74	5-(4'-Bromomethyl-1, 1'-Biphenyl-2-YL)-1-Triphenylmethyl-1H-Tetrazole (TTBB)	Toluene	110.6 °C	21.00	20.26	96.48
		MDC	39.6 °C	25.00	24.12	96.48
		Methanol	64.7 °C	13.00	12.61	97.00
		Ethyl acetate	77.1 °C	10.00	9.60	96.00
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:

1. Process Controls
2. Emissions control program
3. Selection of appropriate method for leak detection
4. Scheduling and checklist for Leak Detection
5. Methods for rectification of identified leaks
6. Frequency of Monitoring
7. Record keeping of LDAR Program

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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

S r. 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.	Empty barrels/ containers/liners contaminated with hazardous chemicals /wastes	Raw Material and Packaging	33.1	150	Collection, Storage, Transportation, Decontamination, reuse or send back to supplier, and sold to Authorized end users registered under rule-9.
2.	Used or Spent Oil	From Machinery	5.1	1.0	Collection, Storage, Transportation and sold to authorized Recyclers.
3.	ETP Sludge	ETP	35.3	500.4	Collection, Storage, Transportation and sent to TSDF site. (Through GPS mounted vehicle)
5.	Process Waste	From Product No. 14,58 Max generation from Felbinac, 4-	28.1	339	

		(2-Methoxy ethyl) Phenol			
6.	Hyflow	From Product No. 14,32 Max generation form Felbinac	28.1	47	
7.	Distillation Residue	From Product 1 to 3, 5 to 10, 12 to 15, 18 to 25, 30 to 41,43 to 46,48 50 to 52,54 to 66, 68 to 74 Max generation from Terbinafine HCL, (+/-)-trans-4-(4-Fluorophenyl)-3-(hydroxymethyl)-1-methyl piperidine	20.3	208	Collection, Storage, transportation and sent for co-processing in cement industries or disposal at common incineration at CHWIF. (Through GPS mounted vehicle)
8.	Spent Carbon	From Product 10,13,14,16, 19 to 21,24, 26 to 30,33,36, 40,41,50,52,64 Max generation from Diacerein, Dibenzo[b,f][1,4]Thiazepin-11[10H]-One	28.3	87	
9.	Spent Catalyst	From Product no 40,58,66 Max generation from Rabepazole Sodium, N-octyl d-glucamine	28.2	54	Collection, Storage, transportation and sent for co-processing in cement industries or disposal at common incineration at CHWIF. (Through GPS mounted vehicle)
10.	Off specification Products	Process	28.4	20	
11.	Sodium Bromide [NaBr] Sol. [30-40%]	Scrubber & Product No 4,44,55,57,62 Max generation from Bronopol, 2-n-Butyl Benzofuran	--	2372	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
12.	Sulfuric Acid [H ₂ SO ₄] Sol. [60-70%]	From Product no 12 Max generation from Ethopabate	SCH-II- / B(15)	60	

1 3.	Ammonium Sulfate Sol.[30-40%]	From Product no 53 Max generation from 2,2-Dimethoxyethanamine	---	391	
1 4.	HCl Sol. [28-33%]	From Product no 3,5,7,15,41,61,62,64,69,72 Max generation from Benidipine HCl, Para Chloro Benzo Phenone	SCH-II- / B(15)	1152	Collection, Storage, and reused in manufacturing process and/or Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
1 5.	Sodium Bisulfite Sol. [NaHSO ₃ Sol.] [30-35%]	Scrubber & Product No. 3,5,59 Max generation from Benidipine HCl, Bis-(2-chloroethyl amine)hydrochloride	---	1493	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
1 6.	AlCl ₃ Solution [30-35%]	From Product no 72 Max generation from 1-(2,4-Difluorophenyl)-2-(1H-1,2,4-triazol-1-yl)ethanone	---	534	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
1 7.	Spent Solvent	From Product 1 to 3, 5 to 15, 18 to 25, 30 to 46, 48, 50 to 66, 68 to 75	20.2	3044	Collection, Storage, Recovery and Recycle for manufacturing of product.
1 8.	Sodium Hypo chlorite Solution	APCM Scrubber	--	60	Collection, storage and utilised into ETP for further Treatment.
<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 100 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

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S. N.	Name of chemical	Quantity (Nos.)	Total (Nos.)	Total Qty. to be store (KL)
Non-PESO solution				
1	Sulphuric Acid	10 KL	1 Nos.	9.33 KL
2	Nitric Acid	5 KL	1 Nos.	3.03 KL
3	Hydrochloric Acid	10 KL	1 Nos.	7.51 KL
PESO Solution-Drum				
1	Acetic acid	250 Lit	16 Nos.	4 KI
2	Acetone	250 Lit	31 Nos.	7.88 KI
3	Chloroform	250 Lit	45 Nos.	11.33 KI
4	DMF	250 Lit	41 Nos.	10.50 KI
5	EDC	250 Lit	9 Nos.	2.33 KI
6	Ethanol	250 Lit	28 Nos.	7 KI
7	Ethyl acetate	250 Lit	37 Nos.	9.33 KI
8	IPA	250 Lit	33 Nos.	8.17 KL
PESO Solution-Tank				
9	MDC	30 KL	1 Nos.	29.28 KL
10	Methanol	15 KL	1 Nos.	13.64 KL
11	Toluene	30 KL	1 Nos.	22.05 KI
Set of Cylinder and Bottle				
1	Hydrogen Gas	60 Kg	6 Nos.	0.35 M ³
2	Ammonia Gas	50 Kg	76 Nos.	3.78 M ³
3	Bromine Solution	3 Kg.	467 Nos.	1.40 MT
4	Chlorine Gas	900 Kg	4 Nos.	2.80 M ³

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	<ul style="list-style-type: none"> Materials have been Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Safety board's displayed on the tank. Effective ventilation must be provided. For accidental contact if you feel unwell, seek medical advice immediately. Handling of Acetone with Safety gloves and protective clothing
CORROSIVE & CHEMICALS	<ul style="list-style-type: none"> Stored out of direct sunlight and convenient height. Separate in storage from incompatible chemicals. Labeling is done.

	<ul style="list-style-type: none"> • Removal of steam fumes and dust. • 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	<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. 	

	<ul style="list-style-type: none"> ➤ Cooling, Chilling and alternate power arrangement have been made on reactor. ➤ Process area and Hydrogen cylinder bank shall be far away as per standards practice. ➤ PRV station with shut off valve, safety valve provision will be made for hydrogenation reaction safety. ➤ Standard Operating procedure shall be followed during operation of Hydrogen Gas charging in to reactor and after completion of reaction Nitrogen purging will be done. ➤ Flame arrestor will be provided on vent line of reactor and it will be extended above the roof level. ➤ Safe Catalyst charging method will be adopted. ➤ SOP will be displayed and operators will be trained for the same. ➤ Static earthing and electric earthing (Double) will be provided. ➤ Jumpers for static earthing on pipeline flanges of flammable chemical will be provided. ➤ Hydrogen gas detector will be installed for early detection of gas leak.
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 concentration of bromine vapor well below PEL. ➤ Work instructions for bromine charging will be displayed in local language/Hindi. ➤ Safety shower and eye-wash fountains will be available nearby handling and charging facility. The location of such item will be inspected and tested at fixed interval to make sure that it is in good condition. ➤ Hypo solution, lime water slurry or soda ash solutions will be available so as to pour them over a liquid bromine spill on the floor. The bromine and neutralizer is then washed to the sump with cold water hose. ➤ Personal Hygiene – the following personal protective equipment will be used. ➤ Chemical safety goggles, face shields, SCBA sets, Aprons, rubber gloves, etc. ➤ Only trained employees handled bromine charging. Training will be given to employees for bromine handling and charging.
Nitration process	Not Applicable
Exothermic Reaction	Not Applicable
Chlorination	<ul style="list-style-type: none"> ➤ Chlorine Emergency Kit will be procured and kept ready at

Process safety measures: (Chlorine Gas)

- process site.
- Chlorine Hood with blower will be provided with scrubbing arrangement.
- SCBA sets will be kept ready at site.
- Safety Shower and eye wash will be provided in process area.
- Chlorine absorption system will be provided. In case of chlorine leakage in chlorine shed it will be suck through blower and it will be scrubbed in Caustic scrubber.
- Emergency siren and wind sock will be provided.
- Tele Communication system and mobile phone will be used in case of emergency situations for communication.
- First Aid Boxes and Occupational health centre will be made at site.
- Emergency organization and team will be prepared as per On site-Off site emergency planning.
- Full body protection suite and other PPEs will be kept ready at site.
- Emergency team will be prepared and trained for scenario base emergency. Like Toxic control team, Fire control team, First aid team, Communication and general administration team, Medical team etc.
- **Evacuate the area in down wind direction**
- For Chlorine evacuate area in down wind direction up to 0.4 km (400 meter) in small spillage and in case of large spillage, evacuate the area in down wind direction 3.5 kms (3500 meters).
- SOP will be prepared for safe charging of Chlorine tonners.
- Tonner handling EOT crane will be installed in Chlorine shed area for safe tonner handling.
- Safety Valve will be provided on chlorine header line and it will be connected to caustic scrubber.
- Safety valve will be provided on vaporizer header and outlet of safety valve connected to scrubber.
- Flow and temperature controllers will be provided on process line.
- Chlorine Gas detectors will be provided in process area.

H-3 Details of Fire Load Calculation

Total Plot Area:	11307.42 Sq. m.
Area utilized for plant activity:	5284 sq. m
Area utilized for Hazardous Chemicals Storage:	2510 sq. m
Number of Floors:	G+2
Water requirement for firefighting in KLD:	100000 Liters
Water storage tank provided for firefighting in KLD:	3,50,000 Liters
Details of Hydrant Pumps:	--
Nearest Fire Station :	Fire Station
Applicability of Off Site Emergency Plan:	--

Comments:

- The project proponent has proposed fire safety plan which includes fire hydrant line, sprinkler system, fire extinguishers, fire suits, covering the project area and

provides for fire water storage tank of 350 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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Number of permanent Employee:	50 Employees
Number of Contractual person/Labour:	10 Employees
Area provided for OHC:	120 Sq. m.
Number of First Aid Boxes:	20
Nearest General Hospital:	--
Name of Antidotes to be store in plant:	Artificial respiration, First Aid, etc.

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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:

Sr. No	Unit	Details	Capital Cost (Rs. In Crores)	Total Recurring Cost (Rs. In Crore/ Annum)
1	Wastewater	Construction cost of ETP [I and II] + ETP Cost + Maintenance cost of ETP [I+II] + Disposal cost of Dahej-CETP and CMEE.	0.8	6.5777
2	Air	Installation Cost of Boiler (2 nos.) + THF (1 no.) & DG Set + 3 Nos. of Scrubbers and stack and stack + Maintenance & Maintenance cost of Flue Gas emission + Process gas Emission	0.35	0.1500
3	Hazardous Management	Membership cost of TSDF + Construction of Hazardous waste storage yard Cost for TSDF disposal + Co-processing Waste + incineration disposal	0.25	1.0843
4	Fire & Safety	Installation cost of fire extinguishers (40 Nos.), Cost of Fire hydrant line, electric siren, Electric Bell, Fire Proximity Suit (5 Nos.), Fire Trolley (10 Nos.) Installation cost of all the	1.52	0.6000

		Safety Equipment's/ Control Measures [i.e. Personal protective Equipment, Ventilation system, PLC based automation system for Hydrogenation, Bromination, Chlorination Distillation and Amination]		
5	Green Belt Development	33% of the plant area will be developed as greenbelt.	0.05	0.0200
6	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.	0.18	0.1000
7	Noise Control	Installation cost of VOC-LDAR Monitoring, Regular monitoring of various environmental parameters will be carried out to check the effectiveness of the control system.	0.55	0.160
8	CER Funds	CER Activity details	---	0.20
Total			3.7	8.892
Comments:				
<p>➤ 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.</p>				

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 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 exothermic reaction vessel safety.

WATER

9. Total water requirement for the project shall not exceed 70 KLD. Unit shall reuse 8.5 KLD of treated industrial effluent within premises. Hence, freshwater requirement shall not exceed 61.5 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 51.89 KLD.
11. Management of Industrial effluent shall be as under:
- ✓ Low COD Effluent generated from process shall be mixed with Domestic, Utilities and Washing section [Total 41.13 KLD] shall be treated into Effluent treatment plant [Primary + Secondary+ Tertiary] and after adequate treatment it shall be send to CETP-Dahej [40.0 KLD] for further treatment and disposal.
 - ✓ High COD Effluent generated from Process [15.26 KLD] shall be treated into Effluent treatment plant [Primary] and after adequate treatment effluent send to Common MEE [15.0 KLD] for further disposal.
 - ✓ Unit shall send waste water to Common MEE and CETP-Dahej 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.
12. 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.
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 and maintain records for the same.
16. Proper logbooks of ETP; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

17. Unit shall not exceed fuel consumption for Steam Boiler (2 Nos.), 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, 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:

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. 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 [3731.44 m2 inside plant premises 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:

31. The project proponent shall carry out the entire activities [Solar Power and Rain water harvesting management Installation of Solar Street Light near Gam Panchayat Area –Installation of Roof Top Solar System for Gam 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.

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

03	SIA/GJ/IND3/245368/2021	M/s. Tejraj Parasmal Balar Plot no. D-2/CH/126, GIDC Estate, Dahej-II, Tal. -Vagra, Dist.-Bharuch, Gujarat-392110.	EC
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Category of the unit: **5 (f)**

Project status: **Expansion**

1) Details of Application:

1.1. Type of application:	EC-Expansion
1.2. Proposal no.	SIA/GJ/IND3/245368/2021
1.3. Category of Project:	5 (f) – B2
1.4. Date of application:	16.12.2021
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:	399 th meeting dated 11.04.2022
1.9. Compliance of Existing EC & CCA	Existing unit has been associating with maintenance, cleaning and testing of ISO tanks. <ul style="list-style-type: none"> • GPCB has been issued a Consolidated Consent and Authorization [CCA] vide order No. W-90833, valid up to 05/10/2022 for maintenance, cleaning and testing of ISO tanks. • The unit has valid CCA order no. AWH-104588, valid up to 08/09/2024 for maintenance, cleaning and testing of ISO tanks.

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	Quantity (MT/Month)
1	Maintenance, cleaning and testing of ISO tanks	600 Nos./Month
2	Intermediates Products	75.0
3	R & D	0.1

DETAILS OF EXISTING PRODUCTS

Sr. No.	Name of Products	CAS Nos.	Quantity [MT/Month]			End use of the products
			Existing	Proposed	Total	
1	Maintenance, cleaning and testing of ISO tanks	---	600 Nos./Month	0.0	600 Nos./Month	-----

DETAILS OF PROPOSED PRODUCTS

Sr. No.	Name of Products	API OR INTERMEDIATE	CAS Nos.	Quantity [MT/Month]			End use of the products
				Existing	Proposed	Total	
Intermediate Products							
2	4'-Bromomethyl-2-cyanobiphenyl (Bromo OTBN)	Intermediate	114772-54-2	0.0	75 TPM [Sr. no. 2 to 50]	75 TPM [Sr. no. 2 to 50]	Valsartan is used to lower blood pressure, treat heart failure, or increase your chance of survival after a heart attack.
3	1-(2-Methoxyphenyl) Piperazine	Intermediate	35386-24-4				Urapidil reduces blood pressure by decreasing peripheral vascular resistance.
4	4-((4-methyl-1-piperazinyl)methyl)benzoyl chloride dihydrochloride	Intermediate	106261-49-8				Imatinib is an oral chemotherapy medication used to treat cancer.
5	1-(4-Methoxyphenyl) Piperazine	Intermediate	38212-30-5				Urapidil reduces blood pressure by decreasing peripheral vascular resistance.
6	1-(4-Methoxyphenyl)-4-(4-Nitrophenyl) Piperazine	Intermediate	74852-61-2				Itraconazole, is an antifungal medication used to treat a number of fungal infections.

7	N-Butyl Bromide/Iso butyl bromide	Intermediate	109-65-9				Miconazole Nitrate is used to treat skin infections such as athlete's foot, jock itch, ringworm, and other fungal skin infections (candidiasis).
8	N-Propyl bromide/Iso Propyl bromide	Intermediate	106-94-5				Albendazole is used to treat certain tapeworm infections (such as neurocysticercosis and hydatid disease).
9	Para Nitro Benzyl Bromide	Intermediate	100-11-8				Cefaclor is used to treat certain infections caused by bacteria, such as pneumonia and other lower respiratory tract (lung) infections; and infections of the skin, ears, throat, tonsils, and urinary tract..
10	2-Bromopropionyl bromide	Intermediate	563-76-8			0.0	Prilocaine is used on normal, unbroken skin or on the outer genital area to prevent pain before certain procedures such as inserting a needle, skin grafts, or skin laser surgery.
11	Acetyl Bromide	Intermediate	506-96-7				Cefuroxime is used to treat a wide variety of bacterial infections.

12	2 ethyl Bromo Butyrate	Intermedi ate	533-68- 6				Levetiracetam is used alone and along with other medications to control partial-onset seizures (seizures that involve only one part of the brain) in adults, children, and infants 1 month of age or older.
13	5 Bromo, 2,4dichloro Pyrimidine	Intermedi ate	36082- 50-5				Ribociclib is used to treat hormone-related breast cancer in women.
14	5-Bromoacetyl Salicylamide	Intermedi ate	73866- 23-6				Labetalol HCl is used to treat high blood pressure (hypertension)
15	2,4 Dichloropyrimide	Intermedi ate	3934- 20-1				Pazopanib is used to treat advanced renal cell carcinoma (RCC, a type of cancer that begins in the cells of the kidneys) in adults. Pazopanib is in a class of medications called kinase inhibitors.
16	4-Hydroxy Benzyl Alcohol	Intermedi ate	623-05- 2				Bisoprolol is used to treat high blood pressure (hypertension) and heart failure.
17	1-Ethyl-3-(3-Dimethylaminopropyl) Carbodimide Hydrochloride	Intermedi ate	25952- 53-8				Atazanavir is used with other HIV medications for infants and children to help control HIV infection.
18	4-Amino Salicylic Acid	Intermedi ate	65-49-6				It is an antibiotic primarily used to treat tuberculosis.
19	3,4-Dimethoxy Benzoic Acid	Intermedi ate	93-07-2				Mebeverin helps with muscle spasms. It can be used to ease painful stomach cramps

20	4-Amino 5-(Ethylsulphonyl)2-Methoxy Benzoic Acid	Intermediate	71675-87-1	0.0			Amisulpiride is an antiemetic and antipsychotic medication used at lower doses intravenously to prevent and treat postoperative nausea and vomiting; and at higher doses orally and intramuscularly to treat schizophrenia and acute psychotic episodes.
21	1-(4-Nitrophenyl) Piperazine	Intermediate	6269-89-2				Brexiprazole is used to treat certain mental/mood disorders (such as schizophrenia, depression).
22	N-Acetyl-4-(4-Hydroxyphenyl) Piperazine	Intermediate	67914-60-7				Ketoconazole is used to treat skin infections such as athlete's foot, jock itch, ringworm.
23	1-(4-Fluorophenyl) Piperazine	Intermediate	2252-63-3				Monatepil is used to treat life-threatening low blood pressure (hypotension) that can occur with certain medical conditions or surgical procedures.
24	N-(4-Hydroxyphenyl) Piperazine	Intermediate	56621-48-8				Ospemifene is used to treat painful sexual intercourse and vaginal dryness in women after menopause.

25	1-(3-Chlorophenyl) Piperazine	Intermediate	6640-24-0				Trazodone is used to treat depression. It may help to improve your mood, appetite, and energy level as well as decrease anxiety and insomnia related to depression.
26	(s)-N,N-dimethyl-3-(naphthalen-1-yloxy)-3(thiophen-2-yl)propan-1-amine	Intermediate	132335-44-5				Duloxetine is used to treat major depressive disorder in adults.
27	(s)-N-methyl-3-(naphthalen-1-yloxy)-3(thiophen-2-yl)propan-1-amine	Intermediate	116539-59-4				Duloxetine is used to treat major depressive disorder in adults.
28	2-bromomethyl-1,3-dioxolane	Intermediate	4360-63-8				Doxofylline is used in the treatment and prevention of chronic obstructive pulmonary disease and asthma.
29	Methyl-5-bromo-2-hydroxy-3-propanoylbenzoate	Intermediate	91099-82-0				Floaxate is used to treat certain bladder/urinary tract symptoms.
30	2-[2-3(S)-3-[2-(7-chloro-2-quinoliny) - ethyl] phenyl]-3-hydroxypropyl] phenyl-2-propanol	Intermediate	142569-70-8				Montelukast is used to prevent wheezing, difficulty breathing, chest tightness
31	3-(3-chloropropyl) - 7,8-dimethoxy-1,3-dihydro-2H-3-benzazepin-2-one	Intermediate	85175-59-3				Ivabradine is used to treat heart failure.
32	1-(3-Chlorophenyl) - 4-(3-Chloropropyl) Piperazine Hydrochloride	Intermediate	52605-52-4			0.0	Trazodone is an antidepressant medicine that works to balance chemicals in the brain.
33	3-chloro-N,N-dimethylpropan-1-amine Hydrochloride	Intermediate	109-54-6				Amitriptyline Hydrochloride is used to treat mental/mood problems such as depression.

34	3-Bromo-1-(3-chloro-phenyl) -propan-1-one	Intermediate	500011-86-9				Bupropion is an antidepressant medication used to treat major depressive disorder and seasonal affective disorder.
35	1-(3-Chloro-propyl)-1,3-dihydro-benzimidazol-2-one	Intermediate	62780-89-6				Domperidone is Medicine that increases the movements or contractions of the stomach and bowel.
36	Cis- bromo benzoate	Intermediate	61397-56-6				Ketoconazole is used to treat skin infections such as athlete's foot, jock itch, ringworm, and certain kinds of dandruff.
37	Iminostilbene Carbonyl chloride	Intermediate	33948-22-0				Carbamazepine is used to treat epilepsy. It is occasionally Used to treat bipolar disorder when other medicines have not worked.
38	1-(Mercaptomethyl)-cyclopropane acetic acid	Intermediate	162515-68-6				Montelukast is used to prevent wheezing, difficulty breathing, chest tightness
39	2-n-Butyl-3(4-Hydroxy Benzoyl) Benzofuran	Intermediate	52490-15-0				Amiodarone Hydrochloride is an antiarrhythmic medication used to treat and prevent a number of types of irregular heartbeats.
40	Dimethyl aminopropyl chloride hydrochloride	Intermediate	1951-25-3			0.0	Amiodarone Hydrochloride is an antiarrhythmic medication used to treat and prevent a number of types of irregular heartbeats.

41	2,4-Dihydro-4-[4-[4-(4-Hydroxyphenyl)-1-Piperazinyl]Phenyl]-2-(1-Methylpropyl)-3h-1,2,4-Triazol-3-One	Intermediate	252964-68-4				Homidium bromide is an antifungal medication that is used in adults to treat infections caused by fungus.
42	Cis-[2-(2,4-Dichlorophenyl)-2-(1h-Imidazol-1-Ylmethyl)-1,3-Dioxolan-4-Yl] Methyl P-Tolylsulfonate	Intermediate	134071-44-6				Ketoconazole is used to treat skin infections such as athlete's foot, jock itch, ringworm, and certain kinds of dandruff.
43	3-Bromo-1,3,4,5-tetrahydro-2H-1-benzazepin-2-one	Intermediate	86499-96-9				Benzapril is used alone or in combination with other medications to treat high blood pressure.
44	2 Butynoic Acid	Intermediate	590-93-2				Acalabrutinib is being Developed for the treatment of multiple B-cell blood cancers including CLL, mantle cell lymphoma (MCL), diffuse large B-cell lymphoma.
45	(4-(4-Phenylbutoxy)benzoic acid)	Intermediate	30131-16-9				Pranlukast is indicated for the prophylactic treatment of chronic bronchial asthma in paediatric and adult patients.
46	2-(2-Ethoxyphenoxy) Ethyl Bromide	Intermediate	3259-03-8				Tamsulosin is used by men to treat the symptoms of an enlarged prostate (benign prostatic hyperplasia-BPH)
47	1-(2-Bromo Phenyl)Piperazine	Intermediate	1011-13-8				Brexiprazole is Used To Treat Certain Mental/Mood Disorders (Such As Schizophrenia, Depression).

48	1-(3-Trifluoro Phenyl)Piperazine	Intermedi ate	15532- 75-9	0.0			Flibanserin is Used To Treat Women Who Have Not Gone Through Menopause Who Have Low Sexual Desire And Are Concerned About It.
49	N-(3,4-Methylenedioxy Phenyl) Piperazine	Intermedi ate	32231- 06-4				Aripiprazole is Used To Treat Certain Mental/Mood Disorders (Such as Bipolar Disorder, Schizophrenia, Tourette's Syndrome, And Irritability Associated With Autistic Disorder).
50	1-[2-(2-Hydroxyethoxy)ethyl] Piperazine	Intermedi ate	13349- 82-1				Quetiapine is used To Treat Certain Mental/ Mood Conditions (As Schizophrenia, Bipolar Disorder, Sudden Episodes Of Mania/Depression Associated With Bipolar Disorder).
	R & D		--	--	0.1 TPM	0.1 TPM	
Total Production for Proposed Product				75.1 TPM			

- 3) The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27thMarch, 2020.
- 4) The proposal was considered in the SEAC video conference meeting dated 11.04.2022.
- 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) Existing unit has been associating with maintenance, cleaning, and testing of ISO tanks.
- 8) GPCB has been issued a Consolidated Consent and Authorization [CCA] vide order No. W-90833, valid up to 05/10/2022 for maintenance, cleaning, and testing of ISO tanks.
- 9) The unit has valid CCA order no. AWH-104588, valid up to 08/09/2024 for maintenance, cleaning and

testing of ISO tanks.

10) Committee asked to submit the following:

- ✓ Revised layout plan with mentioning existing plant and proposed API plant with color coding, raw material and finished good storage area with considering its type of hazard and compatibility chart, area adequacy for proposed API plant in existing washing facility for various storage tank etc. and land break up for it.
- ✓ Submit provisional membership of CETP-Dahej for expansion project i.e., for 25 KLD effluent disposal.
- ✓ Revised CMEE of M/s. BEIL certificate with mentioning booked quantity and spare capacity of CMEE in KL/day as per CCA of your facility.
- ✓ Later on PP submitted above mentioned details

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

12) 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

13) 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.

14) 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>Existing</th> <th>Proposed</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.0 Crores</td> <td style="text-align: center;">5.0 Crores</td> <td style="text-align: center;">6.0 Crores</td> </tr> </tbody> </table>			Existing	Proposed	Total	1.0 Crores	5.0 Crores	6.0 Crores																									
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Break-up of proposed project Cost:																																	
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Miscellaneous	--	--	--																														
Total	1.0	5.0	6.0																														
A-2	Details of CER -																																

PP shall carry out CER activities as below:

- ✓ Installation of 1.8 KV Roof Top Solar System @1 Lakh for Gam Panchayat office-
Jolva

B Land / Plot ownership details:

Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/ANK/1182 on dated 09/02/2011 in favor of Tejraj Parasmal Balar.

B-1 Plot area

Existing	Proposed	Total
9840.23 Sq. m.	0.0 Sq. m.	9840.23 Sq. m.

B-2 Area adequacy

Area Adequacy table:

Sr. No.	Area	Ground Floor	First Floor	Second Floor	Sq. M.	%
1	Existing Area	300	300	300	900	3.0
2	Production Area: - Intermediate	255	255	255	765	2.6
3	R. M. Storage: - Drum	135	0	135		
	R.M. Storage: - Bag	95	95	50		
	Production Area- Intermediate Products	230	95	185	510	2.3
4	R. M. Storage: - Toxic Material	200	0	0	200	2.0
5	R. M. Storage-Corrosive Material	100	0	0	100	1.0
6	F.G. Storage	155	155	0	310	1.6
7	Utility Area	105	0	0	105	1.1
8	ETP Area	185	0	0	185	
	Solid Waste storage Area	55	0	0	55	
	Haz Waste storage area	90	0	0	90	
	Total ETP Area	330	0	0	330	3.4
9	Fresh Solvent Storage Area	85	0	0	85	0.9
10	Recover Solvent Storage Area	138	0	0	138	1.4
11	Tank Farm storage area For Acids	135	0	0	135	
	Tank Farm storage area for PESO Material	170	0	0	170	
	Tank Farm storage area	305	0	0	305	3.1
12	Green Belt Area	3247.28	0	0	3247	33.0
13	OH centre	100	0	0		
	QC Lab Area	0	100	0		
	Office Area	0	0	100		
	Total Admin Area	100	100	100	300	1.0
14	Parking Area	50	0	0	50	0.5

15	Open Area	4239.95	0	0	4240	43.1
	TOTAL	9840.23				100

- Production capacity: 75 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 Solution				
1	Sulphuric Acid	3 KL	1.0 Nos.	1.75 KL
2	Hydrochloric Acid	20 KL	1.0 Nos.	16.2 KL
PESO Solution				
1	MDC	250 Lit	26 Nos.	6.7 KL
2	IPA	250 Lit	21 Nos.	5.25 KL
3	Toluene	15 KL	1.0 Nos.	13.0 KL
4	Methanol	15 KL	1.0 Nos.	12.0 KL
5	Ethyl Acetate	3 KL	1.0 Nos.	2.6 KL
6	Acetic acid	8 KL	1.0 Nos.	6.3 KL
7	Dimethyl amine	8 KL	1.0 Nos.	7.2 KL
Cylinder/ Bottles				
8	Hydrogen	60 Kg	40 Nos.	2.4 KL
9	Bromine	3 Kg	466 Nos.	1.4 MT

- Area required for ETP 250 m².
- 80 m² area provided for the Boiler House.
- 1100 m² (G+2) area will be provided for the manufacturing of the proposed products.

Sr. No	Particulars	Criteria for Storage	Inventory Required (MT)(KL)	Area Required m ²	Area Proposed m ²
1	Finished product storage area (1 week inventory)	Bags/Drums: 700 Nos. 0.5 m ² / 1 Bag	17.5	116.5	300
2	Raw Material Storage area Drum (1 week inventory) (G+2)	Drums: 125 Nos. (0.5 m ² / 1 Drum)	25.0	62.5	200
3	Raw Material Storage area Bags (1 week inventory) (G+2)	Bags: 300 Nos. (0.5 m ² / 1 Bag)	15	60	100
4	Solvent storage area (PESO) (Storage at a time) (1 week inventory)	Drums: 372 Nos. (0.5 m ² / 1 Drum)	93	186	430
			150.5 MT	425m²	1030 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	1500	1747	3247
% of total area	15.24	17.7	33.0

Comments:

The condition shall be given that -

- The PP shall develop green belt (3247.44 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
60	0	60

-

D WATER

D-1 Source of Water Supply

- GIDC Water supply.

Comments:

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

D-2 Water consumption (KLD)

-

Category	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD

(D) Domestic	3.00	3.00	6.00
(E) Gardening	2.00	2.50	4.50
(F) Industrial			
Process	0	13.37	13.37
Washing	10	6.00	16.00
Boiler	0	11.00	11.00
Cooling	0	8.62	8.62
Others	0	3.51	3.51
Industrial Total	10.0	42.50	52.5
Grand Total (A+B+C)	15.0	48.00	63.0

-
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	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD
(C) Domestic	1.5	2.5	4.0
(D) Industrial			
Process	0.0	20.55	20.55
Washing	10.0	6.00	16.00
Boiler	0.0	3.00	3.00
Cooling	0.0	2.45	2.45
Others	0.0	0.00	0.00
Industrial Total	10.00	32.00	42.00
Total [1 + 2 +3]	11.50	34.50	46.00

-
Comments:

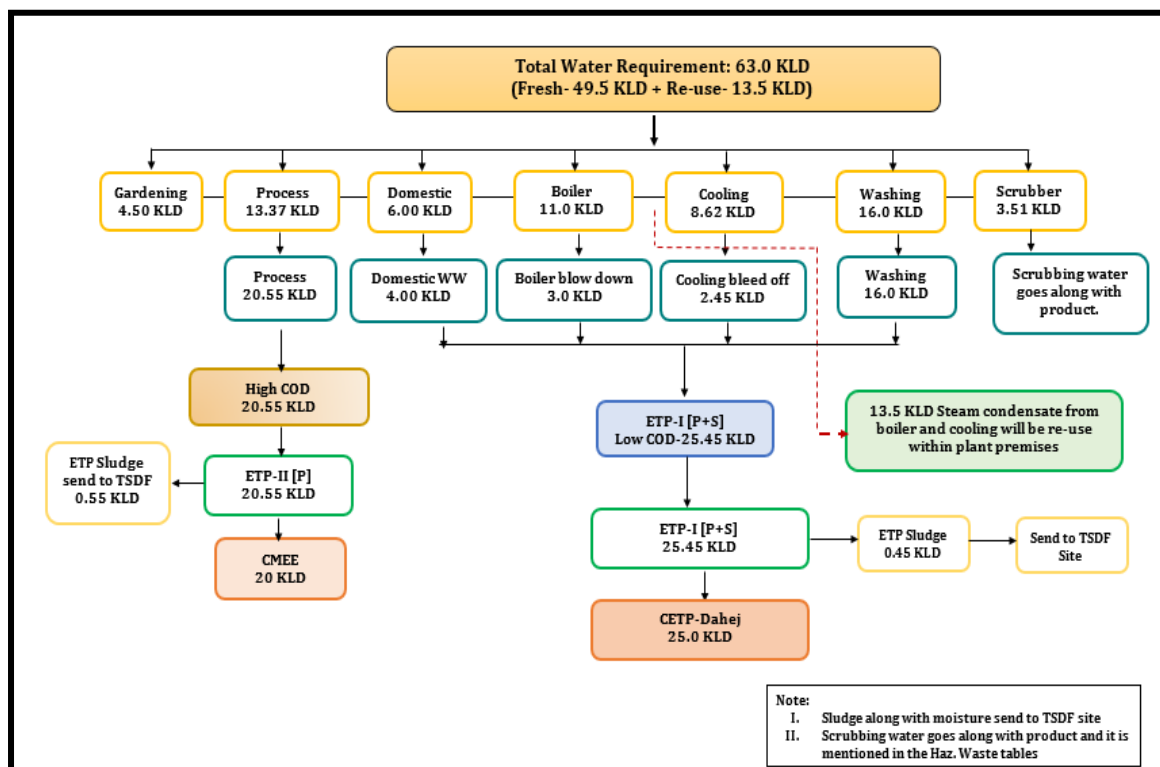
- The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same.

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

4.0 KLD Domestic Wastewater will be treated in ETP.

Comments:

<p>➤ Domestic wastewater generation shall not exceed 4.0 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.</p>			
D-5a	Break-up of waste water disposal & facility (For Industrial)		
	Sr. no.	Quantity KLD	Facility
	1	20.55 KLD	High COD effluent generated from process section shall be treated in ETP-I. Treated effluent shall be sent to CMEE-BEIL for further treatment.
	2	21.45 KLD	Low COD effluent generated from utility and washing section shall be mixed with domestic wastewater. After that, effluent shall be collected and treated in ETP-II [Primary + Secondary treatment]. After treated in ETP-II, effluent shall be sent to CETP-Dahej for further treatment and disposal.
	Total	42.0 KLD	
	<p>Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)</p> <p>Membership certificate of M/s: BEIL-Ankleshwar vide no. Ref. BEIL/ANK/2022 dated 25.10.2021</p> <p>Membership certificate of Dahej-CETP vide no. Ref. GIDC/BRH/DEE/DRG/1016 dated 14.02.2022</p>		
D-5b	Simplified water balance diagram		

**D-5c Summary**

Summary of water requirement	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD	Remarks
Total water requirement for the project (A)	15.0	48.0	63.0	
Quantity to be recycled (B)	0.0	13.5	13.5	
Total fresh water requirement (C)	15.0	34.5	49.5	
Ensure Total water requirement = Fresh water + Recycled water i.e. A = B + C				

Comments:

- a. Total water requirement after expansion shall not exceed 63 KLD. Unit shall reuse 13.5 KLD of treated industrial effluent within premises. Hence, freshwater requirement shall not exceed 49.5 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
- b. Management of Industrial effluent shall be as under:
 - ✓ Low COD Effluent generated from Utilities and Washing section shall be mixed with Domestic, hence Total 25.45 KLD shall be treated into Effluent

treatment plant [Primary + Secondary] and after adequate treatment it shall be send to CETP-Dahej [25.0 KLD] for further treatment and disposal.

- ✓ High COD Effluent generated from Process [20.55 KLD] shall be treated into Effluent treatment plant [Primary] and after adequate treatment effluent send to Common MEE [20.0 KLD] for further disposal.
- ✓ Unit shall send waste water to Common MEE and CETP-Dahej 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.

c. Unit shall provide ETP with adequate capacity.

d. 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: 225 KVA

E-2 Flue gas emission details

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Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
Existing						
There is no flue gas emission from existing products.						
After Expansion						
1.	Boiler [2 TPH] [1 Nos.]	30	Natural Gas and/or Briquette / Agro waste	2000 Nm ³ / hr or 3.25 MT/ day	PM SO ₂ NO _x	Multi Cyclone Separator/Bag filter + Water scrubber or Adequate Stack Height
2.	Thermic Fluid Heater [4 Lac. Kcal/Hrs.]	30	Natural Gas and/or Briquette / Agro waste	650 Nm ³ / hr or 1.6 MT/ day		Multi Cyclone Separator /Bag filter + Water scrubber or Adequate Stack Height

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E-3 Process gas

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Sr. no.	Specific Source of emission (Name of the Product & Process)	Type of emissions i.e. Air Pollutants (SO ₂ , HCl, Cl etc.)	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)
After Expansion				
1.	Reaction Vessels-I [From Product No. 15,19,22,23,29,30,38,4	HCl	22	Two stage scrubber [Water Scrubber followed by Alkali Scrubber]

	2,43,45]					
2.	Reaction Vessels-II [SO ₂ :-4] [HBr :- 2,10,12,28,29,30,31,32 ,33,34,35, 36,40,41,42,43,44,45]	HBr , SO ₂	22	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.	Product	Solvent	Boiling Point	Fresh Qty	Recover Qty	% Rec.
				MT/Month	MT/Month	
2	4'-Bromomethyl-2-cyanobiphenyl (Bromo OTBN)	DMF	153 °C	8.5	8.2	96.00
3	1-(2-Methoxyphenyl) Piperazine	Toluene	110.6 °C	26.9	25.8	96.00
4	4-((4-methyl-1-piperazinyl)methyl)benzoyl chloride dihydrochloride	chloroform	61.2 °C	3.5	3.4	96.00
		Thionyl chloride	74.6 °C	3.8	3.6	96.00
		DMF	153 °C	2.0	1.9	96.00
5	1-(4-Methoxyphenyl) Piperazine	Toluene	110.6 °C	26.9	25.8	96.00

6	1-(4-Methoxyphenyl)-4-(4-Nitrophenyl) Piperazine	DMF	153 °C	2.5	2.4	96.00
		Acetone	56 °C	3.0	2.9	96.00
9	Para Nitro Benzyl Bromide	MDC	39.6 °C	2.0	1.9	96.00
		IPA	82.5 °C	1.5	1.4	96.00
11	Acetyl Bromide	Acetic acid	118 °C	5.0	4.8	96.00
13	5 Bromo, 2,4dichloro Pyrimidine	POCl3	105.8 °C	6.6	6.3	96.00
14	5-Bromoacetyl Salicylamide	Ethylene Dichloride	83.47 °C	4.0	3.8	96.00
15	2,4 Dichloropyrimide	POCl 3	105.8 °C	10.1	9.7	96.00
		Chloroform	61.2 °C	5.0	4.8	96.00
16	4-Hydroxy Benzyl Alcohol	Methanol	64.7 °C	4.5	4.3	95.00
17	1-(3- Dimethylamono propyl)-3 Ethyl Carbondimide Hydrochloride	Chloroform	61.2 °C	9.8	9.3	95.00
19	3,4-Dimethoxy Benzoic Acid	Dichloro Methane (MDC)	39.6 °C	22.0	21.1	96.00
20	4-Amino 5-(Ethylsulphonyl)2-Methoxy Benzoic Acid	Methanol	64.7 °C	12.0	11.5	96.00
21	1-(4-Nitrophenyl) Piperazine	Toluene	110.6 °C	24.1	23.1	96.00
22	N-Acetyl-4-(4-Hydroxyphenyl) Piperazine	Methanol	64.7 °C	3.0	2.9	96.67
23	1-(4-Fluorophenyl) Piperazine	IPA	82.5 °C	3.0	2.9	97.33
24	N-(4-Hydroxyphenyl) Piperazine	Toluene	110.6 °C	30.0	28.8	96.00
25	1-(3-Chlorophenyl) Piperazine	Toluene	110.6 °C	2.0	1.9	96.00
26	(s)-N,N-dimethyl-3-(naphthalen-1-yloxy)-3(thiophen-2-yl)propan-1-amine	Isoprpyl alcohol	82.5 °C	2.0	1.9	96.00
		Methanol	64.7 °C	2.0	1.9	97.00
		Acetone	56 °C	1.2	1.2	96.00
		Ethyl acetate	77.1 °C	1.5	1.4	96.00
		Methylene chloride	39.6 °C	1.5	1.4	96.00
		Cyclohexane	80.75 °C	1.2	1.2	96.00
		Tolune	110.6 °C	1.0	1.0	96.00
		Hexane	69 °C	1.3	1.2	96.00
		Dimethyl formamide	153 °C	0.9	0.9	96.00

27	(s)-N-methyl-3-(naphthalen-1-yloxy)-3(thiophen-2-yl)propan-1-amine	Toluene	110.6 °C	2.5	2.4	96.00
28	2-bromomethyl-1,3-dioxolane	MDC	39.6 °C	20.0	19.4	97.00
		Methanol	64.7 °C	30.0	29.1	97.00
29	Methyl-5-bromo-2-hydroxy-3-propanoylbenzoate	EDC	83.47 °C	3.0	2.9	96.00
30	2-[2-3(S)-3-[2-(7-chloro-2-quinoliny) -ethyl] phenyl]-3-hydroxypropyl] phenyl-2-propanol	Tetra Hydro furan	66 °C	20.0	19.2	96.00
		DMF	153 °C	16.0	15.4	96.25
31	3-(3-chloropropyl)-7,8-dimethoxy-1,3-dihydro-2H-3-benzazepin-2-one	Methanol	64.7 °C	2.0	1.9	96.00
32	1-(3-Chlorophenyl)-4-(3-Chloropropyl) Piperazine Hydrochloride	Toluene	110.6 °C	2.0	1.9	96.00
33	3-chloro-N,N-dimethylpropan-1-amine Hydrochloride	Toluene	110.6 °C	16.0	15.4	96.00
34	3-Bromo-1-(3-chlorophenyl) -propan-1-one	MDC	39.6 °C	12.0	11.5	96.00
35	1-(3-Chloro-propyl)-1,3-dihydro-benzoimidazol-2-one	Methanol	64.7 °C	18.0	17.5	97.00
36	Cis- bromo benzoate	Toluene	110.6 °C	16.7	16.1	96.50
		n-Butanol	117.7 °C	10.0	9.8	97.50
37	Iminostilbene Carbonyl chloride	Methanol	64.7 °C	20.0	19.2	96.00
38	1-(Mercaptomethyl)-cyclopropane acetic acid	Dimethyl Formamide	153 °C	14.3	13.6	95.00
39	2-n-Butyl-3(4-Hydroxy Benzoyl) Benzofuran	Methanol	64.7 °C	10.8	10.4	96.50
40	Dimethyl aminopropyl chloride hydrochloride	Toluene	110.6 °C	6.2	6.0	96.00
41	2,4-Dihydro-4-[4-[4-(4-Hydroxyphenyl)-1-Piperazinyl] Phenyl]-2-(1-Methylpropyl)-3h-1,2,4-Triazol-3-One	DMF	153 °C	3.8	3.6	96.00
		2-bromobutane	91 °C	5.3	5.0	96.00
42	Cis-[2-(2,4-Dichlorophenyl)-2-(1h-Imidazol-1-Ylmethyl)-1,3-Dioxolan-4-Yl] Methyl	DMF	153 °C	14.0	13.4	96.00
		Toluene	110.6 °C	6.0	5.8	96.00
		MDC	39.6 °C	10.0	9.6	96.00

	P-Tolylsulfonate					
43	3-Bromo-1,3,4,5-tetrahydro-2H-1-benzazepin-2-one	Methanol	64.7 °C	30.0	28.8	96.00
		Toluene	110.6 °C	39.0	37.2	95.27
45	(4-(4-Phenylbutoxy) benzoic acid)	Benzene	80.1 °C	18.3	17.6	96.00
		MDC	39.6 °C	16.5	15.7	95.56
		Toluene	110.6 °C	5.5	5.3	96.00
		Acetone	56 °C	7.3	7.0	96.00
46	2 – (2 – Ethoxy phenoxy) Ethyl Bromide	IPA	82.5 °C	10.0	9.6	96.00
47	1-(2-Bromo Phenyl) Piperazine	Toluene	110.6 °C	19.8	19.1	96.00
48	1-(3-Trifluoro Phenyl) Piperazine	Toluene	110.6 °C	26.3	25.3	96.00
49	N-(3,4-Methylenedioxy Phenyl) Piperazine	Toluene	110.6 °C	23.0	22.1	96.00
50	1-[2-(2-Hydroxyethoxy) ethyl] Piperazine	Toluene	110.6 °C	37.5	36.4	97.00
		Piperazine	146 °C	30.0	29.1	97.00
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:

1. Process Controls
2. Emissions control program
3. Selection of appropriate method for leak detection
4. Scheduling and checklist for Leak Detection
5. Methods for rectification of identified leaks
6. Frequency of Monitoring
7. Record keeping of LDAR Program

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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

S r. N o.	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/lines contaminated with hazardous chemicals/wastes	Raw Material and Packaging	33.1	---	150	150	Collection, Storage, Transportation, Decontamination, reuse or send back to supplier, and sold to authorize end users registered under rule-9.
2	Used Oil	From Machinery	5.1	0.00	0.1	0.1	Collection, Storage, Transportation and sold to authorized Recyclers.
3	ETP Sludge	ETP	35.3	8.0	324	332	Collection, Storage, Transportation and sent to TSDF site-BEIL. (Through GPS mounted vehicle)
4	Process Waste	[From product no 2,26,28] Maximum generation From Product 2-bromometh	28.1	0.0	91	91	

		yl-1,3-dioxolane					
5	Hyflow	[From product no 27] Maximum generation from (s)-N-methyl-3-(naphthalen-1-yloxy)-3(thiophen-2-yl)propan-1-amine	28.1	0.0	10	10	
6	Distillation Residue	[From product no 2 to 17,20 to 43,45 to 50] Maximum generation from Iminostilbene Carbonyl chloride	20.3	0.0	45	45	Collection, Storage, transportation and sent for co-processing in cement industries disposal at CHWIF. (Through GPS mounted vehicle)
7	Spent Carbon	[From Product no 19, 27] Maximum generation from (s)-N-methyl-3-(naphthalen-1-yloxy)-3(thiophen-2-yl)propan-1-amine	28.3	0.0	19	19	Collection, Storage, transportation and sent for co-processing in cement industries disposal at CHWIF. (Through GPS mounted vehicle)
8	Spent catalyst	[From product no 35,36,50] Maximum generation from 1-[2-(2-Hydroxyethoxy)ethyl] Piperazine	28.2	0.0	23	23	
9	Sulfuric Acid [H ₂ SO ₄] Sol. [60-70%]	[From Product no 12] Maximum generation from 2 ethyl Bromo Butyrate	SCH-II- / B(15)	0.0	91	91	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.

1 0	HCl Sol. [20-25%]	[Scrubber & from product no 15,19,22,23, 29,30,38,42, 43,45] Maximum generation from N-Acetyl-4-(4-Hydroxyphenyl) Piperazine acid methyl ester	SCH-II- / B(15)	0.0	812	812	Collection, Storage, and reused in manufacturing process and/or Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
1 1	HBr Solution	From Product no 37,38,46 Maximum generation from 1-(Mercaptoethyl)-cyclopropane acetic acid	--	0.0	495	495	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
1 2	Sodium Bromide [NaBr] Sol. [30-40%]	From Product no 2,10,12,28 to 36, 40 to 45] Maximum generation from 2-Bromopropionyl bromide	--	0.0	1875	1875	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
1 3	Sodium Bisulfite Sol. [NaHSO ₃ Sol.] [30-35%]	[Scrubber & From product no 4] Maximum generation from 4-((4-methyl-1-piperazinyl)methyl)benzoyl chloride dihydrochloride	SCH-I/ 28.1	0.0	81	81	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.

14	Spent Solvent	From manufacturing process	20.2	0.0	1369	1369	Collection, Storage, Recovery and Recycle for manufacturing of product.
15	Off-Specification Products	Products	28.4	0.0	15.0	15.0	Collection, Storage, transportation and sent for co-processing in cement industries disposal at CHWIF-Ankleshwar. (Through GPS mounted vehicle)
16	Sodium Hypochlorite Solution	Scrubber	--	0.0	122	122	Collection, Storage, and quantity of sodium hypochlorite will be used in ETP as oxidizing agent.
<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 TSD 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. <p>Comments:</p>							
H	SAFETY details						
H-1	Details regarding storage of Hazardous chemicals						
-							
-							
	S. N.	Name of chemical	Quantity (Nos.)	Total (Nos.)	Total Qty. to be store		
	Non-PESO Solution						

1	Sulphuric Acid	3 KL	1.0 Nos.	1.75 KL
2	Hydrochloric Acid	20 KL	1.0 Nos.	16.2 KL
PESO Solution				
1	MDC	250 Lit	26 Nos.	6.7 KL
2	IPA	250 Lit	21 Nos.	5.25 KL
3	Toluene	15 KL	1.0 Nos.	13.0 KL
4	Methanol	15 KL	1.0 Nos.	12.0 KL
5	Ethyl Acetate	3 KL	1.0 Nos.	2.6 KL
6	Acetic acid	8 KL	1.0 Nos.	6.3 KL
7	Dimethyl amine	8 KL	1.0 Nos.	7.2 KL
Cylinder/ Bottles				
8	Hydrogen	60 Kg	40 Nos.	2.4 KL
9	Bromine	3 Kg	466 Nos.	1.4 MT

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	<ul style="list-style-type: none"> Materials have been Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Safety board's displayed on the tank. Effective ventilation must be provided. For accidental contact if you feel unwell, seek medical advice immediately. Handling of Acetone with Safety gloves and protective clothing
CORROSIVE & CHEMICALS	<ul style="list-style-type: none"> Stored out of direct sunlight and convenient height. Separate in storage from incompatible chemicals. Labeling is done. Removal of steam fumes and dust. 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.

- **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 process:-A	<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. ➤ Hydrogen gas detector will be installed for early detection of gas leak.
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.

	<ul style="list-style-type: none"> ➤ Excess bromine will be neutralize or discharged by adding Sodium Bisulfite. ➤ Make sure the absorber unit (scrubber) is working and capable of handling vented bromine fumes. ➤ Structure of bromine bottle area will be periodically inspected to ensure stability. ➤ Personnel employed with bromine handling are made aware of potential hazards of bromine and of appropriate first-aid measure. ➤ Exhaust hood connected with alkali scrubber and ventilation system will be available. Exhaust hood has been provided to maintain to concentration of bromine vapor well below PEL. ➤ Work instructions for bromine charging will be displayed in local language/Hindi. ➤ Safety shower and eye-wash fountains will be available nearby handling and charging facility. The location of such item will be inspected and tested at fixed interval to make sure that it is in good condition. ➤ Hypo solution, lime water slurry or soda ash solutions will be available so as to pour them over a liquid bromine spill on the floor. The bromine and neutralizer is then washed to the sump with cold water hose. ➤ Personal Hygiene – the following personal protective equipment will be used. ➤ Chemical safety goggles, face shields, SCBA sets, Aprons, rubber gloves, etc. ➤ Only trained employees handled bromine charging. Training will be given to employees for bromine handling and charging.
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:	9840.23 M2
Area utilized for plant activity:	2435 M2
Area utilized for Hazardous Chemicals Storage:	1955.0 M2
Number of Floors:	G+2
Water requirement for firefighting in KLD:	100.0 KL
Water storage tank provided for firefighting in KLD:	200.0 KL
Details of Hydrant Pumps:	30
Nearest Fire Station:	3-4 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:				
Shall be obtained after receipt of EC.				
H-5 Details of Occupational Health Centre (OHC):				
-				
Number of permanent Employee:		30		
Number of Contractual person/Labour:		40		
Area provided for OHC:		50 M ²		
Number of First Aid Boxes:		10		
Nearest General Hospital:		4-5 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 Crores)	Total Recurring Cost (Rs. In Crore/ Annum)
1	Wastewater	Construction cost of ETP [I and II] + ETP Cost + Maintenance cost of ETP [I+II] + Disposal cost of Dahej-CETP and CMEE.	0.65	3.28
2	Air	Installation Cost of Boiler (1 nos.) + THF (1 no.) + 2 Nos. of Scrubbers and stack and stack + Maintenance & Maintenance cost of Flue Gas emission + Process gas Emission	0.4	0.20
3	Hazardous Management	Membership cost of TSDF + Construction of Hazardous waste storage yard Cost for TSDF disposal + Co-processing Waste + incineration disposal	0.28	0.94
4	Fire & Safety	Installation cost of fire extinguishers (40 Nos.), Cost of Fire hydrant line, electric siren, Electric Bell, Fire Proximity Suit (5	0.78	0.38

		Nos.), Fire Trolley (10 Nos.) Installation cost of all the Safety Equipment's/ Control Measures [i.e. Personal protective Equipment, Ventilation system, PLC based automation system for Hydrogenation, Bromination, Chlorination Distillation and Amination]		
5	Green Belt Development	33% of the plant area will be developed as greenbelt.	0.04	0.02
6	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.	0.23	0.18
7	Noise Control	Installation cost of VOC-LDAR Monitoring, Regular monitoring of various environmental parameters will be carried out to check the effectiveness of the control system.	0.39	0.22
8	CER Funds	CER Activity details	---	0.06
Total			2.77	5.28

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.

15) 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.

WATER

10. Total water requirement for the project shall not exceed 63 KLD. Unit shall reuse 13.5 KLD of treated industrial effluent within premises. Hence, freshwater requirement shall not exceed 49.5 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 42 KLD.
12. Management of Industrial effluent shall be as under:
- ✓ Low COD Effluent generated from Utilities and Washing section shall be mixed with Domestic, [Total 25.45 KLD] shall be treated into Effluent treatment plant [Primary + Secondary] and after adequate treatment it shall be send to CETP-Dahej [25.0 KLD] for further treatment and disposal.
 - ✓ High COD Effluent generated from Process [20.55 KLD] shall be treated into Effluent treatment plant [Primary] and after adequate treatment effluent send to Common MEE [20.0 KLD] for further disposal.
13. Domestic wastewater generation shall not exceed 4.0 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 send waste water to Common MEE and CETP-Dahej 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.
15. Unit shall provide ETP with adequate capacity.
16. The PP shall ensure to dispose off Wastewater to the Common Facilities having valid CTO of GPCB.
17. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
18. 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:

19. Unit shall not exceed fuel consumption for Steam Boiler, TFH and D G Set as per the point no. E-2 as mentioned above.
20. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
21. Unit shall provide adequate APCM with process gas generation sources as the point no. **E-3** as mentioned above.
22. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
- Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive

emission during vehicular movement.

- Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
- A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.

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

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

- ✓ 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.

25. Solvent management shall be carried out as follows:

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

26. 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:

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

28. 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.

29. 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.
30. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
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 [3247.44 m² inside plant premises 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 [Installation of 1.8 KV Roof Top Solar System @1 Lakh for Gam 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.
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

04	SIA/GJ/IND3/247549/2021	M/s. Keshav Remedies Pvt. Ltd. Plot No - C/26/1, Saykha Industrial Estate, Vill. - Saykha, Tal. - Vagra, Dist. - Bharuch	EC
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Category of the unit: **5 (f)**

Project status: **New**

1) Details of Application:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	SIA/GJ/IND3/247549/2021
1.3. Category of Project:	5 (f) – B2
1.4. Date of application:	25.12.2021
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 Ozone Enviro Tech
1.8. SEAC Meeting No. and Date:	399 th meeting dated 11.04.2022
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 Product	CAS NO.	Quantity (MT/Month)	End Use	Remarks
1	Telmisartan	144701-48-4	50.0	Antihypertensive	Unit is proposed to mfg either individual or
	4-Methyl -6-(1-methyl-1H-benzoimidazol-2-yl)-2-propyl-1H-benzo imidazole	152628-02-9		Intermediate of Telmisartan	

	4-Bromomethyl)biphenyl-2-carboxylic acid methyl ester	114772-38-2			total production of (Product No.- 1 to 20) shall not exceed 50.0 MT/Month.
	Mehtyl -4-[[2n-propyl-4-methyl-6-(1-methylbenzimidazole-2-yl)-benzimidazole-1-yl]methyl] biphenyl carboxylate	528560-93-2			
2	Pregabalin	148553-50-8		Fibromyalgia	
	(±)-3-(Carbamoy Methyl)-5-Methyl Hexanoic Acid	181289-33-8		Intermediate of Prgabalin	
3	Diclofenac Sodium	15307-79-6		Anti Flammatory	
	(2,6-Dichloro Phenylamine)	15307-93-4		Intermediate of Diclofenac Sodium	
	(N-Chloroacetyl, 2,6-Dichloro Phenylamine)	15308-01-7			
	(1-(2,6 -Dichlorophenyl) 2-Indolinone)	15362-40-0			
4	Diclofenac Potassium	15307-81-0		NSAID (Non-Steroidal anti-inflammatory drug)	
5	Aceclofenac Sodium	89796-99-6		Anti Flammatory	
	Tert Buyl Chloroacetate	107-59-5		Intermediate of Aceclofenac	
6	Fluconazole	86386-73-4		Anti allergies	
	1-H- 1,2,4 Triazole	288-88-0		Intermediates of Fluconazole	
	DFTA(2,4-Difluoro-2-(1h- 1,2,4-Triazole-1-Yl)Acetophenone)	86404-63-9			
	(1-[2-(2,4- difluorophenyl)-2,3-epoxypropyl]-1H-1,2,4-Trizole)	86386-76-7			
7	Sodium Methoxide Solution (30%)	124-41-4		Intermediate of Sulfamethoxazole	
8	Sodium Methoxide Powder	124-41-4		Intermediate of Sulfamethoxazole	
9	Ketosulfone	221615-75-4		Intermediate of Etoricoxib	
10	Cetirizine Dihydrochloride	83881-52-1		Antihistamine	
	4-Chlorbenzhydrol chloride	119-56-2		Intermediate of Cetrizine Dihydrochloride	
	1-[(4-chlorophenyl)(phenyl) (Methyl)piperazine]	439858-21-6			
	2-(4-[(4-chlorophenyl)(phenyl) (Methyl) piperazine-yl)Ethanol	164726-80-1			
	2[2-[4-[(4- chlorophenyl)(phenyl) (Methyl) piperazine-yl)ethoxy]acetic acid	130018-77-8			
11	Levocetirizine Dihydrochloride	130018-77-8		Antihistamine	
	1-[(4-chlorophenyl) phenyl-methyl]-4-(toluene-4-sulfonyl)-piperazine	163837-56-7			
	1-(4-[(4-chloorphenyl)phenyl-methyl]- piperazine-1-yl)-ethanol	164726-80-1			
12	2-Butyl 4-Chloro 5-Formyl Imidazole (BCFI)	83857-96-9		Intermediate of Losartan	
13	Bronopol	52-51-7		Antimicrobial	
14	Oxcarbazepine	28721-07-5		Anticonvulsants	

	10-Methoxy Carbezapine	28721-09-7		Intermediate of Oxcarbazepine	
15	Glimipride	93479-97-1		To treat type 2 diabetes	
	(3-Ethyl-4-methyl-2-oxo-3-pyrrolin-1(N—2-phenyl ethyl)- 2,5-dihydro carboxamido]	247098-18-6		Intermediate of Glimipride	
	4-[2-[(3-Ethyl-4-methyl-2-oxo-3-pyrrolin-1-yl) carboxamido] ethyl]benzene sulfonamide	119018-29-0			
16	Rabeprazole Sodium	117976-89-3		Antiulcer	
	2-[[[4-(3-methoxypropoxy)-3-methyl-2-pyridinyl] methyl] thio]-1H-benzimidazole	117977-21-6		Intermediates of Rabeprazole Sodium	
	2-[[4-(3-methoxypropoxy)-3-methyl-pyridin-2-yl]methylsulfinyl]-1H-benzoimidazole	117976-90-6			
17	Clopidogrel Bisulphate	120202-66-6		Antiplatelet	
	Methyl (+)-alpha-(2-thienylethylamino)(2-chlorophenyl)acetate	141109-19-5		Intermediate of Clopidogrel Bisulphate	
18	Dextromethorphan	125-71-3		Cough suppressant	
	3-Methoxy-N-Mathylmorphinan	165673-74-5		Intermediates of Dextromethorphan	
19	Chlorpheniramine Maleate	113-92-8		α -adrenergic blocking agents	
	N-N-Dimethyl Amino Ethyl Chloride	4584-46-7		Intermediates of Chlorpheniramine Maleate	
20	Hydroxy Chloroquine Sulphate	747-36-4		Antimalarial agent	
	Hydroxy Chloroquine Base	118-42-3		Intermediate of Hydroxy Chloroquine Sulphate	
21	R & D	--	0.1		
Total			50.1		

- 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 11.04.2022.
- 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 provide bag filter as an APCM of Boiler and Thermic Fluid Heater.
 - ✓ To revise the CER activity.

- 8) Later on PP submitted following details.
- ✓ Unit shall be provide the Bag filter with Multicyclone separator and water scrubber as an APCM of Boiler and Thermic Fluid Heater and submitted revise Flue gas Emission Table with APCM.
 - ✓ Submitted revise CER Activity.
- 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. 5.75 CR</td> </tr> </table>			Total Project	Rs. 5.75 CR										
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BREAK-UP OF PROPOSED PROJECT COST:														
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Land Cost	0.65													
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Total	5.75													
A-2	Details of CER -													
PP shall carry out CER activities as below:														
<ul style="list-style-type: none"> ✓ Provided Solar roof top system (6.5 KW) at primary school of Cholad village ✓ Provided Solar roof top system (5 KW each x 2 No = 10 KW) at primary school of Saranar village & Vansi Village 														
B	Land / Plot ownership details:													
Plot ownership is already name of Jyotsnaben M. Patel, Director of M/s. Keshav Remedies Pvt. Ltd. vide Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/DEE(Road)/BRH/403 dated 27/12/2019.														
B-1	Plot area													

Total Plot area																																									
3066.71 Sq. m.																																									
-																																									
B-2	Area adequacy																																								
<p>Area Adequacy table:</p> <table border="1"> <thead> <tr> <th>Sr. No.</th> <th>Storage Details</th> <th>Total Area (m²)</th> <th>Used Area (m²)</th> <th>Working Area (m²)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Raw Material Storage Area</td> <td>270</td> <td>112.59</td> <td>157.41</td> </tr> <tr> <td>2</td> <td>Finish Product Storage Area</td> <td>65</td> <td>25.02</td> <td>39.98</td> </tr> <tr> <td>3</td> <td>Haz. Waste Storage Area</td> <td>270</td> <td>112.59</td> <td>157.41</td> </tr> <tr> <td>4</td> <td>Tank farm Area</td> <td>96</td> <td>--</td> <td>--</td> </tr> <tr> <td>5</td> <td>Hydrogen Storage Area</td> <td>28</td> <td>--</td> <td>--</td> </tr> <tr> <td>6</td> <td>Gas storage Area</td> <td>60</td> <td>--</td> <td>--</td> </tr> <tr> <td colspan="2">Total</td> <td>789</td> <td></td> <td></td> </tr> </tbody> </table> <p>Total Used Storage Capacity Available = Area dedicated for (RM + Finish Product + HW Storage Area) * 2.4 (MT/m²) = (112.59+25.02+112.59)*2.4 = 250.2*2.4 Total Used Storage Capacity= 600 MT</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 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>		Sr. No.	Storage Details	Total Area (m ²)	Used Area (m ²)	Working Area (m ²)	1	Raw Material Storage Area	270	112.59	157.41	2	Finish Product Storage Area	65	25.02	39.98	3	Haz. Waste Storage Area	270	112.59	157.41	4	Tank farm Area	96	--	--	5	Hydrogen Storage Area	28	--	--	6	Gas storage Area	60	--	--	Total		789		
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-																											
D	WATER																										
D-1	Source of Water Supply																										
<p>➤ Saykha 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)																										
-																											
<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Category</th> <th>Quantity KLD</th> </tr> </thead> <tbody> <tr> <td>(G) Domestic</td> <td>3.0</td> </tr> <tr> <td>(H) Gardening</td> <td>4.0</td> </tr> <tr> <td>(I) Industrial</td> <td></td> </tr> <tr> <td> Process</td> <td>6.2</td> </tr> <tr> <td> Boiler</td> <td>14.0</td> </tr> <tr> <td> Cooling</td> <td>3.0</td> </tr> <tr> <td> Scrubber</td> <td>3.2</td> </tr> <tr> <td> Washing</td> <td>2.0</td> </tr> <tr> <td> Other Scrubber</td> <td>1.0</td> </tr> <tr> <td> R&D</td> <td>0.2</td> </tr> <tr> <td>Industrial Total</td> <td>29.6</td> </tr> <tr> <td>Total (A + B + C)</td> <td>36.6</td> </tr> </tbody> </table>		Category	Quantity KLD	(G) Domestic	3.0	(H) Gardening	4.0	(I) Industrial		Process	6.2	Boiler	14.0	Cooling	3.0	Scrubber	3.2	Washing	2.0	Other Scrubber	1.0	R&D	0.2	Industrial Total	29.6	Total (A + B + C)	36.6
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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)																										
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	KLD
(E) Domestic	2.0
(F) Industrial	
Process	8.9
Boiler	1.4
Cooling	0.3
Scrubber	4.7
Washing	2.0
Other Scrubber	1.0
R&D	0.2
Total Industrial waste water	18.5
Total [A + B]	20.5

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)

2.0 KLD Domestic Waste Water will be treated in ETP & treated wastewater will be sent to CETP.

Comments:

- Domestic wastewater generation shall not exceed 2.0 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)

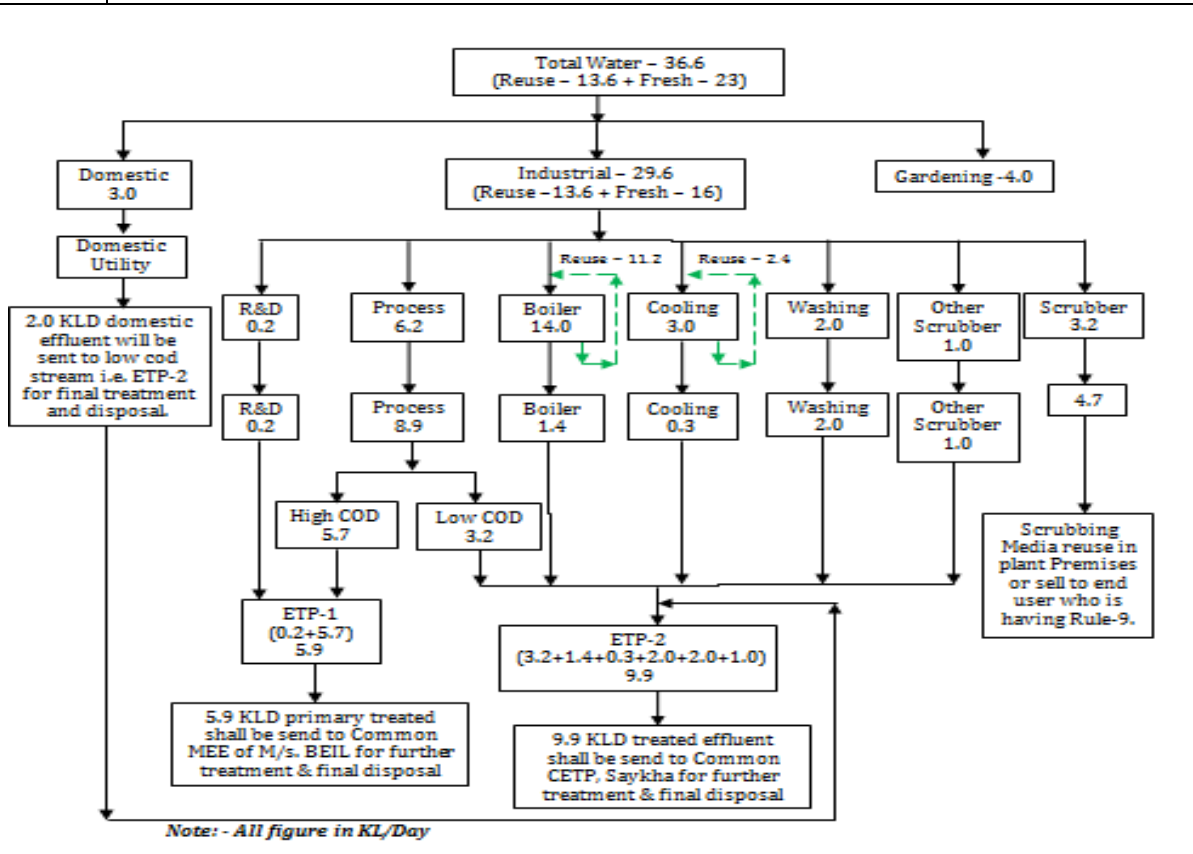
Sr. no.	Quantity KLD	Facility
1	5.9	5.9 KLD effluent from process and R&D shall be treated into primary ETP and primary treated effluent send to common MEE for the final treatment and disposal.
2	7.9	7.9 KLD effluent from utility, washing & Other scrubber shall be treated into full ETP and treated effluent will be send to Common CETP, Saykha for further treatment and disposal.
3	4.7	Scrubbing media reuse in plant premises & Sell to end user who is having Rule-9 Permission.
Total	18.5	

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

CMEE Membership certificate of M/s:BEIL-Dahej vide no. Ref.

BEIL/ANK/2022 dated 22.01.2022
 Saykha CETP provisional membership letter vide ref. no. –
 GIDC/BRH/DEE/DRG/2032 dated 21.02.2022

D-5b Simplified water balance diagram



D-5c Summary

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	36.6	
Quantity to be recycled (B)	13.6	11.2 KL boiler Condensate & 2.4 KL Cooling recirculation
Total fresh water requirement (C)	23	
Ensure Total water requirement = Recycled water + Fresh water i.e. A = B + C (36.6 = 13.6 + 23)		

Comments:

1. Total water requirement for the project shall not exceed 36.6 KLD. Unit shall reuse 13.6 KLD of (11.2 KL boiler Condensate & 2.4 KL Cooling recirculation) effluents

directly within premises. Hence, fresh water requirement shall not exceed 23 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.

2. Management of Industrial effluent shall be as under:

- ✓ 5.9 KLD effluent from process and R&D shall be treated into primary ETP and primary treated effluent send to common MEE for the final treatment and disposal.
- ✓ 9.9 KLD effluent from utility, washing, other scrubber & domestic effluent shall be treated into full ETP and treated effluent will be send to Common CETP, Saykha for further treatment and disposal.
- ✓ 4.7 KLD Scrubbing media reuse in plant premises & Sell to end user who is having Rule-9 Permission.

3. Unit shall provide ETP with adequate capacity.

4. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

E | **AIR**

E-1 | Power (Electricity) requirement: 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)
1	Boiler (Cap. – 2.0 MT/hr)	30 M	Briquette of Bio Coal	6 MT/Day	PM SO ₂ NO _x	Multicyclone Separator with Bag and Water Scrubber
2	Thermic Fluid Heater (Cap. - 2 Lakh Kcal/Hr)		Briquette of Bio Coal	3 MT/Day		Multicyclone Separator with Bag and Water Scrubber
3	D.G. Sets (Stand by) (Cap. – 250 KVA)	18 M	HSD	25 Liter/hr		Adequate Stack Height

E-3 | **Process gas**

Sr. No.	Stack attached to	Stack Height	Air Pollution Control System	Parameter
---------	-------------------	--------------	------------------------------	-----------

1	Process Vent -1 (Chlorination/Sulphonation) (Cetirizine Dihydrochloride)	11 M	Two stage Scrubber (Water + Alkali)	HCl SO ₂
2	Process Vent -2 (Bromination) (Bronopol & Dextromethorphan)	11 M	Two stage Scrubber (Water + Alkali)	Br ₂ HBr
3	Process Vent -3 (Chlorpheniramine Maleate)	11 M	Two stage water Scrubber	NH ₃
-				
E-4	Fugitive emission details with its mitigation measures.			
Following measures will be adopted to prevent and control fugitive emissions...				
<ul style="list-style-type: none"> ➤ Solid raw material charging will be done through closed system to avoid fugitive emissions. ➤ Airborne dust at all transfers operations/ points will be controlled either by spraying water or providing enclosures. ➤ Periodic monitoring of work area will be carried out to check the fugitive emission. ➤ 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 / bad filter. ➤ 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				
Solvent Name	Consumption	Generation	Recovery %	Loss %
	MT/Month	MT/Month		
Methanol	277.80	269.16	96.89	3.11
Acetone	82.03	79.45	96.85	3.15
Dimethyl Formamide	14.00	13.56	96.86	3.14
Isopropyl Alcohol	135.50	131.20	96.83	3.17

Ethyl Acetate	25.97	25.16	96.88	3.12						
Methylene Dichloride	44.75	43.37	96.92	3.08						
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"> ➤ Regular maintenance of valves, pumps, flanges, joints 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 reactors with proper maintenance of pressure and temperature. ➤ To eliminate chances of leakages from glands of pumps, mechanical seal will be provided at all solvent pumps. ➤ 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. ➤ All the raw materials will be pneumatically transfer to the reactor. ➤ Emphasis will be given to solvent management/solvent loss prevention. ➤ Control by having proper scrubbing system. ➤ Condenser to trap VOC. ➤ Proper gland packing will be maintained for pumps and valves and to the extent possible pumps with mechanical seal. 										
-										
F-3 LDAR proposed:										
<ul style="list-style-type: none"> ➤ Company will be installed double mechanical seal and MSW Gaskets in solvent pipelines to prevent leakage from flanges ➤ Company will be reduced the joints and valves in pipelines. ➤ All the rotating equipment like pumps will be installed with double Mechanical Seals to arrest any sort of emissions. ➤ Flanges will be sealed so less losses will be there. ➤ Down the Temperature of Cooling tower to 5 0C ➤ Chilled Brine at -10 0C will be used to trap any traces of Solvent which is slipped from Secondary condenser. ➤ Closed loop system. ➤ For continue vapor travelling 100mm of Hg (slight vacuum) will be applied on secondary condenser. 										
-										
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										
<table border="1"> <thead> <tr> <th>Sr. no.</th> <th>Type/Name of Hazardous</th> <th>Specific Source of generation</th> <th>Category & Schedule as per HW</th> <th>Quantity (MT/ Annum)</th> <th>Management of HW</th> </tr> </thead> </table>					Sr. no.	Type/Name of Hazardous	Specific Source of generation	Category & Schedule as per HW	Quantity (MT/ Annum)	Management of HW
Sr. no.	Type/Name of Hazardous	Specific Source of generation	Category & Schedule as per HW	Quantity (MT/ Annum)	Management of HW					

	waste	(Name of the Activity, Product etc.)	Rules.		
1	ETP Sludge	ETP	SCH-I/35.3	60	Collection, Storage, Transportation and Disposal at common TSDf site.
2	Discarded Drums/Bags / Liners	Raw Materials/ Products	SCH-I/33.1	22	Collection, Storage, Transportation, Decontamination & Sale to GPCB approved vendors/ reuse /send back to supplier.
3	Used/ Spent Oil	Machineries /Utility	SCH-I/5.1	1.2	Collection, Storage, Disposal by reuse in plant machinery as lubricant or transportation & Sale to GPCB registered re-processor.
4	Distillation Residue	Distillation	SCH-I/20.3	82	Collection, Storage, Transportation and sent to co-processing or common incineration facility.
5	Spent Solvent	Process	SCH-I/28.6	3265	Collections, Storage, distillation and reuse in plant premises.
6	Spent Carbon	Process	SCH-I/28.3	11	Collection, Storage, Transportation and sent to co-processing or common incineration facility.
7	Organic Residue	Process	SCH-I/28.1	276	Collection, Storage, Transportation and sent to co-processing or common incineration facility.
8	Inorganic residue	Process	SCH-I/28.1	88	Collection, Storage, Transportation and Disposal at common TSDf Site .
9	Spent Catalyst	Process	SCH-I/28.1	4	Collection, Storage, reuse in the plant premises or Transportation and send to regenerator under Rule-9.
10	Aluminum chloride	Process (Diclofenac Sodium)	SCH-I/28.1	369	Collection, Storage, Transportation and Sell to end user who is

					having Rule-9 Permission.
11	Spent Sulphuric acid	Process (Levocetirizine Dihydrochloride)	SCH-I/28.1	399	Collection, Storage, Transportation and Sell to end user who is having Rule-9 Permission.
12	Dilute HCl (28%)	Scrubber	SCH- II / B 15	621	Collection, Storage and reuse in plant premises. (Requirement of HCL in Pregabalin – 1362 MT/Year).
13	Sodium bisulphite (30%)	Scrubber	SCH- II / B 15	433	Collection, Storage, Transportation and Sell to end user who is having Rule-9 Permission.
14	Sodium Bromide (25-30%)	Scrubber	SCH- II / B 15	45	Collection, Storage, Transportation and Sell to end user who is having Rule-9 Permission.
15	Liq. Ammonia (25%)	Scrubber	SCH- II / B 15	326	Collection, Storage and reuse in plant premises. (Requirement of Liq. Glimipride in 412.56 MT/Year).
16	Dilute HBr (28%)	Scrubber	SCH- II / B 15	269	Collection, Storage, Transportation and Sell to end user who is having Rule-9 Permission.
17	Off Specification Products	From mfg. Process (Batch failure)	SCH-I/28.4	15	Collection, Storage, Transportation and sent to co-processing or common incineration facility.
R&D					
18	ETP Sludge	ETP	35.3	3	Collection, Storage, Transportation & disposal in TSDF.
19	Residue from Distillation/Organic Process Waste	R&D	28.1	4	Collection, Storage, Transportation and sent to co-processing or common incineration facility.
20	Discarded Drum	Raw Materials/Products	33.1	20	Collection, Storage, Transportation, Decontamination & Sale to GPCB approved vendors/

					reuse /send back to supplier.
21	Discarded Bags / Liner	Raw Materials/Products	33.1	0.2	Collection, Storage, Transportation, Decontamination & Sale to GPCB approved vendors.
22	Off Specification Products	R&D	28.4	1	Collection, Storage, Transportation and sent to co-processing or common incineration facility.

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

✓ Fly Ash generation will be 227 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**

-

Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
1	Hydrochloric Acid	10 KL	1	Corrosive /Toxic
2	Sulphuric acid	10 KL	1	Corrosive /Toxic

Storage of Hazardous chemicals in Tanks

- 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 (National Fire Protection Association) label will be provided.
- Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory mask etc. will be provided to operator.
- Neutralizing agent will be kept ready for tackle any emergency spillage.
- Safety shower, eye wash with quenching unit will be provided in acid storage area.

- Material will be handled in close condition in pipe line.
- Dyke wall will be provided to all storage tanks, collection pit with valve provision.
- Double drain valve will provided.
- Level gauge will be provided on all storage tanks.
- Safety permit for loading unloading of hazardous material will be prepared and implemented.
- TREM CARD will be provided to all transporters and will be trained for transportation Emergency of Hazardous chemicals.
- Fire hydrant system with jockey pump as per TAC norms will be installed

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

- FLP type light fittings will be provided.
- Proper ventilation will be provided in Godown.
- 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.

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	<ul style="list-style-type: none"> • Separate Isolated Storage Area is constructed as per explosive department requirement and separation distance will be maintained, accordingly. • Workers and Operators handling such materials will be trained for the hazards (fire/explosion, health, and chemical reactivity) associated with them. • Lightning arrestor will be provided on the top of tallest structure. • NFPA label (hazard identification) capacity and content will be displayed on respective barrels. • Every time it will be ensured that barrels are cleaned and no chemicals are as a residue to avoid mixing and causing explosion or any mishap • While decanting chemicals proper earthing arrangement will be ensured to avoid static charge • Good housekeeping will be maintained. • Work Instructions shall be prepared and followed. • Proper ventilation will be provided in storage room. • Proper label and identification board /stickers will be provided in the storage area. • Area shall be marked as “Hazardous Chemical Storage”, “No Smoking”, “Hot work Restricted”. No cell phones
CORROSIVE & CHEMICALS	<ul style="list-style-type: none"> • Preventing or minimizing contact between corrosive substances and skin, mucous membranes and eyes.

	<ul style="list-style-type: none"> • Corrosive substances should not be allowed to come in contact with materials that may react. • All the containers, pipes, apparatus, installations and structures used for the manufacture, storage, transport or use of these substances may be protected by suitable coatings, impervious to and unaffected by corrosives. • All containers or receptacles should be clearly labelled to indicate their contents and should bear the danger symbol for corrosives. • Adequate ventilation and exhaust arrangement whether general or local, should be provided whenever corrosive toxic gases or dust are present. • Personal protective devices shall be used • First aid treatment facilities shall be provided and all concerned should be instructed to follow safe practices such as (a) Prolonged washing with water (b) Removing contaminated clothing (c) Seeking immediate medical help. • Safety showers and eye washers is provided. 		
TOXIC CHEMICALS	<ul style="list-style-type: none"> • Ventilation must be sufficient to prevent accumulation of vapor pockets. All fan switches should be outside the storage area. • Self-breathing apparatus, gas mask and 'emergency kits' should be located at strategic points under working condition and to be easily accessible in the event of emergency. • Appropriate minimum safety distances as stipulated in the above mentioned rules have to be maintained from buildings or group of buildings or adjacent property. 		
REACTIVE CHEMICALS	<ul style="list-style-type: none"> • Store minimum quantities • Segregate chemicals, e.g. from water, air, incompatible chemicals, sources of heat, ignition sources • Spillage control; bund, spray, blanket, containment. Drain to collection pit • Ensure appropriate levels of security, hazard warning notices, fences, patrols. Control access including vehicles • Appropriate gas/vapour/fume/pressure venting, e.g. flame arrestors, scrubbers, absorbers, stacks • Ensure adequate natural or forced general ventilation of the storage area Provide adequate, safe lighting • Label (name and number); identify loading/unloading/transfer couplings • Provide appropriate fire protection (sprinkler, dry powder, gas) • Ensure adequate access for both normal and emergency purposes with alternative routes 		
<p><u>Safety details....</u></p> <p>➤ Applicability of PESO: Yes. Unit will obtain PESO License for storage of chemicals as per storage requirement.</p> <p><u>Comments:</u></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.

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

Type of Process	Safety measures including Automation
Hydrogenation	<ul style="list-style-type: none"> ➤ Installed DCS System ➤ 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. ➤ Dumpers for static earthing on pipeline flanges of flammable chemical will be provided.
Bromination	<ul style="list-style-type: none"> ➤ Bromine handling areas will be clearly marked and restricted to qualified, trained personnel only. ➤ Bromine process area will be done with good 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.

	<ul style="list-style-type: none"> ➤ Personal Protective Equipments are to be made compulsory when handling Bromine 																		
Ammonia	<ul style="list-style-type: none"> ➤ Valve, pipeline will be checked and maintain, in good condition. ➤ All Gaskets will be checked periodically & if new one replaces found defective. ➤ Joints will be checked regularly to found any Leakage. ➤ ADEQUATE PPE will be kept to handle the Hazard. ➤ ISI Portable fire extinguisher & Hydrant line will be provided as per TAC norms. ➤ Sufficient amount of sand/soil are kept to control any spillage. ➤ Flame proof fitting provided. ➤ Eye washer cum shower will be provided near tank-farm area. ➤ Spark arrester will be installed on all vehicles inside the premises. ➤ SBA set, Canister mask and airline mask will be provided. ➤ Earthing & bonding on tanks will be provided. ➤ Vent line dipped in water will be provided. 																		
-																			
H-3	Details of Fire Load Calculation																		
<table border="1"> <tr> <td>Total Plot Area:</td> <td>3066.71 m²</td> </tr> <tr> <td>Area utilized for plant activity:</td> <td>220 m²</td> </tr> <tr> <td>Area utilized for Hazardous Chemicals Storage:</td> <td>766 m²</td> </tr> <tr> <td>Number of Floors:</td> <td>G+2</td> </tr> <tr> <td>Water requirement for firefighting in KLD:</td> <td>5.46 KL/hr</td> </tr> <tr> <td>Water storage tank provided for firefighting in KLD:</td> <td>200 KL</td> </tr> <tr> <td>Details of Hydrant Pumps:</td> <td>One Fire pump, one diesel driven pump and one Jockey pump are being implemented.</td> </tr> <tr> <td>Nearest Fire Station:</td> <td>Dahej GIDC – 23.16 Km</td> </tr> <tr> <td>Applicability of Off Site Emergency Plan:</td> <td>N. A</td> </tr> </table>		Total Plot Area:	3066.71 m ²	Area utilized for plant activity:	220 m ²	Area utilized for Hazardous Chemicals Storage:	766 m ²	Number of Floors:	G+2	Water requirement for firefighting in KLD:	5.46 KL/hr	Water storage tank provided for firefighting in KLD:	200 KL	Details of Hydrant Pumps:	One Fire pump, one diesel driven pump and one Jockey pump are being implemented.	Nearest Fire Station:	Dahej GIDC – 23.16 Km	Applicability of Off Site Emergency Plan:	N. A
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Applicability of Off Site Emergency Plan:	N. A																		
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:																		
Shall be obtained after receipt of EC.																			
H-5	Details of Occupational Health Centre (OHC):																		
-																			
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	KM
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 Crores)	Total Recurring Cost (Rs. In Crores)
1	Waste Water	Installation of Full ETP, Primary ETP & Membership/NOC of CMEE	0.265	1.827
2	Air	APCM, Scrubbers & Stacks & LDAR System etc.	0.2850	0.034
3	Hazardous Management	Membership/NOC of TSDF, CHWIF & Cons. of Haz. Waste Storage Area.	0.06	3.22875
4	Fire & Safety	PPE Kit & Fire Fighting Equipments & Fire Hydrant lines etc.	0.30	0.065
5	AWH Monitoring	--	0.02	0.01
6.	Green Belt Development	Green belt development	0.0225	0.024
7.	Occupational Health	First Aid Kits, medical examiners and expenses etc.	0.020	0.0235
8.	CER	As per CER Activities	0.115	--
Total			1.0875	2.56025

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 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 rupture disc, as well as auto dump or auto quench/, suppress system for hydrogenation vessel safety

WATER

9. Total water requirement for the project shall not exceed 36.6 KLD. Unit shall reuse 13.6 KLD of (11.2 KL boiler Condensate & 2.4 KL Cooling recirculation) effluent directly within premises. Hence, fresh water requirement shall not exceed 23 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 18.5 KLD.
11. Management of Industrial effluent shall be as under:
 - ✓ 5.9 KLD effluent from process and R&D shall be treated into primary ETP and primary treated effluent send to common MEE for the final treatment and disposal.
 - ✓ 9.9 KLD effluent (7.9 KL from utility, washing, other scrubber & 2.0 KL domestic effluent shall be treated into full ETP and treated effluent shall be send to Common CETP, Saykha for further treatment and disposal.
 - ✓ 4.7 KLD Scrubbing media reuse in plant premises & Sell to end user who is having Rule-9 Permission.
12. 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. Treated waste water shall be sent to CETP only after complying with the inlet norms of CETP prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
14. Domestic wastewater generation shall not exceed 2.0 KL/Day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
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.
17. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
18. 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:

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

20. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
21. Unit shall provide adequate APCM with process gas generation sources as the point no. **E-3** as mentioned above.
22. The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.
- Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.
 - Air borne dust shall be controlled with water sprinklers at suitable locations in the plant.
 - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
23. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
24. For control of fugitive emission, VOCs, following steps shall be followed :
- ✓ 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.
25. Solvent management shall be carried out as follows:
- ✓ Measures shall be taken to reduce the process vapors emissions as far as possible. Use of toxic solvents shall be minimum. All venting equipment shall have vapour recovery system
 - ✓ Reactor shall be connected to adequate chilling system to condensate solvent vapors and reduce solvent losses.
 - ✓ Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
 - ✓ The condensers shall be provided with sufficient HTA and residence time so as to achieve maximum solvent recovery.
 - ✓ Solvents shall be stored in a separate space specified with all safety measures.
 - ✓ Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
 - ✓ Solvent storage and handling area shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.
26. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, HCl, HBr, Br₂, 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:

27. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
28. 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.
29. 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.
30. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
31. Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.
32. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

33. The PP shall develop green belt (1012 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:

34. The project proponent shall carry out the entire activities [Funds towards Renewable energy activities (Solar roof top system installation at primary 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.
35. 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:

36. 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.

37. 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 shall not mean that appointing a key person shall exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.
38. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
39. 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.
40. 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.
41. 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.
42. 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/IND3/247864/2021	M/s. Mahakali Fine Chem Plot no. T/23, Saykha Industrial Estate at GIDC, Saykha, Taluka: Vagra, District: Bharuch, Gujarat.	EC
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Category of the unit: **5 (f)**

Project status: **New**

1) Details of Application:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	SIA/ GJ/ IND3/ 247864/ 2021
1.3. Category of Project:	5 (f) – B2
1.4. Date of application:	27.12.2021
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. ENPRO Enviro Tech and Engineers Private Limited

1.8. SEAC Meeting No. and Date:	399 th meeting dated 11.04.2022
1.9. Compliance of Existing EC & CCA	Not Applicable as the project is new.

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

Sr. No.	Name of Product	API or API Intermediate	CAS No.	Quantity MT/Month	End use of product
Group A					
1	Mono Chloro Acetic Acid	API Intermediate	79-11-8	300	Glycine is used for treating schizophrenia, stroke, benign prostatic hyperplasia (BPH), and some rare inherited metabolic disorders
2	Chloro Acetyl Chloride	API Intermediate	79-04-9		Glycine is used for treating schizophrenia, stroke, benign prostatic hyperplasia (BPH), and some rare inherited metabolic disorders
3	Acetyl Chloride	API Intermediate	75-36-5		Bronchodilators
4	Tri Chloro Acetyl Chloride	API Intermediate	76-02-8		Diarrhea intestinal infection
5	Benzo Trichloride	API Intermediate	98-07-7	50	Diclofenac Sodium /Used to relieve pain, reduce swelling and ease inflammation
6	Ortho Chloro Benzoic Acid	API Intermediate	118-91-2		Mesalamine is used to treat and prevent mild to moderately active ulcerative colitis
7	Benzyl Chloride	API Intermediate	100-44-7		Fexofenadine is used to relieve the allergy symptoms
8	Cyclo Pentyl Bromide	Intermediate	137-43-9		To treat breast and prostate cancer.
9	N-Hexyl Bromide	Intermediate	111-25-1		Anti fungal
10	Bromo Benzene	API Intermediate	108-86-1	25	Apixaban is used help prevent strokes or blood clots
11	Methyl Chloroacetate	API Intermediate	96-34-4		Typhoid, conjunctivitis
12	1,3-Dibromo 5,5-Dimethyl Hydantoin	API Intermediate	77-48-5		Irbesartan/for the treatment of

					Hypertension
13	2,6 Di Chloro Phenol	API Intermediate	124-41-4		Diclofenac Sodium /Used to relieve pain, reduce swelling and ease inflammation
14	CIS-BROMO BENZOATE	API Intermediate	61397-56-6		used to treat fungal infections
15	2-BROMO VERATRYL BROMIDE	API Intermediate	53207-00-4		Pinaverium bromide is an antispasmodic. It directly relaxes the colonic smooth muscle cells and stops sudden muscle contractions
	Group B				
16	3,5,6-Trichloro Salicylic acid	API Intermediate	40932-60-3		treatment and control of fascioliasis in ruminants
17	2-N-Propyl-4-Methyl-6-(1-Methylbenzimidazole-2-yl) Benzimidazole	API Intermediate	152628-02-9		to treat high blood pressure
18	2-Methyl-5-Nitro Imidazole	Intermediate	696-23-1		It's used in the treatment of conditions such as bacterial vaginosis and pelvic inflammatory disease
19	3-Chloro-1,2-benzothiazole	Intermediate	7716-66-7	25	CNS active agent Anti depressant
20	(1,2,4 Triazole [4,3, -a] Pyridine-3(2H)one	intermediate	6969-71-7		Trazodone is an antidepressant
21	1,3-benzenediamine, 4-methyl-N3-[4-(3-pyridinyl)]-2-pyrimidinyl.amine	API Intermediate	152460-10-1		Imatinib /to treat certain types of cancer
22	Bromoacetaldehyde Dimethyl Acetal	API Intermediate	7252-83-7		used to treat chistosoma and liver fluke
23	4-chloro-3-nitrobenzoic acid	API Intermediate	96-99-1		Used for treating worms
24	6-chloro 2-hexanone	API Intermediate	10226-30-9	50	Pentoxifylline improves the flow of blood through blood vessels. It is used to reduce leg pain caused by poor blood circulation.
25	CYCLOHEXANE CARBONYL CHLORIDE	API Intermediate	2719-27-9		Prazoquantel used as an anti-worm medication
26	2- chloro thiophene	API Intermediate	96-43-5		Apixaban is used help prevent strokes or blood clots

27	2-CHLOROPHENOTHIAZINE	API Intermediate	92-39-7	<p>Phenothiazines are used to treat serious mental and emotional disorders, including schizophrenia and other psychotic disorders</p> <p>used to treat high blood pressure and heart failure.</p> <p>Imatinib mesylate is approved to treat: Acute lymphoblastic leukemia in adults and children</p> <p>Closetel is a salicylanilide which is used for the treatment and control of adult and immature flukes, nematodes and larval stages of some arthropods</p> <p>Zidovudine is a nucleoside analogue and reverse transcriptase inhibitor used in combination with other agents in the therapy and prophylaxis of the human immunodeficiency virus (HIV) infection and the acquired immunodeficiency syndrome (AIDS).</p> <p>Used to prevent and treat HIV</p> <p>Fluconazole oral tablet is used to prevent and treat candidiasis, a fungal infection. It's also used to treat meningitis (infection of the brain or spinal cord, or both) Itraconazole is used to treat fungal infections of the toenails. Itraconazole</p>
28	N-Valeroyl Chloride	Intermediate	638-29-9	
29	4-Cyano Benzyl Chloride	Intermediate	874-86-2	
30	p-Chloro Benzyl Cyanide	Intermediate	140-53-4	
31	Trityl Chloride	API Intermediate	76-83-5	
32	Chloro Acetaldehyde Dimethyl Acetal	Intermediate	97-97-2	
33	1-H-1,2,4 Triazole	API Intermediate	288-88-0	

				oral solution (liquid) is used to treat yeast infections of the mouth and throat or of Fluconazole oral tablet is used to prevent and treat candidiasis, a fungal infection. It's also used to treat meningitis (infection of the brain or spinal cord, or both). Itraconazole is used to treat fungal infections of the toenails. Itraconazole oral solution (liquid) is used to treat yeast infections of the mouth and throat or of the esophagus.
34	2 METHYL BENZIMIDAZOLE	API Intermediate	615-15-6	treatment of topical mycosis
35	2-amino-5-chloropyridine	API Intermediate	1072-98-6	is used to treat insomnia
36	Thiophene-2-Acetyl (T2AC)	API Intermediate	39098-97-0	Duloxetine used to treat depression and anxiety
37	N,N'-Carbonyldiimidazole	API Intermediate	530-62-1	Tazarotene is used in the treatment of psoriasis and acne
38	2-mercaptobenzimidazole	API Intermediate	583-39-1	Anti-Ulcer Drug
39	2-n-Butyl Benzofuran	API Intermediate	4265-27-4	Anti-arrhythmic
40	2-((2-methyl-5-nitro-1H-imidazol-1-yl)ethyl(thio)ethan-1-ol	Api intermediate	16156-94-8	Tinidazole is used to treat infections caused by protozoa
41	N-2-Butyl-4-chloro-5-formyl Imidazole	Intermediate	83857-96-9	Antihypertensive
42	Cytosine	API Intermediate	71-30-7	Lamivudine/used to treat hepatitis B infection
43	N-(2-methyl-5-nitrophenyl) guanidine Hydrochloride	API Intermediate	152460-08-7	Imatinib /to treat certain types of cancer
44	3-dimethylamino-l-pyridin-3-ylpropanone:	API Intermediate	55314-16-4	Imatinib /to treat certain types of cancer
45	(2-methyl-5-nitrophenyl)-(4-pyridin-3-ylpyrimidin-2-yl)amine	API Intermediate	152460-09-8	Imatinib /to treat certain types of cancer

46	N-(2-Methyl-5-aminophenyl)-4-(3-pyridyl)-2-pyrimidine amine	API Intermediate	152460-10-1.		Imatinib /to treat certain types of cancer
47	DIMETHYL FORMAMIDE DIMETHYL ACETAL	API Intermediate	4637-24-5		Imatinib /to treat certain types of cancer
48	3,4,5-Trimethoxy Benzaldehyde	API Intermediate	86-81-7		Trimetazidine is used to prevent Angina (heart-related chest pain).
49	Bromoacetaldehyde Diethyl Acetal	API Intermediate	2032-35-1		Lamivudine/used to treat hepatitis B infection
50	Cyano Acetaldehyde Diethyl Acetal	API Intermediate	2032-34-0		Lamivudine/used to treat hepatitis B infection
51	3, 4-dihydroxy-5-nitrobenzaldehyde	API Intermediate	116313-85-5		Entacapone is used together with carbidopa and levodopa to treat "wearing-off" symptoms of Parkinson's disease, such as stiffness, tremors, muscle spasms, and poor muscle control
52	Semicarbazide hydrochloride	Intermediate	563-41-7,		This medication is used to treat depression
53	Trans-4-aminocyclohexanol	API Intermediate	27489-62-9		used to treat pathological mucus secretion disorders
54	2,4 DiChloro Benzoic Acid	API Intermediate	50-84-0		It is an anticonvulsant or antiepileptic drug
55	2 HYDROXY 5 NITRO BENZOIC ACID	API Intermediate	96-97-9		Mesalamine is used to treat and prevent mild to moderately active ulcerative colitis
56	2-Ethoxybenzoic acid	API Intermediate	134-11-2		phosphodiesterase (PDE) inhibitors
Group C					
57	10-METHOXY IMINOSTILBENE	intermediate/n-1	07-11-4698		relief of symptoms of excessive anxiety
58	4-CAP (4-CHLORO 2 – AMINO PHENOL)	API Intermediate	95- 85-2	15	Chlorzoxazone is a muscle relaxer that blocks pain sensations between the nerves and the brain.
59	5-Chloro aniline 2,4 disulphonamide	Intermediate	121-30-2		Used to treat edema caused by using certain medications

					including estrogen and corticosteroids.
60	methyl-6-methylnicotinate	API Intermediate	5470-70-2		Etoricoxib is a non-steroidal anti-inflammatory drug (NSAIDs) that is used as anti-inflammatory painkillers
61	4-(2-Methoxy ethyl Phenol) OR MEP	API Intermediate	56718-71-9		used as a beta-blocker
62	Ortho tolyl benzonitrile	API Intermediate	114772-53-1		Irbesartan/for the treatment of Hypertension
63	1-ADAMANTANOL	API Intermediate	768-95-6		used for the treatment of Type 2 diabetes mellitus.
64	Phenyl Hydrazine	Api Intermediate	100-63-0		Anti inflammatory
65	2-AMINO-BUTYRAMIDE HYDROCHLORIDE (SABAM) (Levitracetum intermediate)	API Intermediate	7682-20-4		Anti-epileptic
66	4-hydroxy carbazole	API Intermediate	52602-39-8		used in the treatment of hyper tension
67	BIS (2-CHLOROETHYL)AMINE-HCl	Intermediate	821-48-7		to treat Hodgkin's lymphoma (Hodgkin's disease) and non-Hodgkin's lymphoma (
68	Diclofenac Sodium	API	15307-79-6		Diclofenac Sodium /Used to relieve pain, reduce swelling and ease inflammation
69	Lidocaine	API	137-58-6	25	to temporarily numb and relieve pain from minor burns(including sunburn), skin abrasions, insect bites, and other painful conditions affecting mucous membranes.
70	Lasamide	API	2736-23-4		It is an anticonvulsant or antiepileptic drug.
71	Lornoxicam	API	70374-39-9		used to treat inflammatory diseases of the joints, osteoarthritis, surgery, sciatica, and other inflammations
72	Imatinib	API	152459-95-5		Imatinib /to treat certain types of cancer
73	Imatinib mesylate	API	220127-57-		Imatinib /to treat

			1		certain types of cancer
74	Ibrutinib	API	936563-96-1		Imatinib /to treat certain types of cancer
75	ACETANILIDE	Intermediate	103-84-4		used in the treatment of acute and chronic schizophrenic disorders
76	4 - Amino Benzene Sulphonamide	Intermediate	63-74-1		used in the treatment of acute and chronic schizophrenic disorders
	Group D				
77	4-bromomethyl-1,2-dihydroquinoline-2-one	API Intermediate	02-10-4876		used in the treatment of peptic ulcer disease and mouth ulcers.
78	ALPHA-BROMO-2-CHLORO-PHENYL ACETIC ACID METHYL ESTER	API Intermediate	141109-25-3		used to prevent serious or life-threatening problems with the heart and blood vessels
79	6-Bromo-3-hydroxy pyrazine-2-carboxamide	Intermediate	259793-88-9		an antiviral drug,
80	(1-Ethylpyrrolidin-2-yl)methanamine	API Intermediate	22795-99-9	10	Levosulpiride is used in the treatment of Gastroesophageal reflux disease (Acid reflux), Irritable bowel syndrome, heartburn, schizophrenia and depression
81	(s)-1-(2-chloroacetyl)pyrrolidine-2-carbonitrile	API Intermediate	207557-35-5		used for the treatment of Type 2 diabetes mellitus.
82	2,6 Dihydroxy Acetophenone	API Intermediate	699-83-2		to prevent them from releasing substances that cause allergic symptoms
83	DASATINIB	API	302962-49-8		Imatinib /to treat certain types of cancer
84	2-5-Dihydroxy 1-4- Dithiane (DHDT)	API Intermediate	40018-26-6		Lamivudine/used to treat hepatitis B infection
85	R & D Product	-	-	0.1	
	Total			500.1	

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 11.04.2022.

- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile.
- 7) Looking to product profile some of the proposed products are not in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as category B2 projects

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

1. Technical justification regarding proposed products are 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

06	SIA/GJ/IND3/248064/2021	M/s. Legend Industries Plot No. 478, Phase-II, GIDC Vatva, Ahmedabad, Gujarat.	EC
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Category of the unit: **5 (f)**

Project status: **Expansion**

1) Details of Application:

1.1. Type of application:	EC-EXPANSION
1.2. Proposal no.	SIA/GJ/IND3/248064/2021
1.3. Category of Project:	5 (f) – B2
1.4. Date of application:	26.02.2022
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. Bhagwati Enviro Care Pvt. Ltd.
1.8. SEAC Meeting No. and Date:	399 th meeting dated 11.04.2022
1.9. Compliance of Existing EC & CCA	EC Obtained vide letter no. SEIAA/GUJ/EC/5(f)/1162/2021 dated: 02.07.2021 Self-compliance report submitted with application Consent order no.: AWH-94843, Date of Validity: 10.04.2023 Self-compliance report submitted with application.

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

Sr. no.	Name of the Products	API OR INTERMEDIATE	CAS no.	Quantity MT/Month			End-use of the products *
				Existing	Proposed	Total	
1	Sulfacitamide Sodium Salt	API	6209-17-2	2.0	-2.0	0.0	--
2	Riboflavin Sodium Phosphate	API	130-40-5	5.0	00	5.0	API/VITAMIN SUPPLYMENT
3	Ferrous Ascorbate	API	241-469-7	15	10	25	API/HIMOGLOBIN
4	Sucralfate	API	541682-58-0	-	10	10	API/DUODENAL ULCERS
5	Calcium Citrate Malate	API	142606-53-9	-	15	15	API/CALCIUM
Total				22	33	55	

- 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 11.04.2022.
- 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 Project (Rs. in Crores):																														
<table border="1"> <thead> <tr> <th>Existing</th> <th>Proposed</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>3.94 Crores</td> <td>0</td> <td>3.94 Crores</td> </tr> </tbody> </table>			Existing	Proposed	Total	3.94 Crores	0	3.94 Crores																						
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A-2	Details of CER -																													
The CER shall remain same as there is no change in project cost. Total Cost: 3.94 Cr. (Existing-3.94 Cr + Propose-0)																														
B	Land / Plot ownership details:																													
Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/AM/AD/ALT/TFR/VTW/PLT/4035 on dated 16/09/2005 with name of M/s. Unnati Industries.																														
Lease agreement between M/s. Unnati Industries & M/s. Legend Industries																														
B-1	Plot area																													
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B-2	Area adequacy																													
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Sr. No.	Area	Area in Sq. m.																												
		Ground Floor	First Floor	Total Area																										
1	Production Area (Existing + Proposed)	278.4	160	378.4																										
2	Finish Good Storage Area	70	0	70																										
3	Raw Material Storage Area (Solid)	90	0	90																										
4	Raw Material	110	0	110																										

	Storage (Liquid)			
5	Solvent Storage (Fresh + Recover)			
6	Tank Farm	66	0	66
7	Utility	38.7	0	38.7
8	ETP (Existing + Proposed) & Solid Waste Storage Area	123.24	0	123.24
9	Office	0	100	100
10	Occupation Health Centre	20	0	20
11	Security Cabin	9	0	9
12	Greenbelt area	550	0	550
13	Road Area	772.8	0	772.8
14	Open Area	246.86	0	246.86
	TOTAL	2375	260	2635

Storage Justification

S r. No.	Area for use	Type of packing	Storage Detail (As per EC)		Storage Detail (As per EC Expansion)		Area required (Sq. m.)		Area Provided (Sq. m.)
			Maximum Storage Qty. (MT)	Total number of Bags/Drum	Maximum Storage Qty. (MT)	Total number of Bags/Drum	As per EC	As per EC Expansion	
1	Finish Good Storage	Bag-50 kg	7.0	Total Bag – 140 Layer – 35 (4 Bag)	15.4	Total Bag – 308 Layer – 77 (4 Bag)	18.9	41.58	70
2	Solid Raw Material	Bag-50 kg	3.0	Total bag – 60 Layer – 15 (4 Bag)	12	Total Bag – 240 Layer – 60 (4 Bag)	8.1	32.4	90
3	Liquid Raw Material (Including Solvent)	Drum-200	5.6	Total Drum - 28	4.0	20	20.16	14.4	110
4	Tank Farm	--	Total Tank – 2 (5 KL each)		Total Tank – 3 (5 KL each)		--		66

➤ 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	550 inside + 593 in GIDC Vatva
% of total area	23% Inside + 25% Outside

Comments:

The condition shall be given that -

- The PP shall develop green belt 550 m² (23%) inside plant premises + 593 m² (25%) at Common Plot in Vatva GIDC= Total: 1143 Sq. m.) i.e. 48 % 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
15	6	21

D WATER

D-1 Source of Water Supply

- Vatva 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
(A) Domestic	2.0	0.0	2.0
(B) Gardening	2.0	0.0	2.0
(C) Industrial			

Process	2.72	5.38	8.1
Washing	4.0	0.0	4.0
Boiler	2.9	1.1	4.0
Cooling	1.0	0.5	1.5
Others (Scrubber)	0.5	0.0	0.5
Industrial Total	11.12	6.98	18.1
Grand Total (A+B+C)	15.12	6.98	22.1

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.

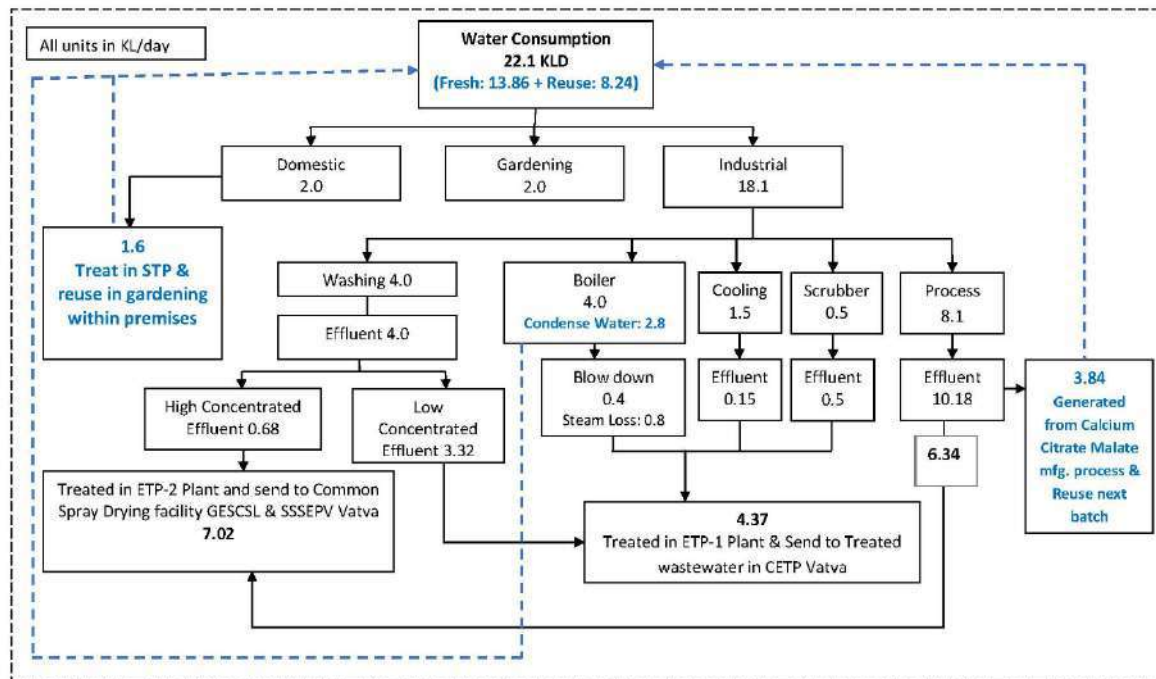
D-3 Waste water generation (KLD)

Category	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD
(A) Domestic	1.6	0.0	1.6
(B) Industrial			
Process	4.59	5.59	10.18
Washing	4.0	0.0	4.0
Boiler	0.3	0.1	0.4
Cooling	0.1	0.05	0.15
Others (Scrubber)	0.5	0.0	0.5
Total Industrial waste water	9.49	5.74	15.23
Grand Total (A+B)	11.09	5.74	16.83

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)																	
<p>1.6 KLD Domestic Waste Water shall be treated in STP & treated wastewater shall be reused in gardening purpose within premises.</p> <p><u>Comments:</u></p> <ul style="list-style-type: none"> ➤ 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 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)																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Sr. no.</th> <th style="width: 15%;">Quantity KLD</th> <th style="width: 75%;">Facility</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4.37</td> <td>CETP-Vatva</td> </tr> <tr> <td>2</td> <td>7.02</td> <td>Common Spray Drying facility at GIDC Vatva</td> </tr> <tr> <td>3</td> <td>3.84</td> <td>Reuse in mfg. process within premises</td> </tr> <tr> <td>Total</td> <td>15.23</td> <td></td> </tr> </tbody> </table> <p>Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)</p> <p>Membership certificate of CETP M/s: The Green Environment Service Co-op. Society Ltd GIDC Vatva vide no. Ref. GESCSL/CETP/2022 dated 05.04.2022</p> <p>Membership certificate of Common Spray Dryer M/s: The Green Environment Service Co-op. Society Ltd GIDC Vatva vide no. Ref. GESCSL/CS/2022 dated 05.04.2022</p> <p>Membership certificate of Common Spray Dryer M/s: Shree Shaktishol Environment Pvt. Ltd. vide no. Ref. SSSEPL/CS/2022 dated 25.01.2022</p>				Sr. no.	Quantity KLD	Facility	1	4.37	CETP-Vatva	2	7.02	Common Spray Drying facility at GIDC Vatva	3	3.84	Reuse in mfg. process within premises	Total	15.23	
Sr. no.	Quantity KLD	Facility																
1	4.37	CETP-Vatva																
2	7.02	Common Spray Drying facility at GIDC Vatva																
3	3.84	Reuse in mfg. process within premises																
Total	15.23																	
D-5b	Simplified water balance diagram																	



D-5c Summary

Summary of water requirement	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD	Remarks
Total water requirement for the project (A)	15.12	6.98	22.1	
Quantity to be recycled (B)	3.5	4.74	8.24	
Total fresh water requirement (C)	11.62	2.24	13.86	
Ensure Total water requirement = Fresh water + Recycled water i.e. A = B + C				

Comments:

- Total water requirement for the project shall not exceed 22.1 KLD. Unit shall reuse 1.6 KLD of treated STP water in gardening within premise, 3.84 KLD of process effluent within premises & 2.8 KLD Boiler condensate water in Boiler itself. Hence, fresh water requirement shall not exceed 13.86 KLD and it shall be met through Vatva GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
- Management of Industrial effluent shall be as under:

Dilute Stream (4.37)

- **4.37 KLD** (Generated from Plant Washing: 3.32KLD, Boiler Blowdown: 0.4KLD, Cooling: 0.15KLD, Scrubber: 0.5KLD) shall be treated in existing ETP (Having Primary, Secondary & Tertiary Treatment Unit) then send to CETP-Vatva.

Concentrated Stream (7.02 KLD):

- **7.02 KLD** (Generated from mfg. process: 6.34KLD, Vessel Washing: 0.68KLD) shall be treated in propose ETP (Having Primary Treatment Unit) then send to Common Spray Dryer facility at The Green Environment Service Co-op. Society Ltd. Vatva & Shree Shaktishol Environment Pvt. Ltd. Vatva For Spray Drying.
- **3.84 KLD:** Wastewater generated from mfg. process Calcium Citrate Malate shall be reused in next batch with same product within premises.
3. Treated waste water shall be sent to CETP of Vatva only after complying with the inlet norms of CETP prescribed by GPCB to ensure no adverse impact on Human Health and Environment
 4. 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.
 5. Unit shall provide STP and ETP with adequate capacity.
 6. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

E	AIR					
E-1	Power (Electricity) requirement :100 KVA					
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.	Steam Boiler (1 TPH) (Existing)	30	Natur al Gas	700 SCM/D ay	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	Spray Dryer (1 KL/Hr) (Existing)	SPM	30	Multi Cyclone Separator followed by Wet Scrubber

E-4 Fugitive emission details with its mitigation measures.

Fugitive emission shall due to the leakages in pump, storage container, material transferring, and packing.

Mitigation measures:

- Proper storage of raw materials, products and fuels
- Ensuring closed feeding and sampling.
- Establishing SOPs for start-up, shut down and maintenance operational procedure
- Regular work place and ambient air quality monitoring shall be done.

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, boilers 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

Type of solvents	% Recovery	% Losses		
		Air	Water	Haz
Methanol	98.8	--	--	3.29

F-2 VOC emission sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- 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 shall be provided at all solvent pumps.
- All the rotating equipment like pumps shall be installed with Mechanical Seals to arrest any sort of emissions.
- Condenser and scrubber post Reactor with cooling arrangement.
- Enclosures to chemical storage area, collection of emission from loading of raw

materials in particular solvents through hoods and ducts by induced draft, and control by condenser to be ensured.

- In case the small spillage or leakage observed, first pour the china clay (vermiculite) on material and collect the contaminated china clay (vermiculite) and send to ETP.
- If the spillage is of inflammable liquid, switch off all the power supply in the area to prevent Electric Spark.

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:

- ✓ 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
				Existing	Proposed	Total	
1	ETP Waste	ETP	35.3	72	18	90	Collection, Storage,

							Transportation Disposal at TSDF site approved by Board.(Eco Care Infrastructure Pvt. Ltd.)
2	Used Oil	Plant Machinery	5.1	50 Lit	20 Lit	70 Lit	Collection, Storage, Transportation & Disposal by selling to registered refiners/Used as lubricant in Plant & Machineries.
3	Discarded Drums, Barrels	Production/Raw Material Section	33.1	3.0	1.0	4.0	Collection, Storage Decontamination, Transportation & Disposal by selling to authorized recycler
4	Distillation Residue	From Distillation	36.1	1.8	0	1.8	Collection, Storage, Transportation, disposal at SEPPL for incineration
5	Spent Solvent	From Distillation process of solvent	28.6	196.8	0	196.8	Collection, Storage, Recover & Reuse in mfg. process within 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			
✓ STP sludge generation shall be 0.5 MTPA				
Comments:				
➤ 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
1	CSA	5 KL	1	Flammable
2	Sodium Hydroxide	5 KL	1	--
- Storage of Hazardous chemicals in Tanks				
<ul style="list-style-type: none"> ➤ Dyke shall be provided to storage tank to collect leakage/spillage ➤ Provision of Static Earthing ➤ Fire Extinguisher/Fire Hydrant System ➤ Lighting /Proper Illumination ➤ Lightening arrestor ➤ Trained and experience operators ➤ NFPA label capacity and content should display on storage tank 				
<u>Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.</u>				
<ul style="list-style-type: none"> ➤ Drums shall be stored at designated location or secured in a safety storage cabinet. ➤ Proper ventilation shall be provided in Godown. ➤ Proper label and identification board /stickers shall be provided in the storage area. ➤ Drum handling trolley / stackers/fork lift shall be used for drum handling. ➤ Separate dispensing room with local exhaust and static earthing provision shall be made. ➤ Materials shall be transferred by pumping through pipeline or by vacuum, from drums. ➤ Drums for flammable liquids shall have proper closures that can withstand the expected handling conditions without leaking. ➤ FLP type light fittings shall be provided. 				
Safety details of Hazardous Chemicals:				
Type of Hazardous Chemicals	Safety measures			
FLAMMABL	<ul style="list-style-type: none"> • Separate Isolated Storage Area is constructed as per explosive 			

E & EXPLOSIVE	<p>department requirement and separation distance shall be maintained, accordingly.</p> <ul style="list-style-type: none"> • Workers and Operators handling such materials shall be trained for the hazards (fire/explosion, health, and chemical reactivity) associated with them. • Lightning arrestor shall be provided on the top of tallest structure. • NFPA label (hazard identification) capacity and content shall be displayed on respective barrels. • Every time it shall be ensured that barrels are cleaned and no chemicals are as a residue to avoid mixing and causing explosion or any mishap • While decanting chemicals proper earthing arrangement shall be ensured to avoid static charge • Good housekeeping shall be maintained. • Work Instructions shall be prepared and followed. • Proper ventilation shall be provided in storage room. • Proper label and identification board /stickers shall be provided in the storage area. • Area shall be marked as “Hazardous Chemical Storage”, “No Smoking”, “Hot work Restricted”. No cell phones • MSDS of chemicals stored shall be available in storage area 	
CORROSIVE & CHEMICALS	<ul style="list-style-type: none"> • Preventing or minimizing contact between corrosive substances and skin, mucous membranes and eyes. • Corrosive substances should not be allowed to come in contact with materials that may react. • All the containers, pipes, apparatus, installations and structures used for the manufacture, storage, transport or use of these substances may be protected by suitable coatings, impervious to and unaffected by corrosives. • All containers or receptacles should be clearly labelled to indicate their contents and should bear the danger symbol for corrosives. • Adequate ventilation and exhaust arrangement whether general or local, should be provided whenever corrosive toxic gases or dust are present. • Personal protective devices shall be used • First aid treatment facilities shall be provided and all concerned should be instructed to follow safe practices such as (a) Prolonged washing with water (b) Removing contaminated clothing (c) Seeking immediate medical help. • Safety showers and eye washers is provided. 	
REACTIVE CHEMICALS	<ul style="list-style-type: none"> • Store minimum quantities • Segregate chemicals, e.g. from water, air, incompatible chemicals, sources of heat, ignition sources • Spillage control; bund, spray, blanket, containment. Drain to collection pit • Decontamination and first-aid provisions, e.g. neutralize/destroy, fire-fighting • Contain/vent pressure generated to a safe area • Split-up stocks into manageable lots, e.g. with reference to fire loading/spillage control. • Ensure appropriate levels of security, hazard warning notices, 	

- fences, patrols. Control access including vehicles
- Appropriate gas/vapour/fume/pressure venting, e.g. flame arrestors, scrubbers, absorbers, stacks
 - Ensure adequate natural or forced general ventilation of the storage area Provide adequate, safe lighting
 - Label (name and number); identify loading/unloading/transfer couplings
 - Provide appropriate fire protection (sprinkler, dry powder, gas)
 - Ensure adequate access for both normal and emergency purposes with alternative routes

- **Applicability of PESO:** No. Due to the less storage quantity PESO was not applicable.

Comments:

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

There shall be no hazardous processes i.e. Hydrogenation process, Nitration process, Chlorination process, Exothermic Reaction **in existing as well propose manufacturing activity and other ancillary operation**

H-3 Details of Fire Load Calculation

Total Plot Area:	2375 Sq. m.
Area utilized for plant activity:	900 Sq. m.
Area utilized for Hazardous Chemicals Storage:	50 Sq. m.
Number of Floors:	G+1
Water requirement for firefighting in KLD:	50 L/Min
Water storage tank provided for firefighting in KLD:	200 KL
Details of Hydrant Pumps:	1) Main Pump : Flow : 98m ³ /Hr , Head : 75Meter 2) Diesel Pump :Flow : 98m ³ /Hr , Head :75 Meter 3) Jockey Pump : Flow : 10.8 m ³ /Hr , Head : 75 Meter
Nearest Fire Station :	Jashoda Nagar Fire Station – 3.86 km
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 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:	21
Number of Contractual person/Labour:	3
Area provided for OHC:	20
Number of First Aid Boxes:	10
Nearest General Hospital:	ESIC Hospital GIDC Vatva – 0.77 km
Name of Antidotes to be store in plant:	Adequate antidotes shall 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	Detail	Capital Cost (Rs. In Crore)	Operating Cost (Rs. In Crore)	Maintenance Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)
1	Waste Water	ETP & STP Installation	0.1	0.015	Existing: 0.01 + Propose: 0.02	0.045
		Spray Drying & CETP discharge	0.0	Existing: 0.695 + Propose: 0.73	0.0	1.425
2	Air	Proposed Spray Dryer	0.08	0.015	0.005	0.02
3	Hazardous Management	Storage area, Transportation, Land filling cost	0.01	0.025	0.005	0.03
4	Fire & Safety	Fire Hydrant System & Fire Extinguishers	0.11	0.005	0.005	0.01
		Provision of safety equipment				
5	AWH Monitoring	Monitoring by authorized agency	0.01	0.015	0.0	0.015

6.	Green Belt Development	For develop gardening area & trees planted	0.02	0.02	0.005	0.025
7.	Occupational Health	OHC & health checkup of workers	0.03	0.035	0.005	0.04
8	Process & Hazard Control	DCS System Provided	0.08	0.005	0.005	0.01
9	CER Activity	CER Activity shall do in near villages.	0.03	0.0	0.0	0.0
TOTAL			0.47	1.56	0.06	1.62

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. 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. 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.

WATER

9. Total water requirement for the project shall not exceed 22.1 KLD. Unit shall reuse 1.6 KLD of treated STP water in gardening within premise, 3.84 KLD of process effluent within premises & 2.8 KLD Boiler condensate water in Boiler itself. Hence, fresh water requirement shall not exceed 13.86 KLD and it shall be met through Vatva 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 15.23 KLD.
11. Management of Industrial effluent shall be as under:

Dilute Stream (4.37)

- **4.37 KLD** (Generated from Plant Washing: 3.32KLD, Boiler Blowdown: 0.4KLD, Cooling: 0.15KLD, Scrubber: 0.5KLD) shall be treated in existing ETP (Having Primary, Secondary & Tertiary Treatment Unit) then send to CETP-Vatva.

Concentrated Stream (7.02 KLD):

- **7.02 KLD** (Generated from mfg. process: 6.34KLD, Vessel Washing: 0.68KLD) shall be treated in propose ETP (Having Primary Treatment Unit) then send to Common Spray Dryer facility at The Green Environment Service Co-op. Society Ltd. Vatva & Shree Shaktishol Environment Pvt. Ltd. Vatva For Spray Drying.
- **3.84 KLD:** Wastewater generated from mfg. process Calcium Citrate Malate shall be reused in next batch with same product within premises.

12. Treated waste water shall be sent to CETP of Vatva only after complying with the inlet norms of CETP prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
13. 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.
14. Domestic wastewater generation shall not exceed 1.6 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.

In case of STP

- *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 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.*
15. Unit shall provide STP and ETP with adequate capacity.
 16. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.
 17. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
 18. 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:

19. Unit shall not exceed fuel consumption for Steam Boiler as per the point no. E-2 as mentioned above.
20. Unit shall provide adequate Stack Height with flue gas generation sources to achieve the norms prescribed by GPCB.
21. Unit shall provide adequate APCM with process gas generation sources as the point no. **E-3** as mentioned above.
22. 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.

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

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

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

25. Solvent management shall be carried out as follows:

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

26. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x 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:

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

mentioned above.

28. 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.
29. 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.
30. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
31. STP sludge shall be collected and used as manure in gardening activity.
32. The unit shall submit the list of authorized end users of hazardous wastes along with MoU signed with them at least two months in advance prior to the commencement of production. In the absence of potential buyers of these items, the unit shall restrict the production of the respective items.

GREENBELT AREA

33. The PP shall develop green belt 550 m² (23%) inside plant premises + 593 m² (25%) at Common Plot in Vatva GIDC= Total: 1143 Sq. m.) i.e. 48 % 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:

34. The project proponent shall carry out the entire activities [The CER shall remain same as there is no change in project cost. Total Cost: 3.94 Cr. (Existing-3.94 Cr + Propose-0)] 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.
35. 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:

36. 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.
37. 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 shall not mean that appointing a key person shall exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.

38. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
39. 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.
40. 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.
41. 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.
42. 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/IND3/248628/2021	M/s. Kohinoor Chemo Pharma Plot No. 824/15, GIDC, Jhagadia Industrial Estate, Jhagadia, Dist.: Bharuch, Gujarat-393110	EC
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Category of the unit: **5 (f)**

Project status: **Expansion**

1) Details of Application:

1.1. Type of application:	EC-Expansion
1.2. Proposal no.	SIA/GJ/IND3/248628/2021
1.3. Category of Project:	5 (f) – B2
1.4. Date of application:	30.12.2021
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:	399 th meeting dated 11.04.2022
1.9. Compliance of Existing EC & CCA	Unit has been issued EC on the name of M/s. Kohinoor Chemo pharma Projects granted by SEAC

vide order on SEIAA/GUJ/EC/5(f)/1607/2020 on Dated: -24th December 2020. GPCB has been issued a **ECC vide no. CTE-46333 on date: - 20/04/2021** for manufacturing of synthetic organic chemicals. 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.	Quantity (MT/Month)			*End-use of products
			Existing	Proposed	Total	
Existing						
1	Meta Amino Phenol	591-27-5	130	0.0	130	Synthetic organic chemicals
2	N-Propyl Bromide	106-94-5				
3	N-Butyl Bromide	109-65-9				
4	3,5 Xylenol	108-68-9				
5	Diethyl Meta Amino Phenol Aldehyde	91-98-9	50	0.0	50	
6	Methyl Violet 2B	8004-87-3	320	0.0	320	
7	Methyl Violet 2B Liquid	8004-87-3				
8	Malachite Green Liquid	569-64-2				
9	Auramine O	2465-27-2				
10	Auramine O Liquid	2465-27-2				
11	Crystal Violet	548-62-9				
Proposed						
12	1-4-Chloro Benzhydryl Piperazine	303-26-4	0.0	50 TPM [Sr. No. 12 to 56]	50 TPM [Sr. No. 12 to 56]	An antihistamine used to relieve allergy symptoms such as watery eyes, runny nose, itching eyes/nose, sneezing, hives, and itching.
13	1-[2,3 Di Chloro Phenyl] Piperazine Hydrochloride	119532-26-2				

							add-on treatment in major depressive disorder
14	Dibenzo[b,f][1,4]Thiazepin-11[10H]-One	3159-07-7					Anti-psychotic - used to treat certain mental/mood conditions.
15	4 Methyl Acetophenone	122-00-9					Anti-inflammatory-t is used to treat the pain and inflammation in osteoarthritis.
16	Bis (2-Chloroethyl) Amine Hydrochloride	821-48-7					an antifungal-used to treat certain infections caused by fungus
17	8-Chloro-11-(4-methyl-1-piperazinyl)-5H-dibenzo [b,e][1,4] diazepine	5786-21-0					An antipsychotic medicine. It works by changing the actions of chemicals in the brain.
18	2-[2-3(S)-3-[2-(7-chloro-2-quinolinyl) - ethyl] phenyl]-3-hydroxypropyl phenyl-2-propanol	142569-70-8					Used in the treatment of asthma
19	3,4-dimethoxybenzoyl chloride	7306-46-9					It is used for the treatment of Gastroesophageal Reflux Disease, Functional Dyspepsia, and other associated motility disorders.
20	5-amino-2,4,6-triiodobenzene-1,3-dicarbonyl chloride	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.
21	Methyl-5-bromo-2-hydroxy-3-propanoylbenzoate	91099-82-0				It is used to treat certain bladder/urinary tract symptoms. It is a smooth-muscle relaxant. It works by relaxing the muscles in the bladder.
22	5-Amino-2,4,6-triiodoisophthalic acid	35453-19-1				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.
23	4 Amino 1,2,4 Triazole	584-13-4				Used to prevent and treat a variety of fungal and yeast infections.
24	3-(3-chloropropyl)-7,8-dimethoxy-1,3-dihydro-2H-3-benzazepin-2-one	85175-59-3				It is used to treat heart failure.
25	2-Butyl-4-Chloro-1H-imidazole-5-carbaldehyde	83857-96-9				It is used to treat high blood pressure (hypertension) and to help protect the kidneys from damage due to diabetes.
26	4-(4-aminophenyl) morpholin-3-one	438056-69-0				It is used to prevent or treat a type of blood clot called deep vein thrombosis (DV T), which can

							lead to blood clots in the lungs (pulmonary embolism)
27	6-Hydroxy-3,4-dihydroquinolin-2(1H)-one	54197-66-9					It is used to improve the symptoms of a certain blood flow problem in the legs (intermittent claudication). Cilostazol can decrease the muscle pain/cramps that occur during exercise/walking.
28	1-(3-Chlorophenyl)-4-(3-Chloropropyl) Piperazine Hydrochloride	52605-52-4					It is used as an antidepressant that increases serotonin activity in the brain. Trazodone is used for depression, anxiety, sleep and pain.
29	1-(4-Fluorophenyl) Piperazine	2252-63-3					It is used to treat life-threatening low blood pressure that can occur with certain medical conditions or surgical procedures. Norepinephrine is often used during CPR
30	1-(3-Chloro-propyl)-1,3-dihydro-benzimidazol-2-one	62780-89-6					Medicine that increases the movements or contractions of the stomach and bowel.

31	4(aminomethyl) benzoic acid	56-91-7				Used to treat or prevent excessive blood loss from major trauma, postpartum bleeding, surgery, tooth removal, nosebleeds, and heavy menstruation.
32	2,6-Dimethylphenyl chloroacetamide	1131-01-7				used to prevent and relieve pain - used to reduce pain or discomfort caused by skin irritations such as sunburn, insect bites, poison ivy, poison oak, poison sumac, and minor cuts, scratches, or burns
33	4,4'[2-Pyridinyl methylene] Bisphenol	603-41-8				used as a treatment for constipation or to prepare the large bowel before colonoscopy or surgery
34	Trans 4-Amino Cyclohexanol	27489-62-9				used in the treatment of respiratory diseases associated with viscid or excessive mucus
35	1-Ethyl-3-(3-Dimethyl aminopropyl) Carbodimide Hydrochloride	25952-53-8				It is used with other HIV medications for infants and children to help control HIV infection.
36	6 chloro-4- hydroxy- 2- methyl- 2H thieno [2,3-e] [1,2] thiazine- 3- carboxylate- 1,1-	70415-50-8				Used for the treatment of various types of pain, especially

	dioxide					resulting from inflammatory diseases of the joints, osteoarthritis, surgery, sciatica, and other inflammations.
37	2-Amino 5-Methyl Thiazole	7305-71-7				Anti-inflammatory- used to treat pain and inflammation in rheumatic diseases and osteoarthritis.
38	Hexamethylene tetramine	100-97-0				It is an antibiotic, eliminates bacteria that cause urinary tract infections. It usually is used on a long-term basis to treat chronic infections and to prevent recurrence of infections.
39	3-(dimethylamino)-1-(3-methoxyphenyl) -2-methylpropan-1-one	197145-37-2				It is used to treat moderate to severe pain. The extended-release form of tapentadol (Nucynta ER) is for around-the-clock treatment of pain that is not controlled by other medicines .
40	2-[(dimethylamino) methyl] cyclohexanone hydrochloride	42036-65-7				It is used to treat moderate to severe pain in adults. The extended-release form of tramadol is for around-the-clock treatment

							of pain.
41	2-[2-(piperazin-1-yl)ethoxy]ethanol	85293-16-9					It is used to treat certain mental/ Mood conditions (such as schizophrenia, Bipolar disorder, sudden episodes of mania or depression associated with bipolar disorder).
42	11-Piperazinyl-dibenzo(b,f) (1,4)-thiazepine hydrochloride	111974-74-4					anti-psychotic - used to treat certain mental/mood conditions
43	1-(3-Chlorophenyl) Piperazine	6640-24-0					It is an antidepressant that increases serotonin activity in the brain. It is used for depression, anxiety, sleep and pain.
44	1-(hydroxycyclohexyl)-(4-methoxyphenyl)acetonitrile	93413-76-4					It is an antidepressant belonging to a group of drugs called selective serotonin and norepinephrine reuptake inhibitors (SSNRIs).
45	4,4,4-trifluoro-1-(4-methylphenyl) butane-1,3-dione	720-94-5					It works by reducing hormones that cause inflammation and pain in the body. It is used to treat pain or inflammation caus

						ed by many conditions such as arthritis, ankylosing spondylitis, and menstrual pain.
46	1-(4-methoxyphenyl) piperazine hydrochloride	84145-43-7				It is used in adults to treat infections caused by fungus. This includes infections in any part of the body including the lungs, mouth or throat, toenails, or fingernails.
47	3-(dimethyl amino)-1 (thiophen-2yl) propan-1-ol	132335-44-5				Duloxetine is used to treat depression and anxiety.
48	1-[2,4-d-Difluorophenyl]-2,3-epoxypropyl-1H-1,2,4-triazole methanesulfonate	86386-77-8				An antifungal medication used for a number of fungal infections.
49	Cis- Tosylate	154003-23-3				An antifungal medication that is used to treat certain infections caused by fungus.
50	Valero Nitrile	110-59-8				Medication mainly used to treat high blood pressure.
51	5-(4'-Bromomethyl-1, 1'-Biphenyl-2-YL)-1-TriphenylmethyL-1H-Tetrazole (TTBB)	124750-51-2				Medication mainly used to treat high blood pressure.
52	2-Butyl-4-Chloro-5-Formulimidazole (BCFI)	83857-96-9				Medication mainly used to treat high blood pressure.
53	Cis-bromo benzoate	61397-56-6				An antifungal medication used to treat a number of

						fungal infections.
54	2,2,4,-Trichloro Acetophenone	4252-78-2				An antifungal medication used to treat ring worm, pityriasis versicolor, and yeast infections of the skin or vagina.
55	3-Bromo-1-(3-chloro-phenyl)-propan-1-one	500011-86-9				An antidepressant medication used to treat major depressive disorder and seasonal affective disorder.
56	5-Methyl-5-propyl-[1,3]dioxan-2-one	7148-50-7				Muscle relaxer that blocks pain sensations between the nerves and the brain.
57	R & D	--	0.0	0.1 TPM	0.1 TPM	--
Total Production Quantity			500	50.1	550.1	

- 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 11.04.2022.
- 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 EC (EC to CTE after EC) of the Board for existing plant. PP submitted point wise self-compliance report for EC & EC to CTE 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):																														
<table border="1"> <thead> <tr> <th>Existing</th> <th>Proposed</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>3.0 Crores</td> <td>4.0 Crores</td> <td>7.0 Crores</td> </tr> </tbody> </table>			Existing	Proposed	Total	3.0 Crores	4.0 Crores	7.0 Crores																						
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-																														
A-2	Details of CER -																													
PP shall carry out CER activities as below: ✓ Installation of solar street lights and RO Purifier at village																														
B	Land / Plot ownership details:																													
Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/ANK/2919, Dated: 09.08.2016, transfer on the name of Kohinoor chemo pharma.																														
B-1	Plot area																													
<table border="1"> <thead> <tr> <th>Existing</th> <th>Proposed</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>4625.0 Sq. m.</td> <td>0.0 Sq. m.</td> <td>4625.0 Sq. m.</td> </tr> </tbody> </table>			Existing	Proposed	Total	4625.0 Sq. m.	0.0 Sq. m.	4625.0 Sq. m.																						
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-																														
B-2	Area adequacy																													
Area Adequacy table: ➤ Production capacity: 50.1 MT/Month.																														

➤ List of Hazardous chemicals stored in tanks shown below.

Sr. No.	Area	Ground Floor	First Floor	Second Floor	Sq. M.	%
1	Production area:- Existing	0	220	220	440	0.0
	R. M. Storage:- Drum Storage	120	0	0	120	
	R. M. Storage:- Bag Storage	100	0	0	100	
	Total Production Area :-Existing	220	220	0	440	4.7568
	Existing F.G Storage area	250	250	0	500	5.4
2	Production area:- Proposed	0	150	150	300	0.0
	R. M. Storage:- Drum Storage	80	0	0	80	
	R. M. Storage:- Bag Storage	70	0	0	70	
	Total Production Area :-Existing	150	150	150	450	3.2432
	F. G. Storage Proposed	50	50	0	100	1.1
3	Total Raw material storage area	200	200	0	400	4.3
	R. M. Storage: - Corrosive	60	200	0	260	
	R. M. Storage: - Toxic	40	Bag	0	40	
	R. M. Storage: - Others	100	Storage	0	100	
4	Tank Farm storage area	160	0	0	160	3.5
	Tank Farm storage area :- Non-PESO Storage	80	0	0		
	Tank Farm storage area:- PESO Storage	80	0	0		
5	Utility Area	100	0	0	100	2.2
6	ETP Area	150	0	0	150	3.2
7	Solid waste Storage Area	25	0	0	25	0.5
8	Haz. Waste storage area	30	0	0	30	0.6
9	Spent Solvent Storage Area	100	0	0	100	2.2
10	Fresh Solvent Storage Area	80	0	0	80	1.7
11	Green Belt Area	1526.25	0	0	1526	33.0
12	Office Area & OH Centre	50	50	50	150	1.1
13	Open Area	1533.75	0	0	1534	33.2
	TOTAL	4625.00				100.0

S. N.	Name of chemical	Quantity (Nos.)	Total (Nos.)	Total Qty. to be store
Non-PESO Solution				
1	Sulphuric Acid	15 KL	1 Nos.	11.2 KL
2	Hydrochloric Acid	15 KL	1 Nos.	10.62 KL
3	Nitric acid	5 KL	1 Nos.	3.83 KL
PESO Solution- Tank				
1	Methanol	8 KL	1 Nos.	5.8 KL
2	Toluene	15 KL	1 Nos.	14 KL
3	Acetic Acid	20 KL	1 Nos.	19.8 KL
PESO Solution- Drum				
4	Acetone	250 Lit.	9 Nos.	2.3 KL
5	DMF	250 Lit.	19 Nos.	4.7 KL
6	Ethyl Acetate	250 Lit.	23 Nos.	5.8 KL

7	IPA	250 Lit.	19 Nos.	4.7 KL
8	EDC	250 Lit.	24 Nos.	5.8 KL
9	Ethanol	250 Lit.	18 Nos.	4.4 KL
10	MDC	250 Lit.	16 Nos.	4 KL
11	Xylene	250 Lit.	19 Nos.	4.7 KL
Set of Cylinders and Bottles				
1	Ammonia	50 Kg	58 Nos.	2.9 m ³
2	Hydrogen	60 Kg	10 Nos.	0.6 m ³
3	Bromine	3 Kg.	1600 Nos.	4.8 MT

- Area required for ETP 150 m².
- 100 m² area provided for the Boiler House.
- 450 m² (G+2) area shall be provided for the manufacturing of the proposed products.

Sr. No	Particulars	Criteria for Storage	Inventory Required (m3) (KL)	Area Required m ²	Area Proposed m ²
1	Finished product storage Area (1 week inventory)	Bags/Drums: 3889 Nos. (0.55 m ² /1 Bag 0.50 m ² /1 Drum)	117	486	500
2	Raw Material Storage Area Drum (1 week inventory)	Drums: 200 Nos. (0.50 m ² /1 Drum)	40	100	120
3	Raw Material Storage Area Bags (1 week inventory) (G+1)	Bags: 400 Nos. (0.5 m ² /1 Bag)	20	80	100
			177	666 m²	720 m²

Sr. No	Particulars	Criteria for Storage	Inventory Required (m3) (KL)	Area Required m ²	Area Proposed m ²
1	Finished product storage area (1 week inventory)	Bags/Drums: 467 Nos. (0.55 m ² /1 Bag 0.50 m ² /1 Drum)	12	58	100
2	Raw Material Storage Area Drum (1 week inventory)	Drums: 120 Nos. (0.5 m ² /1 Drum)	30	60	80
3	Raw Material Storage Area Bags (1 week inventory)	Bags: 400 Nos. (0.5 m ² /1 Bag)	20	60	70

	(G+1)				
4	Solvent storage area (PESO) (Storage at a time) (Fresh + Recover 1 week inventory)	Drums: 320 Nos. (0.5 m ² / 1 Drum)	80	160	180
			142	338 m²	430 m²
<p>➤ Hence, adequate area is available for proposed API & Bulk drug intermediate mfg. 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		1526 inside		
	% of total area		33% Inside		
Comments:					
The condition shall be given that -					
<p>➤ The PP shall develop green belt (1526 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.</p>					
C	Employment				
Employment generation					
			Total		
			50		
			-		
D	WATER				
D-1	Source of Water Supply				

- Jhagadia GIDC Water Supply
NAA/CO/JHG/463, Dated: 27.11.2019

Comments:

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

D-2 Water consumption (KLD)

Category	Existing KL/day	Proposed (Additional) KL/day	Total after Expansion KL/day	Remarks
(A) Domestic	3.0	0.0	3.0	
(B) Gardening	3.0	0.0	3.0	
(C) Industrial				
Process	64	3.54	67.54	
Washing	00	2.0	2.0	
Boiler	5.0	6.47	11.47	
Cooling	6.0	3.66	9.66	
Scrubber	8.0	1.33	9.33	
Industrial Total	83.0	17.00	100.00	
Grand Total (A+B+C)	89.0	17.00	106.00	

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.

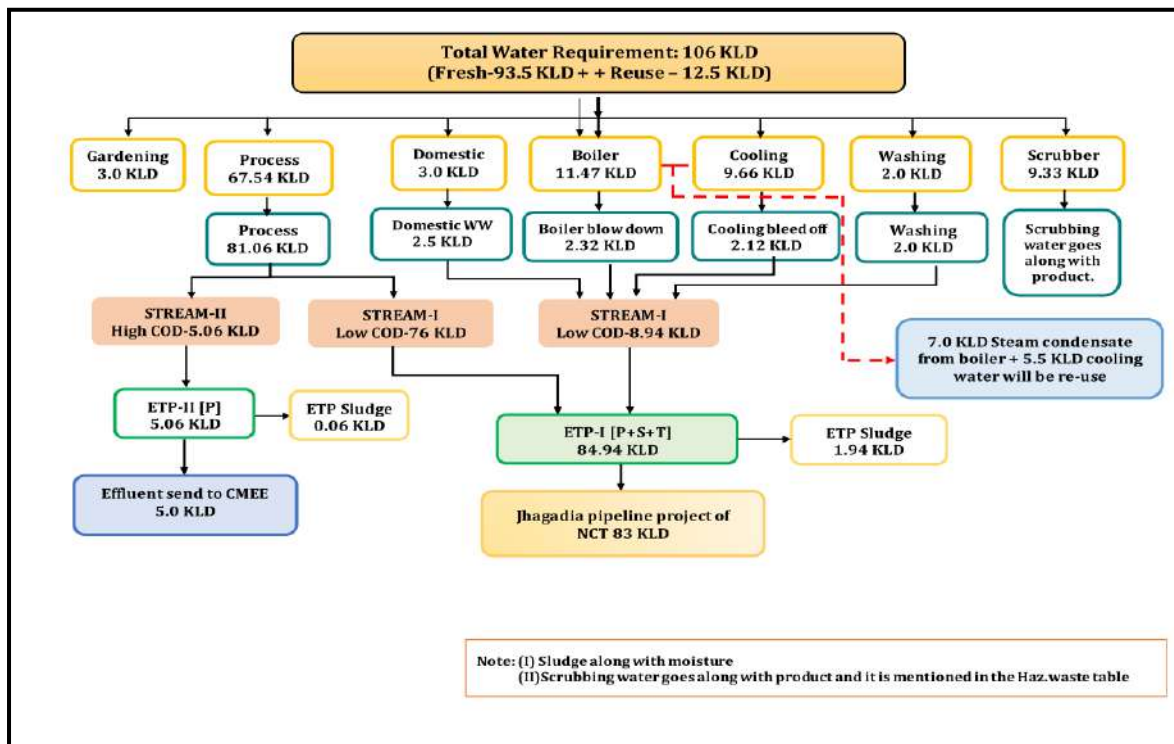
D-3 Waste water generation (KLD)

Category	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD	Remarks
(1) Domestic	2.5	0.0	2.50	
(2) Industrial				
Process	76	5.06	81.06	
Washing	00	2.0	2.00	
Boiler blow down	1.2	1.12	2.32	
Cooling Bleed off	1.3	0.82	2.12	
Scrubber	00	0.00	0.00	
Industrial Total	78.5	9.00	87.50	
Total [1 + 2]	81.0	9.00	90.00	

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)		
<p>2.50 KLD Domestic Waste Water shall be treated in ETP.</p> <p><u>Comments:</u></p> <p>➤ Domestic wastewater generation shall not exceed 2.50 KL/day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.</p>			
D-5a	Break-up of waste water disposal & facility (For Industrial)		
	Sr. no.	Quantity KLD	Facility
	1	5.06 KLD	High COD Effluent generated from process section shall be collected and treated into ETP-II [Primary] and then send to CMEE system for further treatment.
	2	82.44	Low COD Effluent generated from utilities, washing and process section shall be mixed with effluent generated from domestic section and treated into ETP-I [Primary + Secondary + Tertiary] treatment plant and after adequate treatment effluent send to Jhagadia pipeline project of NCT Project for further disposal.
	Total	87.5 KLD	
<p>Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)</p> <p>Membership certificate of M/s: Jhagadia pipeline project vide no. Ref. NCT/BQC/2018/Feb-128 dated 26.02.2018</p> <p>Membership certificate of M/s: CMEE_BEIL vide no. Ref. BEIL-ANK/2022 dated 09.04.2022</p>			
D-5b	Simplified water balance diagram		



D-5c		Summary	
	Summary of water requirement	Quantity KLD	Remarks
	Total water requirement for the project (A)	106 KLD	
	Quantity to be recycled (B)	12.5 KLD	
	Total fresh water requirement (C)	93.5 KLD	
	Ensure Total water requirement = Recycled water + Fresh water i.e. A = B + C		

Comments:

- Total water requirement for the project shall not exceed 106 KLD. Unit shall reuse 12.5 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 93.5 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:
 - ✓ 5.06 KLD High COD Effluent generated from process section shall be collected and treated into ETP-II [Primary] and then send to CMEE system for further treatment.
 - ✓ 82.44 Low COD Effluent generated from utilities, washing, process section

shall be mixed with 2.5 KLD effluent generated from domestic section hence total 84.94 KLD effluent treated into ETP-I [Primary + Secondary + Tertiary] treatment plant and after adequate treatment effluent send to Jhagadia pipeline project of NCT Project for further disposal.

- ✓ Unit shall send waste water to Common MEE and NCTL Jhagadia pipeline 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.
- 3. Unit shall provide ETP with adequate capacity.
- 4. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.

E AIR**E-1** Power (Electricity) requirement :300 KVA**E-2 Flue gas emission details**

Sr. no.	Source of emission With Capacity	Stack Height (m)	Type of Fuel	Quantity of Fuel MT/Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
Existing						
1.	Boiler (800 Kg/Hrs.)	12 (Comm on stack)	Natural Gas	1000.56 m ³ / Day	Adequate Stack Height	PM SO ₂ NO _x
2.	Thermic Fluid Heater (4 lac K cal/Hr.)					
3.	D.G. Set (63KVA)	2				
After Expansion						
1.	Boiler [2 Nos.] [Cap. 1.5 TPH] [1 for continue use 1 for stand by]	33	Natural Gas And/or Briquettes /Agro Waste	1400 Nm ³ /Day And/or 3 TPD	Adequate Stack Height And/or Multi Cyclone Separator + Bag Filter + Water scrubber	PM SO ₂ NO _x
2.	TFH [Cap. 4 Lakh K Cal/Hr.]	33	Natural Gas And/or Briquettes /Agro Waste	400 Nm ³ /Day And/or 2 TPD	Adequate Stack Height And/or Multi Cyclone Separator + Bag Filter + Water scrubber	
3.	DG Set [100 KVA]	10	Diesel	60 Lit/Day	Adequate Stack Height	

Note:

- After Expansion unit shall discontinue existing boiler and install new boilers with capacity of 1.5 TPH [2 Nos.- 1 for continue use 1 for stand by].
- Unit has Thermic fluid heater in existing with capacity of 4 lac K cal./hr., but unit shall propose Natural gas and/or Briquettes/Agro waste instead of only natural gas.

- Unit shall install DG Set with capacity of 100 KVA after expansion.

E-3 Process gas

Sr. no.	Specific Source of emission (Name of the Product & Process)	Type of emission	Stack Height (m)	Air Pollution Control Measures (APCM)
Existing				
1.	Reaction Vessel-I [Product No.2]	SO ₂	12	Two stage Alkali Scrubber
2.	Reaction Vessel-II [Product No.3]	SO ₂	12	Two stage Alkali Scrubber
3.	Reaction Vessel-III [Product No.9]	NH ₃	12	Two stage Acid Scrubber
After Expansion				
1.	Reaction Vessel-I [HBr :- 18,21,24, 28,30,53,55] [SO ₂ :- 2,3,16,19,20,22]	HBr SO ₂	15	Two stage Alkali Scrubber
2.	Reaction Vessel-II [Product No.9]	NH ₃	15	Two stage Acid Scrubber
3.	Reaction Vessels-3 [12-15,17-19,21,22,25-27,29, 52,54]	HCl	15	Two stage Scrubber [Water Scrubber + Alkali Scrubber]

E-4 Fugitive emission details with its mitigation measures.

- For Fugitive emission such as VOCs, VOC detectors shall 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	Boiling Point	Fresh Qty	Recover Qty	% Rec.
				MT/Month	MT/Month	
12	1-4-Chloro Benzhydryl Piperazine	Toluene	110.6°C	21.54	20.68	96.0
13	1-[2,3 Di Chloro Phenyl] Piperazine Hydrochloride	Methanol	64.7°C	20.00	19.40	97.0
14	Dibenzo[b,f][1,4]Thiazepin-11[10H]-One	Ethanol	78.37°C	15.00	14.55	97.0
16	Bis (2-Chloroethyl) Amine Hydrochloride	EDC	83.47°C	20.00	19.20	96.0
		Acetone	56 °C	8.00	7.68	96.0
17	8-Chloro-11-(4-methyl-1-piperazinyl)-5H-dibenzo [b,e][1,4] diazepine	Toluene	110.6°C	12.00	11.58	96.5
		MDC	39.6 °C	9.60	9.26	96.5
		IPA	82.5 °C	10.40	10.04	96.5
18	2-[2-3(S)-3-[2-(7-chloro-2-quinolinyl) -ethyl] phenyl]-3-hydroxypropyl] phenyl-2-propanol	Tetra Hydro furan	66 °C	20.00	19.20	96.0
		DMF	153 °C	16.00	15.40	96.2
19	3,4-dimethoxybenzoyl chloride	Toluene	110.6°C	4.50	4.32	96.0
21	Methyl-5-bromo-2-hydroxy-3-propanoylbenzoate	EDC	83.47°C	4.00	3.84	96.0
23	4 Amino 1,2,4 Triazole	Xylene	139 °C	3.33	3.27	98.0
24	3-(3-chloropropyl)-7,8-dimethoxy-1,3-dihydro-2H-3-benzazepin-2-one	Methanol	64.7°C	2.00	1.92	96.0
25	2-Butyl-4-Chloro-1H-imidazole-5-carbaldehyde	Methanol	64.7°C	2.00	1.92	96.0
26	4-(4-aminophenyl) morpholin-3-one	Toluene	110.6°C	2.00	1.92	96.0
27	6-Hydroxy-3,4-dihydroquinolin-2(1H)-one	Methanol	64.7°C	2.00	1.92	96.0
28	1-(3-Chlorophenyl)-4-(3-Chloropropyl) Piperazine Hydrochloride	Toluene	110.6°C	2.00	1.92	96.0
29	1-(4-Fluorophenyl) Piperazine	IPA	82.5 °C	3.00	2.92	97.3
30	1-(3-Chloro-propyl)-1,3-dihydro-benzoimidazol-2-one	Methanol	64.7°C	18.00	17.46	97.0
32	2,6-Dimethylphenyl chloroacetamide	Toluene	110.6°C	12.00	11.60	96.6

33	4,4'[2-Pyridinyl methylene] Bisphenol	Ethyl Acetate	77.1 °C	20.00	19.60	98.0
		Methanol	64.7°C	8.00	7.68	96.0
34	Trans 4-Amino Cyclohexanol	Toluene	110.6°C	20.00	19.20	96.0
35	1-Ethyl-3-(3-Dimethylaminopropyl) Carbodimide Hydrochloride	Chloroform	61.2 °C	5.85	5.56	95.0
36	6 chloro-4- hydroxy- 2-methyl- 2H thieno [2,3-e] [1,2] thiazine- 3-carboxylate- 1,1-dioxide	Methanol	64.7°C	10.00	9.60	96.0
		Toluene	110.6°C	14.00	13.44	96.0
37	2-Amino 5-Methyl Thiazole	Toluene	110.6°C	20.00	19.20	96.0
39	3-(dimethylamino)-1-(3-methoxyphenyl) -2-methylpropan-1-one	IPA	82.5 °C	4.00	3.90	97.5
40	2-[(dimethylamino) methyl] cyclohexanone hydrochloride	IPA	82.5 °C	12.00	11.76	98.0
41	2-[2-(piperazin-1-yl) ethoxy] ethanol	Xylene	139 °C	4.00	3.90	97.5
42	11-Piperazinyl-dibenzo(b,f) (1,4)-thiazepine hydrochloride	Toluene	110.6°C	3.33	3.18	95.4
		N-Heptane	98.42 °C	1.33	1.28	96.0
		Acetone	56 °C	1.33	1.27	95.0
		IPA	82.5 °C	2.00	1.90	95.0
43	1-(3-Chlorophenyl) Piperazine	Toluene	110.6°C	2.00	1.92	96.0
44	1-(hydroxycyclohexyl)-(4-methoxyphenyl)acetone	Methanol	64.7°C	5.00	4.90	98.0
45	4,4,4-trifluoro-1-(4-methylphenyl) butane-1,3-dione	Ethanol	78.37°C	2.00	1.92	96.0
		Methanol	64.7°C	1.40	1.35	96.4
46	1-(4-methoxyphenyl) piperazine hydrochloride	Toluene	110.6°C	3.00	2.90	96.6
49	Cis- Tosylate	MDC	39.6 °C	3.43	3.26	95.0
		Ethyl acetate	77.1 °C	2.86	2.71	95.0
50	Valero Nitrile	DMSO	189 °C	18.00	17.10	95.0
51	5-(4'-Bromomethyl-1, 1'-Biphenyl-2-YL)-1-Triphenylmethyl-1H-Tetrazole (TTBB)	Toluene	110.6°C	12.60	12.16	96.4
		MDC	39.6 °C	15.00	14.47	96.4
		Methanol	64.7°C	7.80	7.57	97.0
		Ethyl acetate	77.1 °C	6.00	5.76	96.0
52	2-Butyl-4-Chloro-5-Formylimidazole (BCFI)	Methanol	64.7°C	2.00	1.92	96.0
53	Cis-bromo benzoate	Toluene	110.6°C	33.33	32.17	96.5

		n-Butanol	117.7 °C	10.00	9.75	97.5
54	2,2,4,-Trichloro Acetophenone	Toluene	110.6°C	4.17	4.04	97.0
55	3-Bromo-1-(3-chloro-phenyl)-propan-1-one	MDC	39.6 °C	12.00	11.52	96.0
56	5-Methyl-5-propyl-[1,3]dioxan-2-one	Toluene	110.6°C	12.00	11.52	96.0
		Methanol	64.7°C	16.00	15.36	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 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 three numbers of condensers where in the first condenser chilled water shall be used whereas in second and third condenser 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. 						
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"> 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
				Existing	Proposed	Total	
1.	Used Oil	Plant Machinery	5.1	2	0.0	2	Collection, Storage, Transportation and sold to authorized Recyclers.
2.	Empty barrels/containers/liners contaminated with hazardous chemicals/wastes	Raw Materials and Packaging	33.1	30	10	40	Collection, Storage, Transportation, Decontamination, reuse or send back to supplier, and sold to Authorized end users registered under rule-9.
3.	ETP Sludge	ETP	35.3	180	900	720	Collection, Storage, Transportation and sent to TSDF site. (Through GPS mounted vehicle)
4.	Distillation Residue	Process [1] N-Propyl Bromide [2] N-Butyl Bromide [3] 3,5 Xylenol [4] Crystal Violet and proposed product 12-14, 16-19,21,23-37,39-46,49-56	20.3	35	15	50	Collection, Storage, transportation and sent for co-processing in cement industries or disposal at common incineration at CHWIF. (Through GPS mounted vehicle)
5.	Spent Carbon Waste	Proposed product 13,14, 17,26	36.2	6	10.8	16.8	

6.	Spent Catalyst	Process [1] 3,5 Xylenol [2] Diethyl Meta Amino Phenol [3] Methyl Violet 2B /2B Liquid [5] Malachite Green Liquid and proposed product 30,34,53	26.5	246	10.4	25 6. 4	
7.	Spent Solvent [Mixed Solvent]	Process [1] 3,5 Xylenol [2] Crystal Violet and proposed product 12-14, 16-19,21,23-37,39-46,49-56	26.4	1183	523	17 06	Collection, Storage, distill in house and recycle for manufacturing of products or sell to authorize end users registered under rule-9.
8.	Process residue [Machelor's ketone]	Process	28.1	514.0	0.0	51 4	Collection, Storage, Transportation and sent to TSDf/CHWIF site.
9.	Sodium Bisulfite Sol.	Scrubber [1]N-Propyl Bromide [2]N-Butyl Bromide and proposed product 16,19,20,22	----	963	523	14 86	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
10.	Ammonium Sulphate Sol.	Scrubber [1] Auramine-O	----	3046	0.0	30 46	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
11.	Dimethyl Amine	Process [Diethyl Meta Amino Phenol]	----	144	0.0	14 4	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
12.	HCl Sol. [28-33%]	From Product No. 12-15,17-19,21,22,25-27,29,52,54	SCH-II- / B (15)	0.0	407	40 7	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
13.	Aluminium Chloride [35-40%]	Process Sr. No.54	---	0.0	167	16 7	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.

14	Sodium Bromide [NaBr] Sol. [30-40%]	From Product No. 18,21,24, 28,30,53,55	---	0.0	613	613	
15	Off-Specification Products	Products	28.4	0.0	20	20	Collection, storage, transportation and sent for co-processing in cement industries or disposal at common incineration at CHWIF.
16	Sodium Hypochlorite Solution	APCM Scrubber	--	0.0	40	40	Collection, storage and sent to ETP for further Treatment.
<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>1) Fly Ash generation: - Not Applicable 2) STP sludge generation: - Not Applicable</p> <p>Comments:</p>							
H	SAFETY details						
H-1	Details regarding storage of Hazardous chemicals						
-							
S. N.	Name of chemical	Quantity (Nos.)	Total (Nos.)	Total Qty. to be store			
Non-PESO Solution							
1	Sulphuric Acid	15 KL	1 Nos.	11.2 KL			
2	Hydrochloric Acid	15 KL	1 Nos.	10.62 KL			
3	Nitric acid	5 KL	1 Nos.	3.83 KL			
PESO Solution- Tank							
1	Methanol	8 KL	1 Nos.	5.8 KL			
2	Toluene	15 KL	1 Nos.	14 KL			
3	Acetic Acid	20 KL	1 Nos.	19.8 KL			
PESO Solution- Drum							
4	Acetone	250 Lit.	9 Nos.	2.3 KL			
5	DMF	250 Lit.	19 Nos.	4.7 KL			
6	Ethyl Acetate	250 Lit.	23 Nos.	5.8 KL			

7	IPA	250 Lit.	19 Nos.	4.7 KL
8	EDC	250 Lit.	24 Nos.	5.8 KL
9	Ethanol	250 Lit.	18 Nos.	4.4 KL
10	MDC	250 Lit.	16 Nos.	4 KL
11	Xylene	250 Lit.	19 Nos.	4.7 KL
Set of Cylinders and Bottles				
1	Ammonia	50 Kg	58 Nos.	2.9 m ³
2	Hydrogen	60 Kg	10 Nos.	0.6 m ³
3	Bromine	3 Kg.	1600 Nos.	4.8 MT

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	<ul style="list-style-type: none"> Materials have been Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Safety boards displayed on the tank. Effective ventilation must be provided. For accidental contact if you feel unwell, seek medical advice immediately. Handling of Acetone with Safety gloves and protective clothing
CORROSIVE& CHEMICALS	<ul style="list-style-type: none"> Stored out of direct sunlight and convenient height. Separate in storage from incompatible chemicals. Labeling is done. Removal of steam fumes and dust. 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 shall be stored under adequate safe condition. The storage of corrosive and toxic chemicals shall be segregated from each other. Smoking is prohibited inside the factory. Employees shall be properly trained for handling of toxic and corrosive chemicals. All pipe joints shall be provided with heavy duty gaskets to prevent any leakage. Self-breathing apparatus shall be provided and workers shall be trained about their use also. Spare barrels of sufficient quantity shall be kept ready for any emergency spillage or leakage. Drum trolley shall be used for the movement of drums of hazardous chemicals. Liquid chemicals shall be transferred by mechanical seal pump through closed pipeline.

Safety details....

- **Applicability of PESO:** Yes. Unit shall 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 shall 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
Bromination	<ul style="list-style-type: none"> ➤ All end nozzles in bromine charging hose shall be blinded after use. ➤ Charging of bromine shall be done when reactor is in vacuum and POP coated funnel shall be used during charging. ➤ Excess bromine shall 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 shall 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 shall be available. Exhaust hood has been provided to maintain to concentration of bromine vapor well below PEL. ➤ Work instructions for bromine charging shall be displayed in local language/Hindi. ➤ Safety shower and eye-wash fountains shall be available nearby handling and charging facility. The location of such item shall 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 shall 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 shall be used. ➤ Chemical safety goggles, face shields, SCBA sets, Aprons, rubber gloves, etc. ➤ Only trained employees handled bromine charging. Training shall be given to employees for bromine handling and charging.
Hydrogenation	<ul style="list-style-type: none"> ➤ DCS base process controls and operation of plant shall be installed. ➤ All electrical equipment's shall be installed as per Hazardous Area Classification.

	<ul style="list-style-type: none"> ➤ Total enclosed process system. ➤ Instrument & Plant Air System. ➤ Nitrogen blanketing in Hydrogenation reactor. ➤ Emergency dumping vessel shall 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 shall 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 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 displayed and operators shall be trained for the same. ➤ Static earthing and electric earthing (Double) shall be provided. ➤ Jumpers for static earthing on pipeline flanges of flammable chemical shall be provided. ➤ Hydrogen gas detector shall be installed for early detection of gas leak. 																		
Chlorination Process safety measures: (Chlorine Gas)	<ul style="list-style-type: none"> ➤ Not Applicable 																		
H-3	Details of Fire Load Calculation																		
<table border="1"> <tr> <td>Total Plot Area:</td> <td>4625 M2</td> </tr> <tr> <td>Area utilized for plant activity:</td> <td>2250 M2</td> </tr> <tr> <td>Area utilized for Hazardous Chemicals Storage:</td> <td>1480 M2</td> </tr> <tr> <td>Number of Floors:</td> <td>G+2</td> </tr> <tr> <td>Water requirement for firefighting in KLD:</td> <td>100.0 KL</td> </tr> <tr> <td>Water storage tank provided for firefighting in KLD:</td> <td>100.0 KL</td> </tr> <tr> <td>Details of Hydrant Pumps:</td> <td>30</td> </tr> <tr> <td>Nearest Fire Station :</td> <td>2-3 Km</td> </tr> <tr> <td>Applicability of Off Site Emergency Plan:</td> <td>Yes</td> </tr> </table>		Total Plot Area:	4625 M2	Area utilized for plant activity:	2250 M2	Area utilized for Hazardous Chemicals Storage:	1480 M2	Number of Floors:	G+2	Water requirement for firefighting in KLD:	100.0 KL	Water storage tank provided for firefighting in KLD:	100.0 KL	Details of Hydrant Pumps:	30	Nearest Fire Station :	2-3 Km	Applicability of Off Site Emergency Plan:	Yes
Total Plot Area:	4625 M2																		
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Nearest Fire Station :	2-3 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 250 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:	30
Number of Contractual person/Labour:	40
Area provided for OHC:	50 M ²
Number of First Aid Boxes:	10
Nearest General Hospital:	10-12 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 Crores)	Total Recurring Cost (Rs. In Crores)
1	Waste Water	Construction cost of ETP [ETP I [P+S+T] + ETP II [P]] + Disposal to Jhagadia Pipeline NCT + Disposal cost to CMEE + Maintenance cost of ETP	1.0	5.19
2	Air	Installation Cost of Boiler (2 nos.) + TFH (1 no.) + DG Set, and stack + 3 Nos. of Scrubbers and stack + APCM for flue gas emission + Process Gas Emission + Maintenance cost	0.35	0.20
3	Hazardous Management	Membership cost of TSDF + Construction of Hazardous waste storage yard + Cost for TSDF disposal + Co-processing Waste+ incineration disposal	0.26	0.50
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 PLC Based SCADA System for Hydrogenation, Bromination, Amination process and Distillation Process + Monitoring cost of 3 rd party Cost of Fire Extinguisher, Cost of Fire Trolley (Total 5	0.73	0.5

		Nos), Cost of Fire Proximity Suit (Total 3) + Cost of Fire hydrant line + Cost of all pumps		
5	Green Belt Development	33% of the plant area shall be developed as greenbelt.	0.03	0.01
6	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. Cost of Dr. Visit per visit: - 2500/-	0.15	0.12
7	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	0.32	0.045
8	CER Funds	CER activity in nearby village	--	0.04
Total			2.84	6.785

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. 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
- 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

10. Total water requirement for the project shall not exceed 106 KLD. Unit shall reuse 12.5 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 93.5 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 87.50 KLD.
12. Management of Industrial effluent shall be as under:
- ✓ 5.06 KLD High COD Effluent generated from process section shall be collected and treated into ETP-II [Primary] and then send to CMEE system for further treatment.
 - ✓ 82.44 Low COD Effluent generated from utilities, washing, process section shall be mixed with 2.5 KLD effluent generated from domestic section hence total 84.94 KLD effluent treated into ETP-I [Primary + Secondary + Tertiary] treatment plant and after adequate treatment effluent send to Jhagadia pipeline project of NCT Project for further disposal.
 - ✓ Unit shall send waste water to Common MEE and NCTL Jhagadia pipeline 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 2.5 KL/Day for proposed project and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
- Unit shall provide STP and 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 and maintain records for the same.
16. Proper logbooks of ETP; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

17. Unit shall not exceed fuel consumption for Steam Boiler[2 Nos], 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, 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. 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 (1526 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:

31. The project proponent shall carry out the entire activities [Installation of solar street lights and RO Purifier at 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.

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 shall not mean that appointing a key person shall 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/IND3/60950/2021	M/s. Zydec Industries Plot No.:326, Talod GIDC, Taluka: Talod, District: Sabarkantha Gujarat - 383215, India	EC
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Category of the unit: **5 (f)**

Project status: **New**

1) DETAILS OF APPLICATION:

1.1. Type of application:	EC-Fresh
1.2. Proposal no.	SIA/GJ/IND3/60950/2021
1.3. Category of Project:	5 (f) – B1
1.4. Date of application:	28.02.2022
1.5. Documents Submitted by Project Proponent(PP)	EIA report, Form-2, EMP
1.6. TOR No. & Date:	SIA/GJ/33602/2021, Date: 24 February 2021.
1.7. Date of Public hearing	Not applicable
1.8. Technical expert / Environmental Consultant:	M/s. T. R. Associates
1.9. SEAC Meeting No. and Date:	399 th meeting dated 11.04.2022
1.10. Compliance of Existing EC & CCA	Not Applicable

2) This is an proposed unit of manufacturing of synthetic organic chemicals as mentioned below:

Product Table

Sr. No.	Name of Product	Capacity (MT/Month)	CAS No.	End-use of Product
1	Different grades of Acrylic Polymers (Grade 1, Grade 2, Grade 3 and Grade 4)	400	9063-87-0	Textile, paint Industries and Industrial coating

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 11.04.2022.
- 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) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period October 2021 – December 2021. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx, NOx, VOCs and CO at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using “AERMOD 10.0.1”. Incremental GLC’s for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site shall remain within the National Ambient Air Quality Standards (NAAQS).
- 8) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
- 9) Committee asked to submit the following:
 - ✓ Revise the domestic wastewater treatment from soak pit to STP.
- 10) Later on PP submitted following details through email on dated 11/04/2022
 - ✓ PP has changed the domestic wastewater treatment from soak pit to STP as per SEAC members suggested.
- 11) Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
- 12) Compliance of the ToR found satisfactory.
- 13) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details
A-1	Project cost	
Total cost of Proposed Project (Rs. in Crores):		
Total Project		
Rs. 1.1386 Crores		

Break-up of proposed project Cost:

Details	Project Cost (Rs. In Crores)
Land	0.10
Building	0.35
Machinery	0.40
Env. & Safety	0.2886
Miscellaneous	
Total	1.1386

A-2 Details of CER -

PP shall carry out CER activities as below:

- ✓ Unit shall provide drinking water facility in Provision of drinking water facilities in schools and Solar street light facility.

B Land / Plot ownership details:

- ✓ Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/AHM/TRF/PTO/TAL1/28 on dated 26/06/2019 has been obtained in name of M/s. Zydec Industries.

B-1 Plot area

Total Plot area
1045 Sq. m.

B-2 Area adequacy

Area Adequacy table:

Sr. No	Particulars	Area (in Sq. mt.)	% of Total Area
1	Process area	87.00	8.33
2	RM and FG store	243.60	23.31
3	SHW storage area	38.51	3.69
4	ETP & MEE	16.50	1.58
5	Utility area	16.50	1.58
6	OHC	15	1.44
7	Security cabin	9	0.86
8	Greenbelt area	372.16	35.61
9	Open/Road area	246.73	23.61
	Total Area	1045	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	372.16
% of total area	35.61

Comments:

The condition shall be given that -

- The PP shall develop green belt (372.16 Sq. m i.e. 35.61% 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
-	6

D WATER

D-1 Source of Water Supply

- Unit shall procure water from Talod GIDC via letter number GIDC/RM/AHM/TRF/FTO/TAL1/25 on dated 08/08/2019

Comments:

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

D-2 Water consumption (KLD)

Category	Quantity KLD	Remarks
(A) Domestic	0.5	Fresh
(B) Gardening	0.69 kld (0.46 kld from STP+0.23 KLD fresh)	Fresh +Reuse
(C) Industrial		

Process	14.56	Fresh +Reuse
Washing	0.3	Fresh +Reuse
Boiler	0.5	Fresh +Reuse
Cooling	1.02	Fresh +Reuse
Others (Scrubber)	0.1	Fresh +Reuse
Industrial Total	20.24	16.8 Fresh+3.44 Reuse
Grand Total (A+B+C)	21.43	17.53 Fresh+3.9 Reuse

-
Comments:

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

D-3 Waste water generation (KLD)

Category	Waste water KLD	Remarks
(A) Domestic	0.47	To STP
(B) Industrial		
RO reject	3.76	To ETP
Washing	0.3	To ETP
Boiler	0.05	To ETP
Cooling	0.1	To ETP
Others (Scrubber)	0.1	To ETP
Total Industrial waste water	4.31	
Total [A + B]	4.78	

-
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)

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

Comments:

- Domestic wastewater generation shall not exceed 0.47 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/

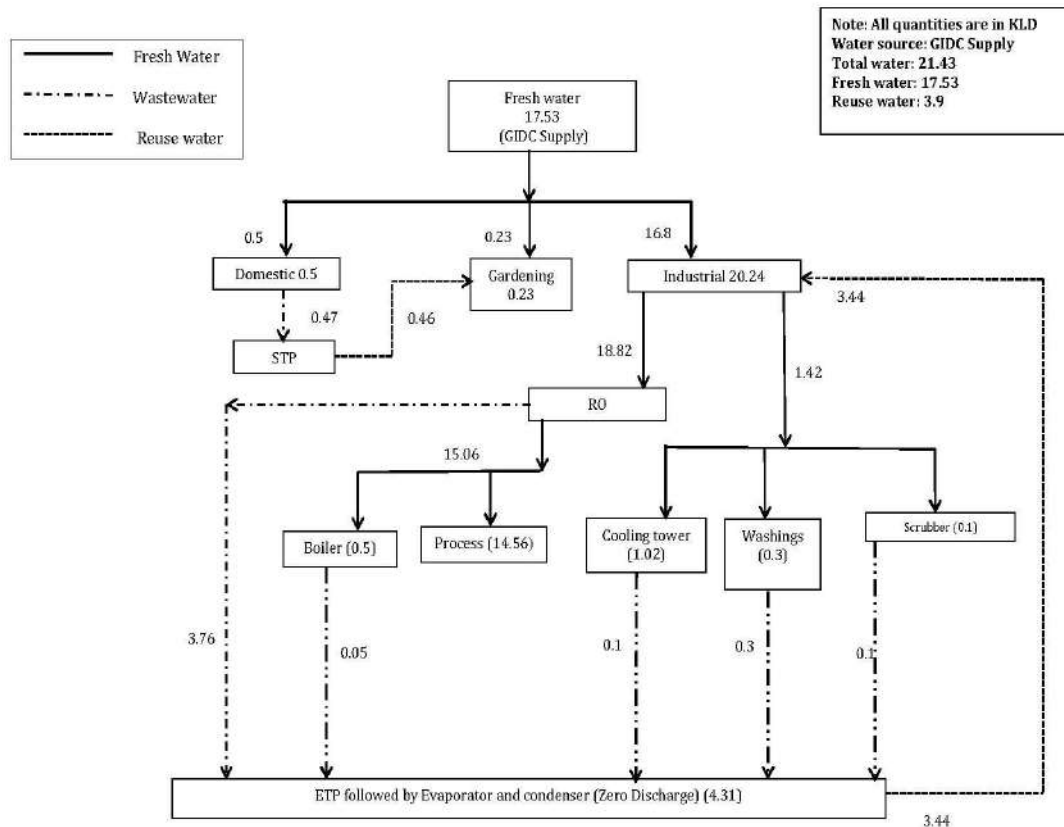
septic tank. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.

- Unit shall provide STP with adequate capacity.

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

Sr. no.	Quantity KLD	Facility
1	3.76	RO reject wastewater shall be treated in in-house ETP
2	0.05	Boiler blow down wastewater shall be treated in in-house ETP
3	0.1	Cooling tower blow down wastewater shall be treated in in-house ETP
4	0.3	Washing wastewater shall be treated in in-house ETP
5	0.1	Scrubber wastewater shall be treated in in-house ETP
Total	4.31	
Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)		
Not Applicable as ZLD		

D-5b Simplified water balance diagram



D-5c Summary

	Summary of water requirement	Quantity KLD	Remarks			
	Total water requirement for the project (A)	21.43				
	Quantity to be recycled (B)	3.9	Treated water from STP shall be reused for gardening purpose and Treated water from ETP shall be reused for Industrial purpose			
	Total fresh water requirement (C)	17.53				
	Ensure Total water requirement = Recycled water + Fresh water i.e. A = B + C					
<u>Comments:</u>						
1. Total Water Requirement for The Project Shall Not Exceed 21.43kld. Unit Shall Reuse 3.9 KLD of Treated Industrial Effluent Within Premises. Hence, Fresh Water Requirement Shall Not Exceed 17.53 KLD and It Shall Be Met Through GIDC Water Supply Only. Prior Permission from Concerned Authority for Withdrawal Of Water Shall Be Obtained.						
2. Management Of Industrial Effluent Shall Be as Under:						
✓ Total 4.31 KLD of Wastewater Shall Be Generated from Ro Reject, Floor Washings, Boiler Blow Down, Cooling Tower Blow Down and Scrubber.						
✓ Wastewater From Scrubber and Washing Shall Be Collected in Collection Cum Neutralization Tank and It Shall Be Neutralized.						
✓ Wastewater From Boiler Blow Down, Cooling Tower Blow Down and Ro Reject Shall Be Collected in Holding Tank and It Would Be Further Treated.						
✓ Effluent From Collection Tank Shall Be Treated in Nutsche Filter and Filtrate Would Be Sent to Holding Tank.						
✓ The Wastewater from Holding Tank Shall Be Evaporated to Achieve ZLD.						
3. Unit Shall Provide STP and ETP with Adequate Capacity.						
4. The Pp Shall Ensure to Dispose Off Waste Water to The Common Facilities Having Valid CTO Of GPCB.						
E	AIR					
E-1	Power (Electricity) requirement : 50 KVA					
E-2	Flue gas emission details					
-						
Sr . n o.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantit y of Fuel MT/ Day	Type of emission s i.e. Air Pollutant s	Air Pollution Control Measures (APCM)
5.	Steam Boiler (0.5 TPH)	30 m	Agro Waste	0.49 MT/D	SPM SO ₂	Multicyclone seprator

					NO ₂	
6.	D.G. Set (1X100 KVA)	11 m	Diesel	(20 Lit/hr)	SPM SO ₂	Stack height 11 m

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 Reactor (total 2 reactors) for (acrylic polymer grade 2)	Acid fumes	11	Dual stage scrubbing system (water media followed by alkaline media)

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

- Fugitive emissions are expected to be generated during construction and operational stages of the project. During construction stage, main source of fugitive emission is dust which is expected mainly due to the movement of vehicles carrying construction material and vehicles used for construction.
- During operation stage, leakage through valves, pumps, emission from open Drum containing chemicals, etc. are the major sources of fugitive emissions of organic chemicals and VOCs. Following measures shall be adopted to prevent and control fugitive emissions:
- All the raw materials shall be stored in isolated storage area and containers shall be kept tightly closed.
- 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 major pipe lines shall be covered with flange guards.
- The spillages / leakages of specific chemical shall be collected and use or it shall be drained to effluent treatment plant.
- Precautionary measures shall be taken while handling various hazardous chemicals.
- There shall also provision of adequate ventilation system in process plant and hazardous chemical storage area.
- A regular preventive maintenance shall be planned to replace or rectify all gaskets, joints etc.
- 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.
- Moreover, Unit shall carry out regular work place monitoring.

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.

Not applicable as there is no use of solvent in proposed synthetic organic chemicals manufacturing unit.

F-2 VOC emission sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- The entire manufacturing activities 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.
- 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.

Components	Average quantity	Average Uncontrolled VOC Emissions (ton/year)	Percentage of total emission	Preventive Measures
Pumps	5	0.95	37.29	<ul style="list-style-type: none"> ➤ Use Seal less design ➤ Use Dual mechanical seal with barrier fluid maintained at a higher pressure than the pumped fluid

					<ul style="list-style-type: none"> ➤ Provide Closed-vent system ➤ Use Spare pumps at the time of repair. ➤ Tightening the packing glands ➤ The pump should be flushed of VOC as much as possible before opening seal replacement.
	Valves	10	0.55	21.64	<ul style="list-style-type: none"> ➤ Use Seal less 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	25	0.42	16.44	<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	3	0.05	1.89	<ul style="list-style-type: none"> ➤ Use of Blind, cap, plug, or second valve shall make 100% Control Over Leakage
	Sampling Connections	3	0.41	16.19	<ul style="list-style-type: none"> ➤ Provide Closed-loop sampling
	Pressure relief valves	3	0.17	6.54	<ul style="list-style-type: none"> ➤ Use of Rupture disk assembly shall make 100% Control Over Leakage
F-3	LDAR proposed:				
	<ul style="list-style-type: none"> • 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. 				

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.	Discarded Containers	RM storage	33.1	51.23	Collection, storage and decontamination or Reuse within premises/ sell to approved reprocesses.
2.	ETP Sludge	ETP	35.3	25.86	Collection, storage and Disposal at TSDF Site
3.	Evaporation Residue	Evaporator	35.3	6.25	Collection, storage and disposal at Approved TSDF site
4.	Used oil / Spent Oil	Machineries	5.1	0.1	Collection, storage and use within premises as a lubricant/ sell to registered recycler
5.	Bleed liquor	Scrubber	35.1	30	Collect, Storage and send to in-house 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

- ✓ Fly Ash generation shall be 10 MTPA.
- ✓ STP sludge generation shall be 3 MTPA

Comments:

- Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.
- STP sludge shall be collected and used as manure in gardening activity or send to TSDf site for landfilling.

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

- **Brief note on Storage of Hazardous chemicals in Drum and HDPE bags.**
- 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

Details regarding storage of Hazardous chemicals

Name of major Hazardous chemicals	Storage details
Drum Storage	
Acrylic Acid*	Drum
Acrylic Sulfonate	Drum
Acrylamide*	Drum
PEG	Drum
Sulphuric acid*	Drum
Formalin*	Drum
Dadmac	Drum
Methyl Propenoic acid	Drum
Ethyl Acrylate	Drum
Methyl Methacrylate*	Drum
Bags Storage	
Caustic Soda*	HDPE Bag
Maleic Anhydride*	HDPE Bag
Chain initiator and additive	HDPE Bag
cyanamide dimer	HDPE Bag
Diamine	HDPE Bag
Ammonium chloride	HDPE Bag
Surfactant	HDPE Bag

-

Safety details....

- **Applicability of PESO:** Not applicable

Comments:

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

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

Not applicable as there is no any hazardous process involved.

H-3 | Details of Fire Load Calculation

Total Plot Area:	1045 m ²
Area utilized for plant activity:	426.11 m ²
Area utilized for Hazardous Chemicals Storage:	487.20 m ² (G+1)
Number of Floors:	1
Water requirement for firefighting in KLD:	1.951
Water storage tank provided for firefighting in KLD:	150
Details of Hydrant Pumps:	Jockey Pump and Electrical and diesel pump
Nearest Fire Station:	24.57 km in North Direction in Himmatnagar
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 **150 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:	6
Number of Contractual person/Labour:	0

Area provided for OHC:	15 m2
Number of First Aid Boxes:	6
Nearest General Hospital:	Talod Civil Hospital 3.18 Km in SE 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	Cost of ETP, STP, Evaporator	0.0525	0.15
2	Air	APCM	0.045	0.0529
3	Hazardous Management	Cost of Storage area and membership charges	0.007	0.0067
4	Fire & Safety and Occupational Health	Fire hydrant system, Safety systems etc.	0.1373	0.005
5	Green Belt Development	Greenbelt development	0.0055	0.02
6	Noise Control	sound enclosures	0.0012	0.0014
7	CER	RO facility and renewable energy facility	0.0226	0
8	Miscellaneous	Miscellaneous	0.0175	0.10
Total			0.2886	0.336

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. Unit shall install CEMS [**Continuous Emission Monitoring System**] in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. [**For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable**].
2. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
3. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
4. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.

5. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
6. All measures shall be taken to avoid soil and ground water contamination within premises.

7. Safety & Health:

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

WATER

8. Total water requirement for the project shall not exceed 21.43 KLD. Unit shall reuse 3.9 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 17.53 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
9. The industrial effluent generation from the project shall not exceed 4.31 KLD.
10. Management of Industrial effluent shall be as under:

- ✓ Total 4.31 KLD Of Wastewater Shall Be Generated from Ro Reject, Floor Washings, Boiler Blow Down, Cooling Tower Blow Down and Scrubber.
- ✓ Wastewater From Scrubber and Washing Shall Be Collected in Collection Cum Neutralization Tank and It Shall Be Neutralized.
- ✓ Wastewater From Boiler Blow Down, Cooling Tower Blow Down and Ro Reject Shall Be Collected in Holding Tank and It Would Be Further Treated.
- ✓ Effluent From Collection Tank Shall Be Treated in Nutsche Filter and Filtrate Shall Be Sent to Holding Tank.
- ✓ The Wastewater from Holding Tank Shall Be Evaporated to Achieve ZLD.

11. 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 0.5KL/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.
13. 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.
14. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
15. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
16. Proper logbooks of ETP; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

17. Unit shall not exceed fuel consumption for 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. PP shall use approved fuels only as fuel in boilers.
21. The fugitive emission in the workzoneenvironment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities fromtime to time (e.g. Directors of IndustrialSafety& Health). Following indicativeguidelines shall also be followed to reducethe fugitive emission.
 - Internal roads shall be either concreted or asphalted or paved properly to reducethe 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 vapor 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 and NO_x 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 within premises (372.16 Sq. m i.e. 35.61 % 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 activities (Drinking water treatment facility and Solar street light in school) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
33. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. T. R. Associates and submitted by the project proponent and commitments made during presentation before SEAC and proposed in the EIA report shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

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 shall not mean that appointing a key person shall 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/IND3/67979/2021	M/s. Vertious Chemicals Plot No. 290, 291, 294, 295, Ranasan GIDC, Ta: Vijapur, Dist: Mehsana-382870, Gujarat	EC
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Category of the unit: **5 (f)**

Project status: **New**

1) DETAILS OF APPLICATION:

1.1. Type of application:	EC-New
1.2. Proposal no.	SIA/GJ/IND3/67979/2021
1.3. Category of Project:	5 (f) – B1
1.4. Date of application:	16.03.2022
1.5. Documents Submitted by Project Proponent(PP)	EIA report, Form-2, EMP
1.6. TOR No. & Date:	SIA/GJ/189109/2021, dated 29.09.2021
1.7. Date of Public hearing	Not applicable
1.8. Technical expert / Environmental Consultant:	M/s. Excel Enviro Tech
1.9. SEAC Meeting No. and Date:	399 th meeting dated 11.04.2022
1.10. Compliance of Existing EC & CCA	Not Applicable

2) This is an existing unit and now proposed for expansion in manufacturing of synthetic organic chemicals as mentioned below:

product table

Sr. No.	Name of Product	CAS No.	Total Quantity (MT/Month)	End Uses
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1	Para Nitro Toluene Ortho Sulphonic Acid (P.N.T.O.S.A)	121-03-09	250	Raw Material of S.O. dyes
Total			250	

- 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 11.04.2022.
- 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) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period November-2018 to January-2019. Ambient Air Quality monitoring was carried out for PM10, PM2.5, SOx, NOx and VOCs at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site shall remain within the National Ambient Air Quality Standards (NAAQS).
- 8) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
- 9) Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
- 10) Compliance of the ToR found satisfactory.
- 11) PP presented salient features of the project including Water, Air and Hazardous waste management are 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. 2.3 Crores</td> </tr> </table>			Total Project	Rs. 2.3 Crores
Total Project				
Rs. 2.3 Crores				
Break-up of proposed project Cost:				

		Details	Project Cost (Rs. In Crores)		
		Land	1		
		Building	0.25		
		Machinery	0.264		
		Env. & Safety	0.786		
		Miscellaneous	--		
		Total	2.3		
-					
A-2	Details of CER -				
PP shall carry out CER activities as below:					
No	Area	CER –Proposed planned Activities	Yearly Budgetary Provision (Rs)	Time Frame	
1	Environment	Tree Plantation at suitable common areas	60,000/-	July 2022 to December 2022	
		Distribution of Tree Guards	2,00,000/-	July 2022 to December 2022	
		Provision of Solar Panels in schools	2,00,000/-	March 2023 to December 2024	
Total			4,60,000/-		
B	Land / Plot ownership details:				
Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/MEH/TRF/FTO/RAN/54.					
(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;">2000 Sq. m.</td> </tr> </table>				Total Plot area	2000 Sq. m.
Total Plot area					
2000 Sq. m.					
-					
B-2	Area adequacy				
Area Adequacy table:					
Sr. No.	Description of Area	Approx. Area (m ²)	Area (%)		
1	Office	28.28	1.4		
2	Lab	21.35	1.1		
3	Process Area (Existing Shed)	153.7	7.7		
4	Proposed Shed	156.14	7.8		
5	Raw Material Storage	66.4	3.3		
6	F.G. Storage	43.1	2.2		
7	Hazardous Waste Storage	62.34	3.1		
8	ETP Area	30	1.5		
9	Boiler & DG Set	82.4	4.1		
10	Tank Area	211.26	10.6		
11	Store Room	26.96	1.3		

12	Security Cabin	9	0.5
13	OHC	20	1
14	Greenbelt Area	660	33.0
15	Road & Open Area	429.07	21.5
	TOTAL	2000.00	100

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

Comments:

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

B-3 Green belt area

	Total (Sq. meter)
Area in Sq. meter	660
% of total area	33%

Comments:

The condition shall be given that -

- The PP shall develop green belt (660 Sq. m i.e. 33 % of the total plot area) as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

C Employment

Employment generation

	Total
	25

D WATER

D-1 Source of Water Supply

- Ranasan GIDC

Comments:

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

water.

D-2 Water consumption (KLD)

-

Category	Quantity KLD
(J) Domestic	2.0
(K) Gardening	1.8
(L) Industrial	
Process	2.98
Washing	0.2
Boiler	1.0
Cooling	1.0
Others (Scrubber)	1.0
Industrial Total	6.18
Grand Total (A+B+C)	9.98

-

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	1.8
(H) Industrial	
Process	8.56 spent Acid
Washing	0.15
Boiler	0.1
Cooling	0.1
Others (Scrubber)	0.45
Total Industrial waste water	9.36
Total [A + B]	11.16

-

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)

1.8 KLD Domestic Waste Water shall be treated in STP & treated wastewater shall be

reused in gardening purpose within premises.

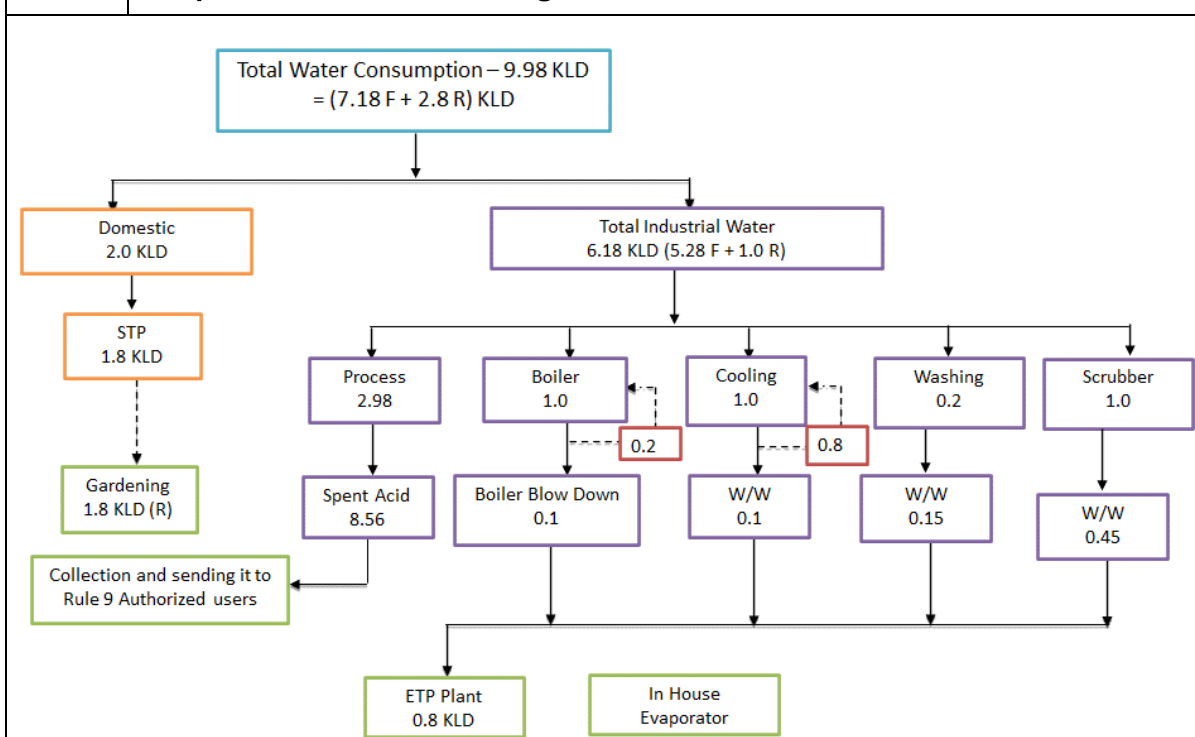
Comments:

- Domestic wastewater generation shall not exceed 1.8 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	0.8	Treated in ETP and sent to Evaporator
2	8.56	Send to Rule-9 Authorized users.
Total	9.36	--
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)	9.98	--
Quantity to be recycled (B)	2.8	--

	Total fresh water requirement (C)	7.18	--				
	Ensure Total water requirement = Recycled water + Fresh water i.e. A = B + C						
Comments:							
<p>1. Total water requirement for the project shall not exceed 9.98 KLD. Unit shall reuse 1.0 KLD of treated industrial effluent within premises and 1.8 KLD from STP shall be reused in Gardening. Hence, fresh water requirement shall not exceed 7.18 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.</p> <p>2. Management of Industrial effluent shall be as under: ✓ 0.8 KLD Waste water shall be treated in ETP & sent to Evaporator.</p> <p>3. Unit shall provide STP and ETP with adequate capacity.</p> <p>4. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.</p>							
E	AIR						
E-1	Power (Electricity) requirement: 50 KW						
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.	Steam Boiler (1 TPH)	30 m	Briquettes/Agro waste/DOC	0.8 T/day	PM, SO ₂ , Nox	Multi cyclone + Scrubber
	2	D G Set (125 KVA)	9 m	Diesel	15 lit/hour	PM, SO ₂ , Nox	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 – 2 (P.N.T.S.O - Sulphonation)	SO ₂	15 m	Two stage Water Scrubber		
-							
E-4	Fugitive emission details with its mitigation measures.						

	<ul style="list-style-type: none"> - Regular sprinkling of water, pacca road shall be constructed & green belt shall be provided within premises to prevent fugitive emissions due to vehicular movement. Regular maintenance of vehicles. - Management to ensure proper handling of the spillages during transfer, charging operation and provision of a Dust Collection System for collection of the air borne material wherever applicable. - Preventive maintenance of flange connections and glands of pumps. - Management shall also ensure proper usage of the Personnel Protective Equipment by the workers. - Closed handling system shall be provided for chemicals. - Relux condenser to be provided over the reactor. - The acids shall be taken from storage tanks to reactor through closed pipeline. Storage tanks shall be vented through trap receiver and condenser operated on chilled water. - Fugitive emissions in the work zone environment, product raw material storage area shall be monitored regularly 	
	<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. 	
F	Solvent management, VOC emissions etc.	
F-1	Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.	
	Not Applicable, There is no use of solvent with in premises.	
F-2	VOC emission sources and its mitigation measures	
	<ul style="list-style-type: none"> ▪ Management to ensure proper handling of the spillages during transfer, charging operation and provision of a Dust Collection System for collection of the air borne material wherever applicable. ▪ Preventive maintenance of flange connections and glands of pumps. ▪ Management shall also ensure proper usage of the Personnel Protective Equipment by the workers. ▪ Regular Work Place Monitoring, Ambient Air, Stack Air Monitoring to be done. ▪ Proper identification on discharge line. ▪ Providing arrangements to avoid static sparks. ▪ Take care of adverse weather conditions. ▪ Providing Explosion Vents in spaces with possibility of air-vapour mixtures. ▪ Smoke detectors or heat detectors to be provided in storage or process area. - 	
F-3	LDAR proposed:	
	Not Applicable, There is no use of solvent with in premises. -	
	<p><u>Comments:</u></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.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules.	Quantity (MT/year)	Management of HW
1.	Discarded Containers	From Raw Material Consumption	33.1	2.0	Collection storage, transportation, disposal to registered recyclers or reuse within the premises.
2.	Inorganic Acid (Spent Sulphuric Acid)	Manufacturing of PNTOSA	Sch. II Cat. No.- 26.3	3441	Collection, Storage, Transportation to actual user having Rule-9 permission
3.	Used Oil	Machinery	5.1	0.01	Collection storage, transportation, disposal to registered recyclers or reuse within the premises.
4.	ETP sludge & Evaporation residue	ETP	35.3	0.5	Collection, Storage and disposed off to TSDF

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

- ✓ Fly Ash generation shall be 0.6 MTPA.
- ✓ STP sludge generation shall be 0.108 MTPA

Comments:

- Management of fly ash shall be as per the Fly ash Notification 2009 & its

amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit.

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

H SAFETY details

H-1 Details regarding storage of Hazardous chemicals

-
-

Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
1	Oleum (23%)	25 MT	02	Corrosive, strong oxidant, Flammable
2	Spent Acid	HDPE Tanks	01	Extremely Corrosive

Storage of Hazardous chemicals in Tanks

- Dyke shall be provided to storage tank to collect leakage/spillage
- Provision of Static Earthing
- Fire Extinguisher/Fire Hydrant System
- Lighting /Proper Illumination
- Lightening arrestor
- Trained and experience operators
- Label capacity and content should display on storage tank
- Overflow line shall returned to the storage tank or pump on-off switch provide near day tank.
- Use SOP
- Prohibition of Unauthorized person
- Provision of PPEs
- Separation distance shall be maintained

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

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

Safety details of Hazardous Chemicals:

Type of hazardous chemical	Type of Hazardous Chemicals	Safety measures
Oleum	Toxicity, Reactivity	<ul style="list-style-type: none"> ➤ Barrel Must Be Labeled ➤ Heat/Spark, Flame, Wear PPE And Self Contain Breathing Apparatus ➤ Containers and equipment used for storage and processing of corrosive material shall be corrosion resistant ➤ Avoid Leakages, Barrel Tightly Closed, Ground/Bond Barrel and Receiving Equipment ➤ Use Non-Sparking Tools and Equipment, ➤ Precaution Measure Against Static Discharge ➤ Explosion Proof Electrical Lighting ➤ Use Water Spray, Dry Chemical, Foam, Co2 Based Fire Extinguisher, Sand Bucket Must Be Provided ➤ Do Not Flush To Sewer

- **Applicability of PESO:** Yes. Unit shall 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 shall 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:**Details ...****H-3 Details of Fire Load Calculation**

Total Plot Area:	2000 Sq. m
Area utilized for plant activity:	832 sq. m
Area utilized for Hazardous Chemicals Storage:	62.34 sq.m
Number of Floors:	1
Water requirement for firefighting in KLD:	10

Water storage tank provided for firefighting in KLD:		50				
Details of Hydrant Pumps:		Electrical Pump-01-20 m ³ /hr Jockey Pump-01 -10 m ³ /hr Diesel Pump-01 – 10 m ³ /hr				
Nearest Fire Station:		Mansa Fire Station at 12.6 km				
Applicability of Off Site Emergency Plan:		NA				
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 50 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:		10				
Number of Contractual person/Labour:		15				
Area provided for OHC:		20 sq.m				
Number of First Aid Boxes:		10				
Nearest General Hospital:		Referral Hospital & Community Health Centre Vijapur @5.83 km				
Name of Antidotes to be store in plant:		Milk of Magnesia 4% Sodium Hydro Carbonate Solution Milk – Antidote for Oleum				
-						
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)	Operating Cost (Rs. In Crore)	Maintenance Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)
1	Waste Water	Effluent Treatment Plant + Evaporator	0.05	0.005	0.005	0.01
2	Air	Installation of APCM (Multi cyclone, Scrubber), Stack.	0.21	0.005	0.004	0.009
3	Hazardous Management	Storage and membership	0.1	0.0018	0.0005	0.0023

4	Fire & Safety	Fire hydrant system, Extinguishers, water sprinkler	0.25	0.06	0.04	0.1
5	AWH Monitoring	Outsourced and environmental compliances	0.01	0.003	0	0.003
6	Green Belt Development	--	0.04	0.002	0.003	0.005
7	Occupational Health	OHC Centre, first aid kits and tie up with doctor	0.05	0.003	0.002	0.005
8	Process automation	PLC based system in reactor and vessels	0.03	0.005	0.005	0.01
9	CER	As per activity list	0.046	0	0	0
Total			78.6	8.48	5.95	14.43

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) DELIBRATION AND RECOMMENDATION:

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

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

- a. "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades.
- b. "No uncovered vehicles carrying construction material and waste shall be permitted."
- c. "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured."

- d. Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).
- e. No excavation of soil shall be carried out without adequate dust mitigation measures in place.
- f. Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.
- g. Grinding and cutting of building materials in open area shall be prohibited.
- h. Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.
- i. Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. Unit shall install CEMS [**Continuous Emission Monitoring System**] in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. [**For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable**].
2. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
3. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
4. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
5. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
6. All measures shall be taken to avoid soil and ground water contamination within premises.
7. **Safety & Health:**
 - a. PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
 - b. PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
 - c. PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
 - d. Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
 - e. PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
 - f. PP shall install adequate fire hydrant system with foam trolley attachment within premises and

separate storage of water for the same shall be ensured by PP.

- g. PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
- h. PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
- i. Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
- j. Unit shall provide Spare Tank for Oleum Storage.
- 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

8. Total water requirement for the project shall not exceed 9.98 KLD. Unit shall reuse 1.0 KLD of treated industrial effluent within premises and 1.8 KLD from STP shall be reused in Gardening. Hence, fresh water requirement shall not exceed 7.18 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
9. The industrial effluent generation from the project shall not exceed 0.8KLD.
10. Management of Industrial effluent shall be as under:
 - ✓ 0.8 KLD Waste water from Industrial activity shall be treated in ETP and then Evaporated in Evaporator.
 - ✓ Unit shall send waste water to in-house 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.
11. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
12. 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:

13. Unit shall not exceed fuel consumption for Steam Boilerrand D G Set as per the point no. E-2 as mentioned above.
14. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
15. Unit shall provide adequate APCM with process gas generation sources as the point no. **E-3** as mentioned above.
16. PP shall use approved fuels only as fuel in boilers.
17. The fugitive emission in the workzoneenvironment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities fromtime 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.

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

19. 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.

20. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, 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:

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

22. 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.

23. 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.

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

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

GREENBELT AREA

26. The PP shall develop green belt within premises (660 Sq. m i.e. 33.0 % 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:

27. The project proponent shall carry out the activities (Tree Plantation at suitable common areas, Distribution of Tree Guards, Provision of Solar Panels in schools) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.

28. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Excel Enviro Tech and submitted by the project proponent and commitments made during presentation before SEAC and proposed In the EIA report shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

29. 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.

30. 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 shall not mean that appointing a key person shall exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.

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

32. 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.

33. 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.

34. 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.

35. 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/IND3/68165/2003	M/s. Nuchem Dyestuff Plot No.6, Phase IV, GIDC - Vatva, Ahmedabad-382445 ,Gujarat	EC
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Category of the unit: **5 (f)**

Project status: **Expansion**

1) DETAILS OF APPLICATION:

1.1. Type of application:	EC-Expansion
1.2. Proposal no.	SIA/GJ/IND3/68165/2003
1.3. Category of Project:	5 (f) – B1
1.4. Date of application:	23.10.2021
1.5. Documents Submitted by Project Proponent(PP)	EIA report, Form-2, EMP
1.6. TOR No. & Date:	SIA/GJ/IND3/58222/2020, Date: 03 Sep 2021.
1.7. Date of Public hearing	Not applicable
1.8. Technical expert / Environmental Consultant:	M/s. Green Circle INC.
1.9. SEAC Meeting No. and Date:	399 th meeting dated 11.04.2022
1.10. Compliance of Existing EC & CCA	No earlier EC. Consent order no.: AWH-100696, Date of Validity: 30/03/2024

2) This is an existing unit and now proposed for expansion in manufacturing of synthetic organic chemicals as mentioned below:

Details of Products

Sr No	NameofProduct	CASNo	CapacityMT/M		
			Existing	Proposed	After Expansion
ReactiveDyes					
1	RedH7B	17681-50-4	0.5	-0.5	0
2	RUBENHDN	-	2	-2	0
3	RedEB	61951-82-4	1	-1	0
4	PinkB	17804-49-8	1	-1	0
5	Scarlet HER	91261-29-9	1.5	-1.5	0
6	OrangeGEX	79809-27-1	0.5	-0.5	0
7	OrangeRX	42986-20-1	0.5	-0.5	0
8	BlueBRR	-	10	-10	0

9	BlueRX	128416-19-3	1	-1	0
10	NavyBlue3RH	93951-21-4	1	-1	0
11	YellowMYR	90597-79-8	1	-1	0
12	YellowR	35642-64-9	2	-2	0
13	Yellow4AS	12223-94-8	1	-1	0
14	Orange	12225-88-6	2	-2	0
15	BlackB	12225-25-1	0	20	20
16	BlackMix	-	0	20	20
17	RedME4BL	93050-79-4	0	6	6
18	RedME6BL	Red 196/250	0	1	1
19	RedME3BL	Red194	0	1	1
20	OrangeME2RL	79809-27-1	0	3	3
21	OrangeWNN	-	0	2	2
22	LemonYellowH4G	12226-48-1	0	1	1
23	YellowME4GL	129898-77-7	0	1	1
24	YellowMERL	93050-80-7	0	2	2
25	YellowWNN(D)	-	0	2	2
26	NavyBlueRGB	93951-21-4	0	1	1
27	BlueHEGN	124448-55-1	0	2	2
28	BlueKBN(Blue 222)	93051-44-6,	0	2	2
29	BlueBB(2B)	120-00-3	0	1	1
30	NavyBlue P2R	68259-02-9.	0	2	2
31	GoldenYellowHR	35642-64-9	0	4	4
32	RedH8B	12237-00-2	0	4	4
33	OrangeH2R	12225-85-3	0	4	4
34	Blue5RH	12236-84-9,	0	1.5	1.5
35	BlackHN	12225-26-2	0	2	2
36	RedBrownH4R	12225-66-0	0	1.5	1.5
37	Blue49	12236-92-9	0	3	3
38	YellowFG	12226-63-0	0	2	2
39	NavyBlue 2G	147826-71-9	0	2	2
40	RedPB	70210-20-7	0	3	3
41	Red P2B	12226-22-1	0	2	2
42	YellowM8G	70865-29-1	0	2	2
43	Magenta HB	Violet 26	0	2	2
44	ReactiveBlue19	2580-78-1	0	3	3
45	YellowRNL	90597-79-8	0	1.5	1.5
46	Re.YellowH7GL	61969-35-5	0	1.5	1.5
47	Re.Violet 5R	12226-38-9	0	1	1
Total			25	82	107
Textileauxiliaries					
1	Desizingenzymes	-			
2	Mercerizingwettingagent	-			
3	Wettingagent	-			
4	Peroxidestabilizer	-			
5	Siliconedefoamer	-			
6	Scouringagent	-			
7	Dyefixingagent	-			
8	Anti-creasingagent	-			

9	Nonionicsoapingagent	-	0	100	100			
10	Anionicsoaping cum washingagent	-						
11	Dyelevelling agent	-						
12	Siliconesofterner	-						
13	Cationicandnonionic softerner	-						
14	Nonionicsofterner	-						
15	Hydrophilicsofterner	-						
16	Polyethylenewaxemulsion	-						
17	Loopaccelerator	-						
18	Khadipaste	-						
19	PVAEmulsion	-						
20	PEEmulsion	-						
21	Wood Binder5 H	-						
22	StickerGum	-						
23	LaminationGum	-						
24	Carboxymethyl Starch	-						
25	CarboxymethylTamarind	-						
26	CarboxymethylGuarGum	-						
27	CarboxymethylCassia Tora	-						
28	CationicGuarGumPowder	-						
29	DepolymerizedGuarGum	-						
30	HydrolyzedTamarind	-						
31	CrossLinkedGuarGum Powder	-						
32	HydroxyPropylGuarGum	-						
33	SodiumMetaChloroAcetic Acid(SMCA)	-						
34	Deformar	-						
35	WashingAgent	-						
36	DispersingAgent(liquid)	-						
37	DispersingAgent(powder)	-						
38	Benzalkonium Chloride(BKC)	-						
39	Binder	-						
Total						25	182	207
StandardizationandFormulation(NONECProducts)								
1	FormulationofPowderDyes	-				60	0	60
2	Formulation of liquid dyes orwaterbaseinkfromsaltfree dyes	-				40	0	40
3	StandardizationofS.O.dyes fromcrudematerial	-				100	0	100
4	formulation of pigmentemulsionorwaterbaseink frompigment	-				30	0	30
5	FormulationOf PaperAnd Textile Auxiliary	-				40	0	40

	From Concentrated Auxiliary				
6	Formulation Of Disperse Dyes From Disperse Dyes Wet Cake	-	15	0	15
Total					285 MT/M

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 11.04.2022.
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. The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period Jan 2020 to March 2020. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx, NOx, VOCs and HC at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site shall remain within the National Ambient Air Quality Standards (NAAQS).
8. Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
9. There is no earlier EC. Unit 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.
10. Committee asked to submit the following:
 - ✓ Revised product profile with mentioning each product CAS number
 - ✓ Revised layout plan with mentioning
 - ✓ Revised stack height for boiler.
 - ✓ Revised Greenbelt letter from GIDC authority with mentioning area and its longitude and latitude, number of trees to be planted with assurance regarding greenbelt development and its maintenance by whom.
 - ✓ Revised base line monitoring of ambient air quality for proposed project study area, as per EIA

Notification 2006 and its amendment for HCl and VOC parameter in addition to PM10, PM 2.5, SOx and NOx parameter.

- ✓ Readdress specific ToR no-6 for action plan for odour control in place of mentioning greenbelt outside premises for control of odour in plant area.

8) Later on PP submitted following details

- ✓ ADS Reply for above points
- ✓ SEAC Format B1.
- ✓ VIA Certificate for green belt plantation.
- ✓ Letter to Gram Panchayat- Tree Plantation.

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

13. Compliance of the ToR found satisfactory.

14. 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. 220 Lakhs</td> </tr> </table>					Total Project	Rs. 220 Lakhs
Total Project						
Rs. 220 Lakhs						
Break-up of proposed project Cost:						
Sr. No	Particulars	Existing Investment Amount (in lakh)	Proposed Investment Amount (in Lakh)	Total after expansion Amount (in Lakh)		
1.	Land	10.050	0	10.050		
2.	building	49.879	80.00	129.879		
3.	Plant & Machinery	88.42	100.00	188.42		
4.	EMS Cost	20.00	40.00	60.00		
Total		168.349	220.00	388.349		
A-2	Details of CER -					
PP shall carry out CER activities as below:						
<ul style="list-style-type: none"> ✓ Distribution of medical equipment like Stretcher, wheel chair & Blood testing kits in Primary health centers in village Odhav 						
B	Land / Plot ownership details:					
Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/AM/ABD/ALT/7509 on dated 05/12/2003.						
B-1	Plot area					

Total Plot area

1785 m2

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

	Material	Max Storage (MT)	Cap of storage	No of storage	Material store on one pallet (MT/Pallet)	No container to be store on one pallet	No of Pallets required	Surface area required storage of pallets(sq. meter)	Allotted area (sq. meter)
Product to be store	Dyes	8	50 Bags	160	3 MT	60 Bags	3 Nos	6 Sq. meter	87 Sq. (Ground Floor)+ 87 Sq. (First Floor)+ 87 Sq. (Second Floor)= 261 Sqm
	Textile auxiliaries	7 MT	200 Lit Drum	35	1.2 MT	6 drums	6 No	12 Sq. meter	
Raw Material to be store	Solid Raw Material	117 MT	50 Bags	2340	3 MT	60 Bags	39 No	88 Sq. meter	87 Sq. (Ground Floor)+ 87 Sq. (First Floor)+ 87 Sq. (Second Floor)= 261 Sqm
	Liquid Raw Material	83 MT	200 Lit Drum	415	1.2 MT	6 drums	69 No	156 Sq. meter	

➤ 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	79 Sq. m inside + 638 Sq. m outside in GIDC				
	% of total area	4.4% Inside + 35.74% Outside = 40.14%				
Comments:						
The condition shall be given that -The PP shall develop green belt [79 m ² (4.4%) inside plant premises + 638 m ² (35.74%) outside plant premises GIDC= Total: 717 Sq. m.) i.e. 40.14 % 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					
➤ GIDC Vatva Water supply						
Comments:						
➤ Prior permission from concerned authority shall be obtained for withdrawal of water.						
D-2	Water consumption (KLD)					
		WaterConsumption(KLD)			Remarks	
	Sr No	Description	Existing	Proposed		Total
	A	Domestic	1.5	0.5	2	-
	B	Gardening	1	1	2	1KLDtreatedsewages hallbe used
	C	Industrial				-
		a. Process	23.9	7.22	31.12	-
		b.Washing	4.8	8	12.8	ROPermeatesh allbereused
		c.Boiler	0.5	1.5	2	-
		d.cooling	0	2	2	-
		e. Scrubber	0	0.200	0.200	ROPermeatesh allbe reused
		Total (C)	29.2	18.92	48.12	

	Total A+B+C	31.7	20.42	52.12	
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Comments:

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

D-3 Waste water generation (KLD)

Sr No	Description	Wastewater Generation(KLD)		
		Existing	Proposed	Total
A	Domestic	0.85	0.50	1.35
B	Gardening	0	0	0
C	Industrial			
	a. Process	0	1.00	1.00
	b.Washing	4.80	8.00	12.80
	c.Boiler	0.20	0.30	0.50
	d.cooling	0	0.20	0.20
	e. Scrubber	0	0.20	0.20
Total (C)		5.00	9.70	14.70
Total A+B+C		5.85	10.20	16.05

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)

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

Comments:

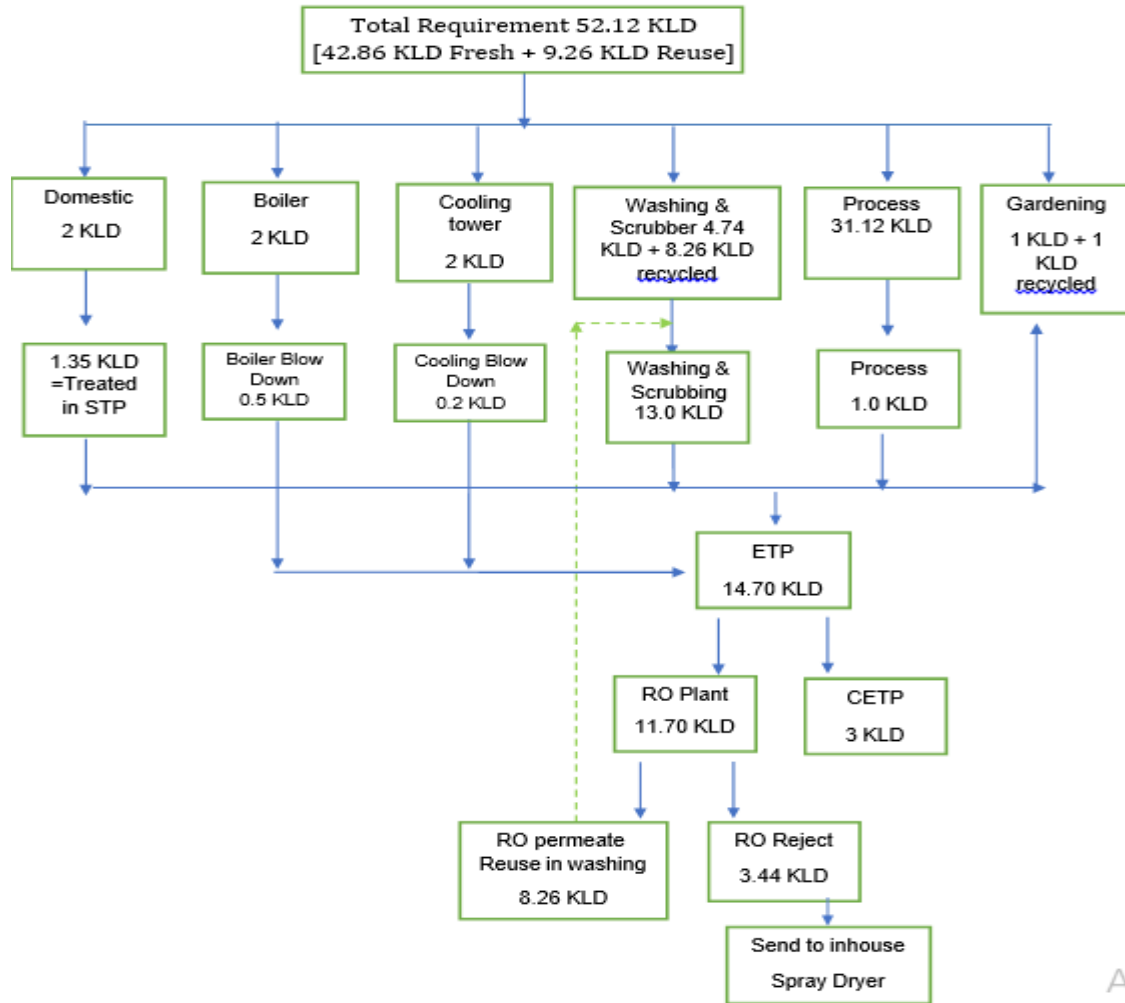
- Domestic wastewater generation shall not exceed 1.35 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms 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	Facility
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	KLD	
1	14.70	Treated in ETP and then 3 KLD send to CETP & 11.7 send to R.O Plant
Total	14.70	--

D-5b Simplified water balance diagram



D-5c Summary

	Quantity KLD	Remarks
Summary of water requirement		
Total water requirement for the project (A)	52.12	
Quantity to be recycled (B)	9.26	
Total fresh water requirement (C)	42.86	
Ensure Total water requirement = Recycled water + Fresh water i.e. A = B + C		

Comments:

- Total water requirement for the project shall not exceed 52.12 KLD. Unit shall reuse 9.26 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 42.86 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 Wastewater: Out of 14.70 KLD industrial waste water,

- 14.70 KLD Remaining water shall be treated in primary effluent treatment plant.
- 3 KLD treated waste water shall be sent to CETP at va.
- 8.26 KLD RO permeate water shall be re-used in washing and process
- 3.44 KLD RO reject water shall be evaporated in in-house Spray Dryer.

- 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: 261.1 KVA

E-2 Flue gas emission details

Sr. No.	Stack Attached to	Fuel Consumption	Stack Height	Parameter	Permissible Limit	APCM
Existing						
1	Steam Boiler (600kg/hr)	Natural Gas 60 NM ³ /Month	15	PM SOX NOX	150mg/Nm ³ 100 ppm 50 ppm	Adequate Stack Height of 15m
2	HAG (4 Lac Kcal) (2Nos)	LDO (0.12 KL/Hr)	30			Adequate Stack Height of 15m
3	D G (125KVA)	HSD- (0.10 KL/Month)	11			Adequate Stack Height of 15m
Proposed						
4	Steam Boiler (600kg/hr)	Natural Gas 60 NM ³ /Month	15	PM SOX NOX	150mg/Nm ³ 100 ppm 50 ppm	Adequate Stack Height of 15m
5	HAG (4 Lac Kcal) (2Nos)	Natural Gas 60	30			Adequate Stack Height of 30m

			NM3/Month			
E-3		Process gas				
Sr. No	Stack Attached to	Stack Height	Air Pollution Control Measures	Probable Pollutants	Permissible Limit	
Existing						
1	Spray Dryer (2KL/Hr)	25meter	Cyclone separator followed by two stage water scrubber with, water dipping tank and enclosure of chimney in closed room.	PM SO ₂ NO _x	150mg/NM ³ 40mg/NM ³ 25mg/NM ³	
Proposed						
2	Spray Dryer (2KL/Hr)	25meter	Cyclone separator followed by two stage water scrubber with, water dipping tank and enclosure of chimney in closed room.	PM SO ₂ NO _x	150mg/NM ³ 40mg/NM ³ 25mg/NM ³	
3	Reactor of Dyes	15	Alkali scrubber followed by Water Scrubber	HCL	<20mg/NM ³	
4	Reactor of Textile auxiliaries	15	Alkali Scrubber followed by Water Scrubber	SO ₂	<49mg/NM ³	
E-4		Fugitive emission details with its mitigation measures.				
<ul style="list-style-type: none"> - For Fugitive emission such as VOCs, VOC detectors shall 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.
	Not applicable
F-2	VOC emission sources and its mitigation measures
	<p>Measures for achieving maximum solvent recovery and minimize VOC generation:</p> <ul style="list-style-type: none"> ➤ Regular maintenance of valves, pumps, flanges, joints and other equipments shall be done to prevent leakages and thus minimizing the fugitive emissions of VOCs. ➤ Entire process shall be carried out in the closed reactors with proper maintenance of pressure and temperature. ➤ Controlled by having proper scrubbing system. ➤ VOC detectors shall be installed.
F-3	LDAR proposed:
	<ul style="list-style-type: none"> ➤ Minimum number of flanges, joints and valves in pipelines. ➤ All the rotating equipment like pumps shall be installed with double Mechanical Seals to arrest any sort of emissions. ➤ Flanges shall be sealed so less losses shall be there ➤ Closed loop system. ➤ Proper Ventilation ➤ Adequate PPEs
	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							
S r N o	Type of Waste	Specific Source of generation (name of activity, product etc.)	Schedule as per Haz. Waste Category	Quantity (MT/Annum)			Mode of Disposal
				Existing	Proposed	Total	
1	ETP Sludge	Treatment Plant	36.2	1.2	12.00	13.2	Collection,
2	Empty Bags & liners	Raw Material	33.1	6.0	7.50	13.5	Collection, Storage, transportation and partially reuse in plant
3	Used Oil	Plant Machinery	5.1	0.154	0.500	0.654	Collection, Storage, Transportation & Reuse as lubricant in plant
4	Spent Filter Media	Process RO plant	36.1	0.5	0.50	1.0	Collection, Storage, Transportation & send to TSD
5	Process Waste	From Dyeing Plant	26.1	240	-226.80	13.20	Collection,
6	Salt	From Spray Dryer	36.2	0	7.2	7.2	Collection, Storage, Transportation Industries or TSD
7	Scrubber Bleed Off	From Scrubber of Textile auxiliary plant	--	0	36	36	Collection, Storage, Transportation to end user / Authorized recycler
8	HCl (28%)	From Scrubber of Dyeing plant	--	0	36	36	Collection, Storage, and sale to actual end user

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														
<ul style="list-style-type: none"> ➤ Applicability of PESO: Not Applicable <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 shall 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>Manufacturingofproposedproductsinvolvevariousunit operationslike distillation,crystallization, Condensation,purification,filtration,centrifugation,anddryingetc.</p>															
H-3	Details of Fire Load Calculation														
<table border="1"> <tr> <td>Total Plot Area:</td> <td>1785 sq.m</td> </tr> <tr> <td>Area utilized for plant activity:</td> <td>325</td> </tr> <tr> <td>Area utilized for Hazardous Chemicals Storage:</td> <td>40</td> </tr> <tr> <td>Number of Floors:</td> <td>3</td> </tr> <tr> <td>Water requirement for firefighting in KLD:</td> <td>200</td> </tr> <tr> <td>Water storage tank provided for firefighting in KLD:</td> <td>200</td> </tr> <tr> <td>Details of Hydrant Pumps:</td> <td>Storage tank shall have fire detection & protection system as</td> </tr> </table>		Total Plot Area:	1785 sq.m	Area utilized for plant activity:	325	Area utilized for Hazardous Chemicals Storage:	40	Number of Floors:	3	Water requirement for firefighting in KLD:	200	Water storage tank provided for firefighting in KLD:	200	Details of Hydrant Pumps:	Storage tank shall have fire detection & protection system as
Total Plot Area:	1785 sq.m														
Area utilized for plant activity:	325														
Area utilized for Hazardous Chemicals Storage:	40														
Number of Floors:	3														
Water requirement for firefighting in KLD:	200														
Water storage tank provided for firefighting in KLD:	200														
Details of Hydrant Pumps:	Storage tank shall have fire detection & protection system as														

		hydrant.		
Nearest Fire Station :		Maninagar Fire Station @ 5.94 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:			
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:	15		
	Number of Contractual person/Labour:	5		
	Area provided for OHC:	15 sq.m		
	Number of First Aid Boxes:	4		
	Nearest General Hospital:	ESI Hospital 7.87km		
	Name of Antidotes to be store in plant:	Folic Acid, Ethanol, Sodium Thiosulfate, Deferoxamine, Pyridoxine etc shall be provided		
-				
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.	Pollution Control Measures	Capital Cost Rs.(Lakhs)	Recurring Cost per annum Rs.(Lakhs)	Basis for cost estimates
1	Air Pollution Control	10	4	Capital cost would include air pollution control devices like Cyclone separator followed by two stage water scrubber with, water dipping tank and enclosure of chimney in closed room and Alkali scrubber followed by water scrubber. The recurring cost would include operation and maintenance of pollution control

				devices and stack emission monitoring.
2	Water Pollution Control	25	7	Capital cost would include cost of STP, ETP & RO and In houses spray dryer, and recurring cost would include maintenance charges, manpower salary etc.
3	Noise Pollution Control	2	0.5	Capital cost would include providing adequate sound enclosures and recurring cost would include monitoring of noise level.
4	Solid and hazardous waste management	10	4	Capital cost would include expense of providing storage area for hazardous waste and TSDF membership charges. Recurring cost would be for solid/hazardous waste packing, transportation & its disposal and charges of TSDF site.
5	Green Belt	3	1	Capital cost would include cost of plant species and labor cost, soil filling, soil dressing and recurring cost would include cost of maintenance of that green belt including cost of required water for plant growth
6	Environment monitoring	2	1	The recurring cost would be incurred on hiring of consultants and payment of various

Activities	1st Year (Rs. In Lakhs)
Distribution of medical equipment like Stretcher, wheel chair & Blood testing kits in Primary health centers in village Odhav	2.2
Total	2.2

Comments:

- The overall environment management plan (EMP) provided for capital and recurrent cost for waste water treatment, air emission control, noise control, hazardous waste disposal, fire safety, occupational health, green belt and

corporate social responsibility was deliberated and found satisfactory.

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. Distribution of medical equipment like Stretcher, wheelchair & Blood testing kits in Primary health centers in village Odhav
2. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
3. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
4. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
5. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge

- of pollutants, and shall carry out the project development in accordance & consistence with the same.
6. All measures shall be taken to avoid soil and ground water contamination within premises.

7. Safety & Health:

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

WATER

8. Total water requirement for the project shall not exceed 52.12 KLD. Unit shall reuse 9.26KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 42.86 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
9. The industrial effluent generation from the project shall not exceed 16.05 KLD.
10. Management of Industrial effluent shall be as under:
 - a. 14.70KLD Remaining waters shall be treated in primary effluent treatment plant.
 - b. 3KLD treated waste water shall be sent to CETP Vatva & remaining shall be subjected to RO Plant

- c. 8.26 KLD RO permeate water shall be re-used in washing and process
- d. 3.44 KLD RO reject water shall be evaporated in in-house Spray Dryer.

11. Treated waste water shall be subjected to in-house dryer for spray drying 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.
12. Domestic wastewater generation shall not exceed 1.35 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.
13. 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.
14. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
12. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
13. 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:

14. Unit shall not exceed fuel consumption for Steam Boiler, Fluid Bed Dryer and D G Set as per the point no. E-2 as mentioned above.
15. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
16. Unit shall provide adequate APCM with process gas generation sources as the point no. **E-3** as mentioned above.
17. PP shall use approved fuels only as fuel in boilers.
18. 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.

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

20. 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.

21. 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.

22. 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:

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

24. 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.

25. 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.
26. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
27. 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

28. The PP shall develop green belt within premises (79 Sq. m inside + 638 Sq. m outside in GIDC 4.4% Inside + 35.74% Outside = 40.14% 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.

OTHERS:

29. The project proponent shall Distribution of medical equipment like Stretcher, wheel chair & Blood testing kits in Primary health centers in village Odhav proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
- 30.23. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Green Circle INC. and submitted by the project proponent and commitments made during presentation before SEAC and proposed In the EIA report shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

31. 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.
- 32.25. 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 shall not mean that appointing a key person shall exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.
- 33.26. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
- 34.27. 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.

35. 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.

36. 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.

37. 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

11	SIA/GJ/IND3/68819/2019	M/s. Shree Shyama Chem International Plot No: C-1/B, 121 & 118, Phase-II, GIDC Estate, Vatva, Ahmedabad- 382445.	EC
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Category of the unit: **5 (f)**

Project status: **Expansion**

1. DETAILS OF APPLICATION:

1.1. Type of application:	EC-Expansion
1.2. Proposal no.	SIA/GJ/IND3/68819/2019
1.3. Category of Project:	5 (f) – B1
1.4. Date of application :	18.11.2021
1.5. Documents Submitted by Project Proponent(PP)	EIA report, Form-2, EMP
1.6. TOR No. & Date :	SEIAA/GUJ/TOR/5(f)/1722/2019, Date: 5 Dec 2019.
1.7. Date of Public hearing	Not applicable
1.8. Technical expert / Environmental Consultant :	M/s. Bhagwati Enviro Care Private Limited
1.9. SEAC Meeting No. and Date:	399 th meeting dated 11.04.2022
1.10. Compliance of Existing EC & CCA	No earlier EC. Consent order no.: AWH-109477, Date of Validity: 30/06/2025

Self-compliance report submitted with application.

2. This is an existing unit and now proposed for expansion in manufacturing of synthetic organic chemicals as mentioned below:

Product Table

Sr no	Name of the Products	CAS / SI no.	Quantity MT/Month			End-use of the products							
			Existing	Proposed	Total								
1	Pigment Yellow 12	6358-85-6	5.0	60.0	60.0	Used in Textile Mills for Printing & Dyeing.							
2	Pigment Yellow 13	5102-83-0											
3	Pigment Red 57:1	5281-04-9											
4	Pigment Orange 34	15793-73-4											
5	Pigment Red 53:1	5160-02-1											
6	Pigment Red 48:2	7023-61-2											
7	Pigment Yellow 1	2512-29-0	0.0				60.0	60.0	Used in Textile Mills for Printing & Dyeing.				
8	Pigment Yellow 3	6486-23-3											
9	Pigment Yellow 14	5468-75-7											
10	Pigment Yellow 17	4531-49-1											
11	Pigment Yellow 62	12286-66-7											
12	Pigment Yellow 65	6528-34-3											
13	Pigment Yellow 74	6358-31-2	5.0							55.0	60.0	Used in Textile Mills for Printing & Dyeing.	
14	Pigment Yellow 83	5567-15-7											
15	Pigment Yellow 126	90268-23-8											
16	Pigment Yellow 127	68610-86-6											
17	Pigment Yellow 174	78952-72-4											
18	Pigment Yellow 191	129423-54-7											
19	Pigment Red 2	6041-94-7											
20	Pigment Red 3	2425-85-6											
21	Pigment Red 4	2814-77-9											
22	Pigment Red 8	6410-30-6											
23	Pigment Red 48:1	7585-41-3											
24	Pigment Red 48:3	15782-05-5											
25	Pigment Red 48:4	5280-66-0											
26	Pigment Suthal Red 49:1	1103-38-4											
27	Pigment Suthal Red 49:2	1103-39-5											
28	Pigment Red 63:1	6417-83-0											
29	Pigment Red 112	6535-46-2											
30	Pigment Red 146	5280-68-2											
31	Pigment Red 170	2786-76-7											
32	Pigment Orange 13	3520-72-7											
Total				5.0	55.0	60.0							

3. The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
4. The proposal was considered in the SEAC video conference meeting dated 11.04.2022.

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. The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period March-2021 to May-2021. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx, NOx, VOCs and HC at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site shall remain within the National Ambient Air Quality Standards (NAAQS).
8. Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
9. There is no earlier EC. Unit 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.
10. Committee asked to submit the following:
 - ✓ Revised layout plan with mentioning separate entry and exit, adequate size peripheral road for easy movement of fire tender and mentioned open area in shed with shed height and area adequacy for proposed expansion project with land break up.
 - ✓ Revised flue gas emission matrix with mentioning adequate APCM for solid fuel fired boiler and HAG.
 - ✓ Revised EMP with mentioning fire hydrant network cost, fire extinguisher details and adequate APCM cost.
11. Later on PP submitted following details through email.
 - ✓ Submitted Revised layout plan with mentioning separate entry and exit, adequate size peripheral road for easy movement of fire tender and mentioned open area in shed with shed height and area adequacy for proposed expansion project with land break up.
 - ✓ Submitted Revised flue gas emission matrix with mentioning adequate APCM for solid fuel fired boiler and HAG.
 - ✓ Submitted Revised EMP with mentioning fire hydrant network cost, fire extinguisher details and adequate APCM cost.

12. Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
13. Compliance of the ToR found satisfactory.
14. 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>Existing</th> <th>Proposed</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>1.39 Crores</td> <td>0.52 Crores</td> <td>1.91 Crores</td> </tr> </tbody> </table>			Existing	Proposed	Total	1.39 Crores	0.52 Crores	1.91 Crores							
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Break-up of proposed project Cost:															
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Env. & Safety	0.3605														
Miscellaneous															
Total	1.91														
A-2	Details of CER -														
PP shall carry out CER activities as below: <input checked="" type="checkbox"/> Drinking Water Facility (RO system) installation in Shri Dhanpaleshwar Mahadev Trust, Vinzol.															
B	Land / Plot ownership details:														
For Land Possession Documents, They have submitted below documents: 1) Letter from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/AD/ALT/TFR/VTW/SHD/3187 on dated 17/06/1999. Here, they have enclosed Land Possession Document GIDC letter in Annexure-1.															
B-1	Plot area														
<table border="1"> <thead> <tr> <th>Existing</th> <th>Proposed</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>1780 Sq. m.</td> <td>0 Sq. m.</td> <td>1780 Sq. m.</td> </tr> </tbody> </table>			Existing	Proposed	Total	1780 Sq. m.	0 Sq. m.	1780 Sq. m.							
Existing	Proposed	Total													
1780 Sq. m.	0 Sq. m.	1780 Sq. m.													
B-2	Area adequacy														
Area Adequacy table:															

SR NO	LAND BREAKUPFOR	GROUND FLOOR	FIRST FLOOR	AREA	%
1	OFFICE	50.96	-	50.96	2.86
2	LAB	20	-	20	1.12
3	OHC	15	-	15	0.84
4	SECURITY CABIN	9	-	9	0.51
5	TANK FARM AREA	15	-	15	0.84
6	UTILITY (EXISTING & PROPOSED)	163.52	-	163.52	9.18
7	FINISHED GOODS STORAGE (EXISTING & PROPOSED)	70	-	70	3.93
8	PRODUCTION AREA & PACKING – DRYING AREA (EXISTING & PROPOSED)	431.2	-	431.2	24.26
9	RM STORAGE-LIQUID (EXISTING & PROPOSED)	14	-	14.0	0.78
10	RM STORAGE-SOLID (EXISTING & PROPOSED)	-	461.2	461.2	0
11	ETP AREA	100	-	100	5.62
12	SOLID WASTE STORAGE	14	-	14	0.78
13	ROADS	626.81	-	626.81	35.18
14	GREEN BELT	250.51	-	250.51	14.10
	TOTAL	1780	461.2	2241.2	100

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

Comments:

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

B-3 Green belt area

	Existing (Sq. meter)	Proposed (Sq. meter)	Total (Sq. meter)
Area in Sq. meter	250.51	343.0	593.51.0
% of total area	In premises 14.1 %	In GIDC 19.2 %	33.3%

Comments:

The condition shall be given that -

- The PP shall develop green belt [250.51 m² (14.1%) inside plant premises + 343.0 m² (19.2%) at Common Plot in Ankleshwar GIDC= Total: 593.51 Sq. m.) i.e. 33.3 % 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
7	8	15

-

D WATER

D-1 Source of Water Supply

- Source of Water Supply shall be Vatva GIDC.

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
(A) Domestic	1.2	0.5	1.7
(B) Gardening	0.0	1.0	1.0
(C) Industrial			
Process	4.5	20.0	24.5
Washing	2.5	2.0	4.5
Boiler	0.5	1.0	1.5
Cooling	0.0	0.0	0.0
Others - Scrubber	0.0	1.5	1.5
Industrial Total	7.5	24.5	32.0
Grand Total (A+B+C)	8.7	26.0	34.7

-
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
(A) Domestic	1.0	0.3	1.3
(B)Industrial			
Process	4.45	20.45	24.9
Washing	2.5	2.0	4.5
Boiler	0.05	0.1	0.15
Cooling	0.0	0.0	0.0
Others - Scrubber	0.0	1.5	1.5
Total Industrial waste water	7.0	24.05	31.05

-
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)**

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

Comments:

- Domestic wastewater generation shall not exceed 1.3 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off through soak pit/ septic tank. Treated sewage shall be utilized for gardening & domestic Flushing 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)

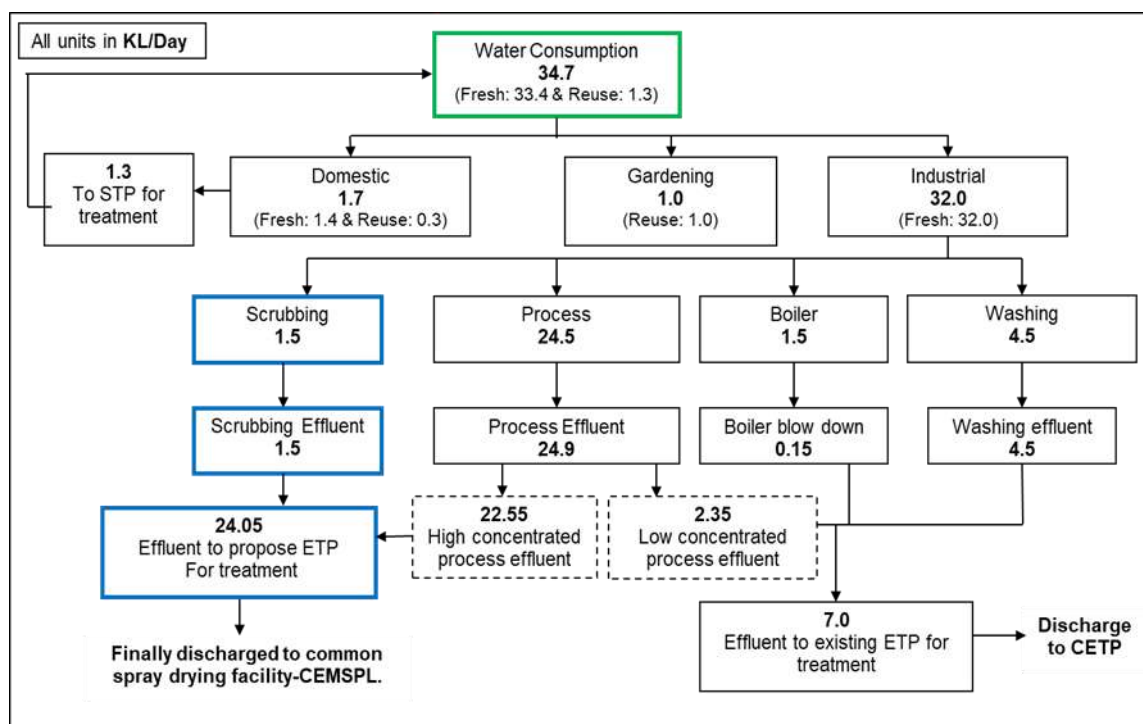
Sr. no.	Quantity KLD	Facility
1	7.0	Low Concentrated effluent 7.0 KL/day treated in Existing ETP & after treatment it shall be send to CETP, Vatva for further treatment & disposal.
2	24.05	High Concentrated effluent 24.05 KL/day shall be treated in Proposed ETP & after it shall be send for spray drying at common spray drying facility- CEMSPL.
Total	31.05	

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

Membership certificate: M/s Chhatral Environment Management System Private Limited. dated 01.04.2022

D-5b Simplified water balance diagram

Diagram



D-5c Summary

	Quantity KLD	Remarks
Summary of water requirement		
Total water requirement for the project (A)	34.7	
Quantity to be recycled (B)	1.3	

	Total fresh water requirement (C)	33.4				
	Ensure Total water requirement = Recycled water + Fresh water i.e. A = B + C					
Comments:						
<p>1. Total water requirement for the project shall not exceed 34.7 KLD. Unit shall reuse 1.3 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 33.4 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.</p> <p>2. Management of Industrial effluent shall be as under:</p> <ul style="list-style-type: none"> ✓ Low Concentrated effluent 7.0 KL/day treated in Existing ETP & after treatment it shall be sent to CETP, Vatva for further treatment & disposal. ✓ High Concentrated effluent 24.05 KL/day shall be treated in Proposed ETP & after it shall be sent for spray drying at common spray drying facility-CEMSPL. <p>3. Unit shall provide STP and ETP with adequate capacity.</p> <p>4. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.</p>						
E	AIR					
E-1	Power (Electricity) requirement :150 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)
7.	IBR Boiler (1.5 TPH) (Existing)	30	Agro waste	2.0	PM, SO ₂ , NO _x	Multi Cyclone Dust Collector followed by bag filter & Wet Scrubber
8.	Hot Air Generator (1 Lac Kcal/Hr) (Existing)	30	Bio Coal/ Agro waste	0.8	PM, SO ₂ , NO _x	Multi Cyclone Dust Collector followed by bag filter & Wet Scrubber
9.	Hot Air Generator (2.1 Lac Kcal/Hr) (Proposed)	30	Bio Coal/ Agro waste	1.2	PM, SO ₂ , NO _x	Multi Cyclone Dust Collector followed by bag filter & Wet Scrubber

10.	Hot Air Generator (2.1 Lac Kcal/Hr) (Proposed)	30	Bio Coal/ Agro waste	1.2	PM, SO ₂ , NO _x	Multi Cyclone Dust Collector followed by bag filter & Wet Scrubber
-						
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)		
NA						
❖ There shall be no process gas emission generated from existing as well as proposed manufacturing process.						
E-4	Fugitive emission details with its mitigation measures.					
Sources of fugitive emission include storage of chemical, loading, and unloading section, raw material handling hazardous waste storage.						
Mitigation Measures						
<ul style="list-style-type: none"> ➤ Water shall be sprinkled during the construction. ➤ Mechanical seals for pumps etc. shall be used and maintained. ➤ Closed unloading, conveying and packing system. ➤ All the reactors shall be closed. ➤ Safety devices shall be provided to workers. ➤ Raw material storage in closed in storage area. 						
<u>Comments for E2, E3 & E4:</u>						
<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.					
<ul style="list-style-type: none"> • No any kind of solvent shall be used in existing as well as proposed manufacturing activity. 						
F-2	VOC emission sources and its mitigation measures					
<ul style="list-style-type: none"> • Measures for achieving maximum solvent recovery and minimize VOC generation: <ul style="list-style-type: none"> ➤ Minimum number of flanges, joints and valves in pipelines. 						

- All the rotating equipment like pumps shall be installed with mechanical seals to arrest any sort of emissions.
- 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.

F-3 LDAR proposed:

- Not Applicable

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

Sr. No	Type of Hazardous Waste	Specific Source of generation	Cat. No.	Quantity (MT/Annum)			Management
				Existing	Proposed	Total After Expansion	
1.	ETP waste	ETP	35.3	1.2	28.8	30.0	Collection, storage, transportation, disposal at TSDf Site
2.	Discarded Containers & Bags	Raw Materials & Finished Products	33.1	2.4	10.8	13.2	Collection, storage, transportation, disposal by Selling to registered refineries.
3.	Used Oil	Plant machinery	5.1	0.010	0.005	0.015	Collect & Store in carboys and then after it is reuse as lubricant in our plant machineries.

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

- ✓ STP sludge generation shall be 4.0 MTPA

Comments:

- 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

Sr.no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
1	HCl (Hydrochloric Acid)	MS Tank – 10 KL	2	Corrosive
2	Acetic acid	Carboys – 2MT	1	Corrosive

Storage of Hazardous chemicals in Tanks

- Provision of Static Earthing
- Fire Extinguisher/Fire Hydrant System
- Lighting /Proper Illumination
- Lightening arrestor
- Trained and experience operators
- NFPA label capacity and content should display on storage tank

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

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

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	<ul style="list-style-type: none"> - Materials shall be stored as per its compatibility study and separate area shall be available for flammable, corrosive and toxic chemical drums storage. - Smoking and other spark, flame generating item shall be

		<p>banned from this area.</p> <ul style="list-style-type: none"> - NFPA labels shall be provided on drums for hazard identification of the chemicals - Safety shower and eyewash shower shall be provided near storage area and plant area. - Flame proof electrical equipment's provided in process and storage area. - Onsite emergency shall be prepared as per GJR 68 J (9) and train all team members for emergency situation as per risk assessment scenarios outcome. 								
	CORROSIVE & CHEMICALS	<ul style="list-style-type: none"> - Store corrosives in suitable labeled containers away from incompatible materials, in a cool, dry area. - Store corrosives in areas which are Well ventilated, Supplied with adequate firefighting equipment, Supplied with suitable spill clean-up equipment and materials. - Store containers at a convenient height for handling, below eye level if possible. - Avoid rapid temperature changes in corrosive liquid storage areas. If a tightly-sealed corrosive liquid container is cooled suddenly, a partial vacuum could form inside it. In extreme cases, the container might collapse and leak. - Inspect storage areas regularly for any deficiencies, including corrosion damage, leaking containers, or poor housekeeping. 								
		<p>➤ Applicability of PESO: Not Applicable</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 shall 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:									
	<p>➤ Not Applicable</p>									
H-3	Details of Fire Load Calculation									
	<table border="1"> <tr> <td>Total Plot Area:</td> <td>1780 m2</td> </tr> <tr> <td>Area utilized for plant activity:</td> <td>803.21 m2</td> </tr> <tr> <td>Area utilized for Hazardous Chemicals Storage:</td> <td>461.2 m2</td> </tr> <tr> <td>Number of Floors:</td> <td>G +1</td> </tr> </table>		Total Plot Area:	1780 m2	Area utilized for plant activity:	803.21 m2	Area utilized for Hazardous Chemicals Storage:	461.2 m2	Number of Floors:	G +1
Total Plot Area:	1780 m2									
Area utilized for plant activity:	803.21 m2									
Area utilized for Hazardous Chemicals Storage:	461.2 m2									
Number of Floors:	G +1									

Water requirement for firefighting in KLD:	86.0				
Water storage tank provided for firefighting in KLD:	100				
Details of Hydrant Pumps:	Shall Provide: 1) Main Pump:900 L/min. 2) Jockey Pump: 100 L/min. 3) Diesel Engine driven Pump: 450 L/min				
Nearest Fire Station :	Jashoda Nagar Fire station				
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 100 KL. SEAC found it as per the requirement.					
H-4	Details of Fire NOC/Certificate:				
For existing unit, They have already obtained Fire NOC.					
H-5	Details of Occupational Health Centre (OHC):				
-					
Number of permanent Employee:	5				
Number of Contractual person/Labour:	10				
Area provided for OHC:	15 m ²				
Number of First Aid Boxes:	10 nos				
Nearest General Hospital:	Kashiba General Hospital				
Name of Antidotes to be store in plant:	Adequate antidotes shall 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	Detail	Capital Cost (Rs. In Crore)	Total Recurring Cost (Rs. In Crore)	
1	Air pollution control	Monitoring of Air Environment & APCM	0.14	0.03	
2	Water pollution control	ETP, Membership Cost	0.08	0.28	
3	Noise pollution monitoring	Monitoring of Noise	0.0	0.007	
4	Solid and hazardous	Transportation cost	0.01	0.02	

	waste management			
5	Environment monitoring and management	Environment monitoring	0.02	0.015
6.	Green belt	Greenbelt development	0.01	0.015
7.	Fire & Safety	Fire Hydrant System, Fire Extinguishers & PPE	0.10	0.025
8	Occupational health	Health checkup of workers & employee	0.04	0.02
9	CER Activity	Social activity shall do In near village	0.0052	0.0005
Total			0.4052	0.4125

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.

15) 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. Unit shall install CEMS [Continuous Emission Monitoring System] in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. [For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].
2. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
3. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
4. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
5. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
6. All measures shall be taken to avoid soil and ground water contamination within premises.
7. **Safety & Health:**
 - a) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
 - b) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
 - c) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
 - d) Unit shall adopt functional operations/process automation system including emergency response

to eliminate risk associated with the hazardous processes.

- e) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.
- f) PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
- g) PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
- h) PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
- i) Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
- j) Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

WATER

8. Total water requirement for the project shall not exceed 34.7 KLD. Unit shall reuse 1.3 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 33.4 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
9. The industrial effluent generation from the project shall not exceed 31.05 KLD.
10. Management of Industrial effluent shall be as under:
 - ✓ Low Concentrated effluent 7.0 KL/day treated in Existing ETP & after treatment it shall be sent to CETP, Vatva for further treatment & disposal.
 - ✓ High Concentrated effluent 24.05 KL/day shall be treated in Proposed ETP & after it shall be sent for spray drying at common spray drying facility- CEMSPL.
11. 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.
12. Treated waste water shall be sent to CETP only after complying with the inlet norms of CETP prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
13. Domestic wastewater generation shall not exceed 1.3 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off 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. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
13. 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:

14. Unit shall not exceed fuel consumption for Steam Boiler and Hot Air Generators as per the point no. E-2 as mentioned above.
15. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
16. Unit shall provide adequate APCM with process gas generation sources as the point no. E-3 as mentioned above.
17. PP shall use approved fuels only as fuel in boilers.
18. The fugitive emission in the workzoneenvironment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities fromtime to time (e.g. Directors of IndustrialSafety& Health). Following indicativeguidelines shall also be followed to reducethe fugitive emission.
- Internal roads shall be either concreted or asphalted or paved properly to reducethe fugitive emission during vehicular movement.
 - Air borne dust shall becontrolled with water sprinklers at suitable locations in the plant.
 - A green belt shall be developed all around the plant boundary and also along the roads to mitigate fugitive & transport dust emission.
19. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
20. Forcontrol of fugitive emission, VOCs, following steps shall be followed :
- ✓ Closed handling and charging system shall be provided for chemicals.
 - ✓ Reflux condenser shall be provided over Reactors / Vessels.
 - ✓ Pumps shall be provided with mechanical seals toprevent leakages.
 - ✓ Air borne dust at all transfers operations/ points shall be controlled either by spraying water or providing enclosures.
21. 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.

22. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, 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:

23. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
24. 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.
25. 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.
26. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
27. 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

28. The PP shall develop green belt [250.51 m² (14.1%) inside plant premises + 343.0 m² (19.2%) at Common Plot in Ankleshwar GIDC= Total: 593.51 Sq. m. i.e. 33.3 % 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:

29. The project proponent shall carry out the activities (Drinking water facility (RO system) in Shri

Dhanpaleshwar Mahadev Trust, Vinzol) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.

30. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Bhagwati Enviro Care Private Limited and submitted by the project proponent and commitments made during presentation before SEAC and proposed in the EIA report shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

31. 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.
32. 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 shall not mean that appointing a key person shall exempt the project proponent from the responsibility of compliance. Any change in key person shall immediately be informed to SEIAA and all concerned authorities.
33. Designated key person shall submit six monthly compliance report to SEIAA/SEAC, MOEF&CC, GPCB and Nodal Department of the Government.
34. 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.
35. 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.
36. 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.
37. 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

12	SIA/GJ/IND3/69564/2021	M/s. Mahavir Industries(Old Name: Vardhman Chemicals) Plot no. C1-58, Phase – II, GIDC Vatva, Ahmedabad	EC
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Category of the unit: **5 (f)**

Project status: **Expansion**

1) DETAILS OF APPLICATION:

1.1. Type of application:	EC-Expansion
1.2. Proposal no.	SIA/GJ/IND3/69564/2021
1.3. Category of Project:	5 (f) – B1
1.4. Date of application:	29-11-2021
1.5. Documents Submitted by Project Proponent (PP)	EIA report, Form-2, EMP
1.6. TOR No. & Date:	SIA/GJ/236411/2021 dated 30-11-2021
1.7. Date of Public hearing	Not applicable
1.8. Technical expert / Environmental Consultant:	M/s. Satva Environ Consultancy
1.9. SEAC Meeting No. and Date:	399 th meeting dated 11.04.2022
1.10. Compliance of Existing EC & CCA	No earlier EC. AWH-95938 date of Issue 23/09/2018, which is valid upto 25/06/2023. Self-compliance report submitted with application.

2) This is an existing unit and now proposed for expansion in manufacturing of synthetic organic chemicals as mentioned below:

SR NO	PRODUCT NAME	Cas no. / CI no	Existing MT/Month	Proposed MT/Month	Total Proposed MT/Month
1	Mixing Rebranding and repacking of Dyes & dyes-Stuff	--	25	-	25
2	Pigment Beta blue	beta blue 15:3	NIL	80	80
	TOTAL		25	80	105

- 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 11.04.2022.
- 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) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period November-2020 to January-2021. Ambient Air Quality monitoring was carried out PM10, PM2.5, SO_x, NO_x, and VOCs at Nine locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site shall remain within the National Ambient Air Quality Standards (NAAQS).
- 8) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
- 9) Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
- 10) Committee deliberated on waste water management keeping in view direction under section 18 (1) (b) of the Water (Prevention and Control of Pollution) act, 1974 issued by CPCB regarding compliance of CETP. This unit is having no discharge to CETP in existing CCA and CETP has not obtained CCA for expanded capacity for which EC is obtained by CETP-GESCSL.
- 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
	0.5 Crores	1.5 Crores
		Total
		2.5 Crores
Break-up of proposed project Cost:		
	Details	Project Cost (Rs. In Crores)
	Land	0.5
	Building	0.5
	Machinery	1.0
	Env. & Safety	0.25
	Miscellaneous	0.25

Total		2.5						
-								
A-2	Details of CER -							
PP shall carry out CER activities as below: ✓ Carry out pavering and repairing of common wall of school at Vinzol village								
B	Land / Plot ownership details:							
Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/ABD/TFR/VTW/2668 Dated 24/05/2017.								
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;">1263 Sq. m.</td> </tr> </table>							Total Plot area	1263 Sq. m.
Total Plot area								
1263 Sq. m.								
-								
B-2	Area adequacy							
Sr. No	Description of Area	Ground Floor	First Floor	Second Floor	Total	Percentage		
1	Production Area	400	--	350	350	-		
2	Raw material Storage	100	200	--	--	15.84		
3	Product Storage Area	50	150	--	--	11.88		
4	Office and Lab area	15	20	--	--	1.58		
5	Utility area	-	100	--	--	7.92		
6	ETP Area+ ETP sludge	-	75	--	--	5.94		
7	Green belt area	20	255	--	--	20.19		
8	OHC Center	-	15	--	--	1.19		
9	Road & Open	678	443	--	--	35.08		
	TOTAL	1263	1263					
	Additional green belt Area		190					
Area Adequacy table:								
Sr No.	Description of Area	Criteria for Storage	Inventory Required (MT) (KL)	Area Required (m ²)	Area Proposed (m ²)			
1	Finished Product Storage Area (1 Week inventory)	80	20	30	150			
2	Raw Material Store area in Drum and Bag (1 Week inventory)	68 Drum 824 Bag	14.28 20.6	30 25	200			
3	Effluent Treatment Plant	21 KLD	21 KLD	30	65			
4	ETP Sludge Storage (30 Day Inventory)	150 MT/Annum	12.5	15				
5	Utility Area	-	Boiler 1 TPH HAG 4 Lac Kcal/hr	30	60			
6	Adm. Office	-	-	15	20			
7	OHC	-	-	15	15			
8	Manufacturing Area	80 MT/Month	-	320	700			

		TOTAL		510	1210
<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				
	Existing (Sq. meter)	Proposed (Sq. meter)	Total (Sq. meter)		
Area in Sq. meter	-	445 (255 Sq. m with in Premises + 190 Sq. m Outside Premises)	445		
% of total area	-	35	35		
<p>Comments:</p> <p>The condition shall be given that -</p> <p>➤ The PP shall develop green belt [255 m² (20%) inside plant premises + 190 m² (15%) Outside plant Premises with in GIDC= Total: 445 Sq. m.) i.e. 35 % 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.</p>					
C	Employment				
Employment generation					
	Total				
	20				
	-				
D	WATER				
D-1	Source of Water Supply				
<p>➤ Vatva 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)

Sr. No	Category	Water Consumption In KLD		
		Existing	Additional	Total
1.	Domestic Purpose	1.0	1.0	2.0
2.	Gardening	0.0	1.6	1.6
3.	INDUSTRIAL			
	Mfg. Process Water	0.0	16.0	16.0
	Washing	0.0	4.0	4.0
	Boiler	0.0	10.0	10.0
	Total water Consumption (Domestic)	0.0	2.6	3.6
	Total water Consumption (Industrial)	0.0	30.0	30.0

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)

Sr No	Category	Waste Water Generation In KLD		
		Existing	Additional	Total
1.	Domestic Purpose	0.8	0.8	1.6
2.	INDUSTRIAL			
	Mfg. Process (Acid Stream)	0.0	16.0	16.0
	Washing	0.0	4.0	4.0
	Boiler	0.0	1.0	1.0
	Total Waste water Generation (Domestic)	0.8	0.8	1.6
	Total Waste water generation (Industrial)	0.0	21.0	21.0

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)

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

Comments:

- 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 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.

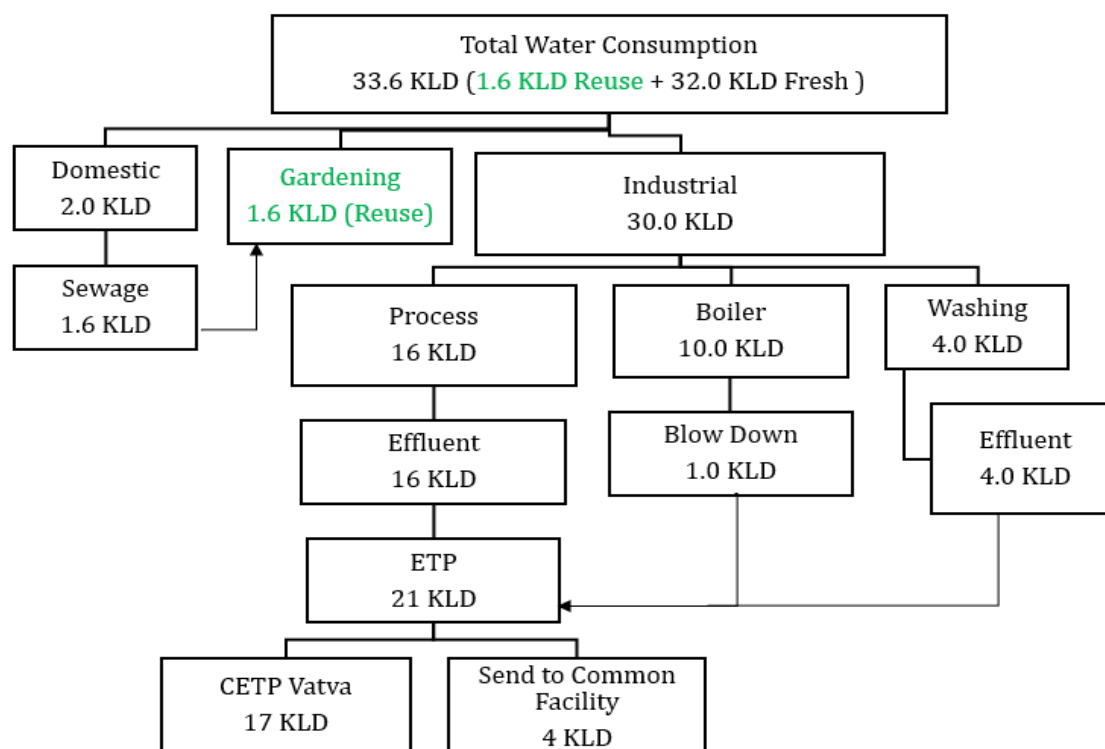
D-5a Break-up of waste water disposal & facility (For Industrial)

Sr. no.	Quantity KLD	Facility
1	4.0	Common facility
2	17.0	CETP Vatva
Total	21.0	

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

Membership certificate of M/s: Common facility and CETP vatva dated 08/03/2022

D-5b Simplified water balance diagram



D-5c Summary

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	33.6	
Quantity to be recycled (B)	1.6	
Total fresh water requirement (C)	32.0	

	Ensure Total water requirement = Recycled water + Fresh water i.e. A = B + C					
Comments:						
Unit shall adopt appropriate methods for segregation of waste water streams based on characteristics at source and its sound management keeping in view direction under section 18 (1) (b) of the Water (Prevention and Control of Pollution) act, 1974 issued by CPCB regarding compliance of CETP						
E	AIR					
E-1	Power (Electricity) requirement :250 KVA					
E-2	Flue gas emission details					
-						
Sr. no	Stack attached to	Stack height in meter	Fuel	Consumption	APCM	Remark
1	Steam Boiler 1 TPH	30	Natural gas	200 SCM/Day	Adequate to Stack height	Proposed
2	Hot Air Generator for SFD 4 Lac Kcal/Hr	30	Natural gas	400 SCM/Day	Adequate to Stack height	Proposed
-						
E-3	Process gas					
-						
Sr no	Stack attached to	Stack height in meter	APCM	Type of Emission Pollutant	Remark	
1	Spin Flash Dryer (200 kg/hr.)	Common Stack with HAG	Bag filter + Cyclone Separator	PM	Proposed	
-						
E-4	Fugitive emission details with its mitigation measures.					
<ul style="list-style-type: none"> ➤ The entire manufacturing activities shall be carried out in the closed reactors and regular checking and maintenance of reactors shall be carried out to avoid any leakages. ➤ The tank vents shall be equipped with either a carbon filter or an oil trap to prevent water vapor from entering the tank as it breathes. ➤ 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 ➤ 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. ➤ All the raw materials shall be stored in isolated storage area and containers tightly closed. ➤ There shall also be provision of adequate ventilation system in process plant and hazardous chemical storage area. 						
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 						

<p>has been proposed the Air pollution Control measures so as to achieve the emission norms prescribed by the competent authorities.</p> <p>➤ 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.					
F-1		Types of solvents, Details of Solvent recovery, % recovery, reuse of recovered Solvents etc.					
Sr. No	Name of Product	Solvent	Total Solvent Input (Kg)	Qty of Solvent Recycled (Kg)	Qty of Losses (Kg)	% Recovery	% Losses
1	Beta blue	Xylene	1500	1450	50	99.0	1.0
F-2		VOC emission sources and its mitigation measures					
<p>Measures for achieving maximum solvent recovery and minimize VOC generation:</p> <p>➤ The fugitive emissions in terms of handling losses shall get reduced by proper storage and handling.</p> <p>➤ Hazardous chemicals shall be stored as per standard criteria.</p> <p>➤ Periodically monitoring shall be carried out as per the post project monitoring plan.</p> <p>➤ Proper ventilation in storage & production area shall be ensured</p> <p>➤ All materials must be stored in suitable packing to prevent contamination of air.</p> <p>➤ Enclosed system & efficient procedures for materials charging shall be ensured.</p> <p>➤ Procedures for start-up shut down, operation & maintenance procedures shall be established & maintained.</p> <p>The coverage of greenbelt around the plant also acts as natural barrier to stop carrying of dust along with the wind current.</p>							
F-3		LDAR proposed:					
<p>Leak Definition</p> <ul style="list-style-type: none"> • The entire manufacturing activities & distillation process shall be carried out in totally closed system. • Regular maintenance of the pipeline and valves & fittings shall be carried out regularly to avoid any leakages. • Distillation column shall be connected with condenser where cooling water shall be used as media and also equipped with vacuum system. • The condenser shall be provided with the sufficient HTA and residence time to achieve more than 98% recovery. • During the manufacturing activity as well as during distillation process 3% of the total solvent shall be lost; approx. 97 % of solvent shall be recovered during the process. The fresh solvent requirement shall depend on solvent loss during distillation as well as manufacturing activity. <p>Following steps shall be followed for effective implementation of LDAR Program:</p> <ol style="list-style-type: none"> 1. Process Controls 2. Emissions control program 							

3. Selection of appropriate method for leak detection
4. Scheduling and checklist for Leak Detection
5. Methods for rectification of identified leaks
6. Frequency of Monitoring
7. Record keeping of LDAR Program

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

Comments:

- 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	Types of Hazardous Waste	Source	Category	Existing MT/ Year	Propose MT/ Year	Ultimate MT/Year	Disposal
1	ETP Sludge	ETP Plant	35.3	-	150	150	Collection, storage, Transportation and Dispose to Active TSDF Site
2	Used Oil	Plant machinery	5.1	0.1	0.1	0.2	Collection, storage, Reuse within premises.

3	Empty barrels/ Container/ Liners contaminated	Material Storage and Handling	33.1	-	10	10	Collection, storage, Transportation and Dispose by selling to Registered Recycler		
4	Solvent Residue	Distillation Unit	26.4	NIL	28	28	Collection, Storage, And Send to CHWIF		
5	Spent Solvent	Beta blue	26.3	NIL	1440	1440	Collection, Storage, And Reuse With in Plant Premises in Process After Distillation		
<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"> ✓ The unit has Utilized natural gas as a fuel, No fly Ash generation ✓ STP sludge generation shall be 1.0 MTPA <p>Comments:</p> <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>-</p> <p>-</p> <p><u>Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.</u></p>									
Sr No	Name of Raw Material	Cas No.	State	Kg per MT Of Product	Max Storage (MT)	Capacity Drum/ bag (Kg/ Liter)	No. Bag/ Drum	Storage	MOC
1.	CPC	147-14-8	Solid	1000	20	25	800	bag	HDPE
2.	Caustic	1310-73-2	Solid	30	0.6	25	24	bag	HDPE
3.	Xylene	1330-20-7	Liquid	1500	30	200	150	drum	HDPE

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

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

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE	<ul style="list-style-type: none"> • First Aid Procedures: • Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If the victim is not breathing, provide artificial respiration. Get medical attention. • Ingestion: Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, keep head low so that vomit does not enter lungs. Never give anything by mouth to an unconscious person. GET MEDICAL ATTENTION IMMEDIATELY. • Skin Contact: Wash affected area with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if symptoms occur. • Eye Contact: Check for and remove contact lenses. Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention. • General Advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. • Notes to Physician: Treat symptomatically. Symptoms may be delayed.
CORROSIVE & CHEMICALS	<ul style="list-style-type: none"> • The charging of material shall be carried out by PLC based SCADA Fully Atomization System • Dyke wall provided • Dyke wall with sufficient size is provided.

	<ul style="list-style-type: none"> • Tank, valve, pipeline are checked and maintain, in good condition. • Apron, Hand gloves, gumboot, goggles and helmet shall be provided. • ISI Portable fire extinguisher & Hydrant line is provided as per TAC norms • Sufficient amount of sand/soil are kept to control any spillage. • Eye washer cum shower is provided near tank-farm area. • Level indicator provided. • Vent line dipped in water shall be provided. • RCC foundation shall be provided. • Transfer material to another empty tank/ Vessel. 					
<p>➤ Applicability of PESO: Not Applicable</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 shall 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>Type of Process</th> <th>Safety measures including Automation</th> </tr> </thead> <tbody> <tr> <td> Process safety </td> <td> <ul style="list-style-type: none"> • Flame proof light fittings shall be installed in the plant. • Safety measures shall be adopted from the design stage. • The solvent shall be handle through receiver tank and recover solve store in receiver tank • Safety Valve and pressure gauge shall be provided on reactor and its • Utility like Chilling, cooling, vacuum, steaming and its alternativ provided to control reaction parameters in a safe manner. • Free Fall of any flammable material in the vessel shall be avoided. • Static earthing provision shall be made at design stage to all solver equipments, reactors, vessels & powder handling equipment. • Any reaction upsets shall be confined to the reaction vessel itself. • All emergency valves and switches and emergency handling facilities easily assessable. • Further all the vessels shall be examined periodically by a competent person under the Gujarat Factory Rules. • All the vessels and equipment shall be earthed appropriately and against Static Electricity. Also for draining in drums proper earthing shall be provided. • Materials shall be transferred by pumping through pipeline or by va drums. • All solvents and flammable material storage tanks shall be stored the process plant. </td> </tr> </tbody> </table>	Type of Process	Safety measures including Automation	Process safety	<ul style="list-style-type: none"> • Flame proof light fittings shall be installed in the plant. • Safety measures shall be adopted from the design stage. • The solvent shall be handle through receiver tank and recover solve store in receiver tank • Safety Valve and pressure gauge shall be provided on reactor and its • Utility like Chilling, cooling, vacuum, steaming and its alternativ provided to control reaction parameters in a safe manner. • Free Fall of any flammable material in the vessel shall be avoided. • Static earthing provision shall be made at design stage to all solver equipments, reactors, vessels & powder handling equipment. • Any reaction upsets shall be confined to the reaction vessel itself. • All emergency valves and switches and emergency handling facilities easily assessable. • Further all the vessels shall be examined periodically by a competent person under the Gujarat Factory Rules. • All the vessels and equipment shall be earthed appropriately and against Static Electricity. Also for draining in drums proper earthing shall be provided. • Materials shall be transferred by pumping through pipeline or by va drums. • All solvents and flammable material storage tanks shall be stored the process plant. 		
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	<ul style="list-style-type: none"> • Caution note, safety posters, stickers, periodic training & Updation in safety and emergency preparedness plan shall be displayed and conducted. • As Per GFR 68-U Rules Prescribed Under Schedule 8A. Our total employ shall be 15 nos. We shall proposed to provide OHC in Admin building with full equipped first aid box Also • we shall appointment Medical Officer on retainer-ship basis and carry out the pre-employment and periodical medical examination as stipulated
H-3	Details of Fire Load Calculation
Total Plot Area:	1263.0
Area utilized for plant activity:	554.5
Area utilized for Hazardous Chemicals Storage:	-
Number of Floors:	GF+2
Water requirement for firefighting in KLD:	3.327 (120 Minutes)
Water storage tank provided for firefighting in KLD:	100 KL (2772.5 Minutes)
Details of Hydrant Pumps:	6.0 Inch Diameter fire hydrant line shall be provided connected to Jockey Pump Followed by Diesel Pump having 07 bar pressure with sprinkler system. The jockey pump is placed with the fire water tank having capacity of 100 KL.
Nearest Fire Station:	Jashodanagarfire station With 3.15 KM distance
Applicability of Off Site Emergency Plan:	Yes
Comments:	
<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:	10
Number of Contractual person/Labour:	15
Area provided for OHC:	15 Sq. m
Number of First Aid Boxes:	At least one box containing such items and placed and maintained in accordance with the requirements of Sec. 45 is separately provided.
Nearest General Hospital:	Civil Hospital Ahmedabad @ 15.0 Km
Name of Antidotes to be store in plant:	Injection -morphia, pethidins, atropins, adrenaline, coramine, novocan Antidotes: Fomepizole, formic acid
-	

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 Lacs)	Operating Cost (Lacs /Month)	Maintenance Cost (Lacs/ Month)	Total Recurring Cost (Lacs/ Month)
1	Effluent Treatment Plant	Installation of ETP and Common facility	10.0	0.70	0.10	0.80
2	Air	Installation of stack/vent & it's monitoring facilities including provision of air pollution control system	5.0	0.30	0.10	0.40
3	AWH Monitoring	To conduct EMS efficacy & environment monitoring	-	0.50	-	0.50
4	Hazardous Management	Getting membership of TSDF site	1.0			
5	Green belt development	Development of Greenbelt Area	1.15	-	0.20	0.20
6	Health & Safety	Provision of Occupational Health Centre with Antidotes	5.0	0.5	0.2	0.7
7	Fire Prevention	Provision of Safety Measures including Fire water tank, Fire Detectors, Sensors, Alarm, Fire Hydrant, Fire Extinguishers, Proxymate Suits, Foam Trolley, Lightening arrestors etc.	20.0	1.0	0.5	1.5
8	Other	CER Cost	1.0	-	-	-
		Provision of PLC based SCADA system	10.0	2.6	1.0	3.6
Total			53.15	5.6	2.1	7.7

Comments:

- 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) Committee noted the following:

- At present the unit is involved in Mixing Rebranding and repacking of Dyes & dyes-Stuff with Zero Liquid Discharge. Unit has proposed this manufacturing activity and wastewater generated from manufacturing and other ancillary process shall be partially sent to CETP GREEN and Partially to common spray drying facility

13) Committee has asked PP to justify the compliance of 18 (1)(b) direction issued to CETP in which no additional hydraulic load permitted

14) Technical Expert of PP informed that PP intent to discharge their treatment wastewater to CETP Green as unit has obtained membership of CETP very initial stage of commission of CETP. They have CC&A for manufacturing valid till 1995 and after that they have closed their plant. The PP informed that after that CEPI was imposed and they are not able to make an application for Environment Clearance

15) Committee observed that CETP has not obtained CCA for their expanded capacity. This project is having valid CCA, However there is no discharge permission into CETP as per the existing CCA.

After deliberation, it was unanimously decided to consider the project for further consideration only after satisfactory submission of the following:

1. Chronology of permission obtained and applied with authentic documentary evidence for CETP Discharge
2. Ensure compliance of direction under section 18 (1) (b) of the Water (Prevention and Control of Pollution) act, 1974 issued by CPCB regarding compliance of CETP

13	SIA/GJ/IND3/69368/2021	M/s. Yasho Industries limited PLOT NO. 583, 593, 596, 597, 598 Payal industrial Park, Industrial Infrastructure in PCPIR, Village: Pakhajan, Taluka; vagra Dist: Bharuch	EC
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Category of the unit: **5 (f)**

Project status: **New**

1) DETAILS OF APPLICATION:

1.1. Type of application:	EC-NEW
1.2. Proposal no.	SIA/GJ/IND3/69368/2021
1.3. Category of Project:	5 (f) – B1
1.4. Date of application:	16-03-2022

1.5. Documents Submitted by Project Proponent (PP)	EIA report, Form-2, EMP
1.6. TOR No. & Date:	SIA/GJ/222311/2021 dated 23-11-2021
1.7. Date of Public hearing	Not applicable
1.8. Technical expert / Environmental Consultant:	M/s. Satva Environ Consultancy
1.9. SEAC Meeting No. and Date:	399 th meeting dated 11.04.2022
1.10. Compliance of Existing EC & CCA	Not Applicable (This is a new Unit)

2) This is a NEW unit and now proposed for manufacturing of synthetic organic chemicals as mentioned below:

Sr. No.	Name of Product	Cas No.	Total Quantity (MT/Month)	End Use of Products
1.	4,4'-methylene bis (dibutyl dithiocarbamate) (YALUB 44 MBC)	10254-57-6	250	Lubricant additive
2.	2,5-dimercapto-1,3,4-thiadiazole derivative (YALUB DM 86)	13539-13-4	50	
3.	1,3,4-thiadiazole-2(3H)-thione,5,5-dithiobis (YALUB DM 89)	72676-55-2	125	
4.	2,5-Dimercapto-1,3,4-thiadiazole (YALUB DMTD)	1072-71-5	125	
5.	4-(1-methyl-1-phenylethyl)-N-[4-(1-methyl-1-phenylethyl)phenyl]aniline (QUREANTI ADA)	10081-67-1	167	Rubber antioxidant
6.	2-mercapto toluimidazole (QUREANTI MMB)	53988-10-6	167	
7.	1,3-dihydro-4(or 5)-methyl-2H-benzimidazole-2-thione, zinc salt (QUREANTI ZMMB)	61617-00-3	167	
8.	4-[(morpholinothio)thioxomethyl] morpholine (QUREACC OTOS)	13752-51-7	83	
9.	2-mercaptobenzothiazole (QUREACC MBT)	583-39-1	167	
10.	2,4,6-Trimercapto-S-Triazine (QUREACC TST)	638-16-4	42	
11.	2,2'-[1,3-Phenylenebis (oxy)] bisethanol (YAPOX R 10/40)	102-40-9	21	Chain extender
12.	2-aminothiazole (YAPOX 2-AT)	96-50-4	42	Intermediate
13.	2,2,4-Trimethyl-1,2-dihydroquinolone, Polymerised (QUREANTI TMQ)	26780-96-1	833	Rubber antioxidant
14.	4,4'-dithiodimorpholine (QURECURR DTDM)	103-34-4	83	Aroma
15.	Anethole (YAROMAX ANT)	4180-23-8	167	
16.	Alkylated Phenyl Alpha Naphthylamine (YALUB NA-A)	437-450-6	50	Lubricant additive
17.	Ashless Alkyl Thiadiazole (YALUB DM 84)	91648-65-6	25	
18.	Benzeneamine, N-phenyl-, reaction products	68411-46-1	2500	Lubricant

	with 2,4,4- trimethylpentane (YALUB BODPA)			additive
19.	Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)4-hydroxy,C 7-9 branched alkyl esters (YALUB PA 135)	125643-61-0	1667	
20.	Bis(4-(1,1,3,3-tetramethylbutyl)phenyl)amine (YALUB DODPA/QUIREANTI OCD)	15721-78-5	417	
21.	bis[O,O-bis(2-ethylhexyl) dithiophosphorato-S,S']dioxodi-μthioxodimolybdenum (YALUB LA)	947-946-1	83	
22.	Bismuth dimethyldithiocarbamate (QUIREACC BiDD)	21260-46-8	4	Rubber accelerator
23.	Benzotriazole (YAPOX BZT)	95-14-7	417	Engine Coolants, Paints & Ink, etc.
24.	Copper dimethyldithiocarbamate (QUIREACC CDMC)	137-29-1	4	Rubber accelerator
25.	Copper 2-mercaptobenzothiazolate (QUIREACC CMBT)	32510-27-3	4	
26.	Copper Dibutyl Dithiocarbamate (YAPOX CDBC)	13927-71-4	83	Stabilizer
27.	Dinonylated diphenylamine (YALUB DND)	701-385-4	2500	Lubricant additive
28.	Disodium 2,5-dimercapto-1,3,4-thiadiazole, 36% aqueous solution (YALUB NATD)	50530-45-5	42	Lubricant additive
29.	Diisopropyl xanthogen polysulfide (QUIREACC DIXP)	137398-54-0	8	Rubber accelerator
30.	Dipentamethylene Thiuram hexasulfide (QUIREACC DPTT)	971-15-3	83	
31.	Diphenyl Thiourea (QUIREACC DPTU)	102-08-9	42	
32.	Dimethyl Diphenyl thiuram Disulfide (QUIREACC MPTD)	53880-86-7	8	
33.	Dimer acid (YAPOX DIMER ACID)	61788-89-4	833	Adhesives, Surfactants
34.	Ethylene Thiourea (QUIREACC ETU)	96-45-7	42	Rubber accelerator
35.	Hydroquinone and Catechol	123-31-9 & 120-80-9	1250	Intermediate
36.	Hydroquinone bis(2-hydroxyethyl) ether (YAPOX CL 30/10)	104-38-1	417	Chain extender
37.	Mercaptobenzothiazole Disulfide (QUIREACC MBTS)	120-78-5	417	Rubber accelerator
38.	Molybdenum Dithiocarbamate (YALUB 525 S)	441-570-4	25	Lubricant additive
39.	Molybdenum Dialkyldithiocarbamate (YALUB 822 M)	71342-89-7	29	
40.	Molybdenum Dithiocarbamate (YALUB 3000 D)	948-019-1	29	

41.	Molybdenum, bis(dibutylcarbamodithioato)di- μ -oxodioxodi-, sulfurized (YALUB MDBC)	68412-26-0	83	
42.	Mono methyl ether of hydroquinone (YAPOX MEHQ)	150-76-5	833	Polymerisation Inhibitor
43.	Mercapto Benzimidazole (QUREANTI MB)	583-39-1	42	Rubber antioxidant
44.	N-[(1,1,3,3-tetramethylbutyl)phenyl]naphthalen-1-amine (YALUB NA 06)	51772-35-1	83	Lubricant additive
45.	Nickel Dibutyl Dithiocarbamate (QUREANTI NDBC)	13927-77-0	25	Rubber antioxidant
46.	N-cyclohexylbenzothiazole-2-sulfenamide (QUREACC CBS)	95-33-0	833	Rubber accelerator
47.	N-Tertiarybutyl-2-Benzothiazole Sulfenamide (QUREACC TBBS)	95-31-8	833	
48.	Organomolybdenum complex of organic amide (YALUB 85 M)	445409-27-8	83	Lubricant additive
49.	p-Benzoquinone (YAPOX PBQ)	106-51-4	250	Intermediate
50.	Phenothiazine (YAPOX PTZ)	92-84-2	417	
51.	Piperidinium pentamethylenedithiocarbamate (QUREACC PPD)	98-77-1	8	Rubber accelerator
52.	Sodium Dibutyl Dithiocarbamate (QUREACC SDBC)	136-30-1	42	Rubber accelerator
53.	Sodium Hydrosulfide (YAPOX NaSH)	16721-80-5	417	Intermediate
54.	Thiodiethylene bis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate] (YALUB PA 15 S)	41484-35-9	83	Lubricant additive
55.	Tolytriazole derivatives (YALUB TT 33)	939-700-4	83	Lubricant additive
56.	Triallyl cyanurate (QUREACC TAC)	101-37-1	167	Rubber accelerator
57.	Triallyl isocyanurate (QUREACC TAIC)	1025-15-6	167	Rubber accelerator
58.	Triallyl Cyanurate 50% (QUREACC TAC 50)	101-37-1	83	Rubber accelerator
59.	Triallyl Cyanurate 70% (QUREACC TAC 70)	101-37-1	83	
60.	Triallyl Isocyanurate 50% (QUREACC TAIC 50)	1025-15-6	83	
61.	Triallyl Isocyanurate 70% (QUREACC TAIC 70)	1025-15-6	83	
62.	Tertiary butyl-2-benzothiazolesulfenimide (QUREACC TBSI)	3741-80-8	417	
63.	Tetra Butyl Thiuram Disulfide on carrier (QUREACC TBTD 60)	1634-02-2	13	
64.	Tetra Butyl Thiuram Disulfide (QUREACC TBTD)	1634-02-2	13	
65.	Tetrabenzyl Thiuram Disulfide (QUREACC TBzTD)	10591-85-2	250	

66.	Tellurium Diethyldithiocarbamate (QUREACC TDEC)	20941-65-5	8	
67.	Tetra Ethyl Thiuram Disulfide (QUREACC TETD)	97-77-8	25	
68.	Tetra(isobutyl)thioperoxydicarbamic acid (QUREACC TiBTD)	3064-73-1	83	
69.	Tetra Methyl Thiuram disulfide (QUREACC TMTD)	137-26-8	833	
70.	Tetra Methyl Thiuram monosulfide (QUREACC TMTM)	97-74-5	42	
71.	Thiocarbohydrazide (YAPOX TCH)	2231-57-4	42	Intermediate
72.	Tolyhydroquinone (YAPOX THQ)	96937-50-7	42	Intermediate
73.	Tolytriazole 50% Sodium Salt (YAPOX 50% TTZ)	64665-57-2	417	Engine Coolants, Paints & Ink
74.	Tolytriazole (YAPOX TTZ)	29385-43-1	417	
75.	Trimethylolpropane trimethacrylate (YAPOX TMPTMA)	3290-92-4	167	
76.	YALUB 1103 (552)	Mixture	417	
77.	YALUB 1104 (323)	Mixture	417	
78.	YALUB 1105 (521)	Mixture	417	
79.	YALUB POLY	25154-01-2	83	
80.	YAPOX QDO/DBQDO	105-11-3	42	Intermediate
81.	Zinc Diamyldithiocarbamate in 50% oil (YALUB ZDD)	15337-18-5	42	Lubricant additive
82.	Zinc-2-mercapto benzimidazole (QUREANTI ZMB)	3030-80-6	25	Rubber accelerator
83.	Zinc dibenzyl dithiocarbamate (QUREACC ZBEC)	14726-36-4	417	Rubber accelerator
84.	Zinc Dialkyl Dithiophosphate (YALUB ZDDP)	68649-42-3	2083	Lubricant additive
85.	Zinc Benzenesulfinate Dihydrate (QUREACC ZBS)	24308-84-7	167	Rubber accelerator
86.	Zinc diacrylate (QUREACC ZDA)	14643-87-9	83	Rubber accelerator
87.	Zinc dimethacrylate (QUREACC ZDMA)	13189-00-9	83	Rubber accelerator
88.	Zinc dibutyldithiocarbamate (QUREACC ZDBC)	136-23-2	417	Rubber accelerator
89.	Zinc diethyldithiocarbamate (QUREACC ZDEC)	14324-55-1	417	Rubber accelerator
90.	Zinc dimethyl dithiocarbamate (QUREACC ZDMC)	137-30-4	417	Rubber accelerator
91.	Zinc ethyl phenyl dithiocarbamate (QUREACC ZEPC)	14634-93-6	42	Rubber accelerator
92.	Zinc diisobutyldithiocarbamate (QUREACC ZIBC) ZIBC	36190-62-2	42	Rubber accelerator

93.	Zinc Isopropylxanthate (QUREACC ZIX)	1000-90-4	4	Rubber accelerator
94.	Zinc-2-mercaptobenzothiazole (QUREACC ZMBT)	155-04-4	250	Rubber accelerator
95.	Zinc pentamethylenedithiocarbamate (QUREACC ZPD)	13878-54-1	4	Rubber accelerator
96.	MG ADA 80 GA	10081-67-1	1700	Accelerator for rubber compounds
97.	MG BMT 70	72676-55-2		
98.	MG BMT 75	72676-55-2		
99.	MG CaO 80	1305-78-8		
100.	MG CBS 80	95-33-0		
101.	MG DETU 75	105-55-5		
102.	MG DETU 80	105-55-5		
103.	MG DIXP 40	137398-54-0		
104.	MG DOTG 65 GA	97-39-2		
105.	MG DOTG 75	97-39-2		
106.	MG DPG 80	102-06-7		
107.	MG DPTT 70	971-15-3		
108.	MG DPTT 75	971-15-3		
109.	MG DPTU 75	102-08-9		
110.	MG DTDC 80	23847-08-7		
111.	MG DTD 80	103-34-4		
112.	MG ETU 75	96-45-7		
113.	MG ETU 80	96-45-7		
114.	MG HDMC 65 GA	143-06-6		
115.	MG MBT 75	149-30-4		
116.	MG MBT 80	149-30-4		
117.	MG MBTS 70	120-78-5		
118.	MG MBTS 75	120-78-5		
119.	MG MMB 70	53988-10-6		
120.	MG MPTD 70	10591-84-1		
121.	MG NDBC 75	13927-77-0		
122.	MG OTOS 75	13752-51-7		
123.	MG PVI 80	17796-82-6		
124.	MG S 80	7704-34-9		
125.	MG TAIC 50	1025-15-6		
126.	MG TBBS 80	95-31-8		
127.	MG TBTD 40	1634-02-2		
128.	MG TBzTD 70	10591-85-2		
129.	MG TBzTD 80	10591-85-2		
130.	MG TDEC 75	20941-65-5		
131.	MG TETD 75	97-77-8		
132.	MG TiBTD 75	3064-73-1		
133.	MG TiO ₂ 80	13463-67-7		
134.	MG TMTD 70	137-26-8		
135.	MG TMTD 75	137-26-8		

136.	MG TMTD 80	137-26-8		
137.	MG TMTM 80	97-74-5		
138.	MG TZ 62	638-16-4		
139.	MG ZBEC 70	14726-36-4		
140.	MG ZBOP 50	68649-42-3		
141.	MG ZBS 75	24308-84-7		
142.	MG ZDBC 75	136-23-2		
143.	MG ZDBC 80 GA	136-23-2		
144.	MG ZDBC 80	136-23-2		
145.	MG ZDEC 75	14324-55-1		
146.	MG ZDMC 75	137-30-4		
147.	MG ZDMC 70	137-30-4		
148.	MG ZDMC 80	137-30-4		
149.	MG ZMMB 50	61617-00-3		
150.	MG Zn Trans 70	3486-35-9		
151.	MG ZnO 80	1314-13-2		
152.	MG ZnO 85	1314-13-2		
153.	MG ZnO Aktiv 70	1314-13-2		
Total			28550.00	

- 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 11.04.2022.
- 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) The baseline environmental quality has been assessed for various components of the environment viz. air, noise, water, biological and socioeconomic aspect. The baseline environmental study has been conducted for the study area of 10 km radial distance from project site for the period November-2020 to January-2021. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx, NOx, VOCs Cl2 and H2S at Eight locations, including the project site. Values conform to the prescribed standards for Ambient Air Quality. The incremental Ground Level Concentration (GLC) has been computed using "AERMOD". Incremental GLC's for all parameters remain within 500 m from the project site. The resultant concentrations are within the NAAQS. The modelling study proved that the air emissions from the proposed plant would not affect the ambient air quality of the region in any significant manner. The ambient air quality around the proposed project site shall remain within the National Ambient Air Quality Standards (NAAQS).
- 8) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-

Site Emergency Plan has been covered in the RA report.

- 9) This project site is located within the Payal industrial Park which is Industrial Infrastructure falls in PCPIR.
- 10) The entire effluent shall be treated in Primary and Secondary tertiary ETP and treated waste water will be sent to Payal Industrial Park, CETP vide letter no: PIP/P1/01 Dated 15-01-2022. Committee observed that the Payal Park is yet not developed and they are in process to get required permissions from the concern authorities. As the CETP is not in existence, upon asking regarding waste water management, PP ensured that they will not start production till CETP of Payal Park is commissioned.
- 11) Committee asked to submit the following:
- ✓ Notarized Undertaking for Effluent Disposal that Yasho industries Limited not going to initiate production till Common Effluent Treatment Plant is commissioned
 - ✓ Time Bar Chart for Construction, Installation, Commissioning and operation schedule for Yasho Industries Limited
 - ✓ Time Bar Chart for Legal permission status of Payal Industrial Park. Also, for Construction, Installation, Commissioning and operation schedule for CETP proposed by Payal Industrial Park
 - ✓ Provide spare tank for EO Storage and Carbon Sulphide Storage
- 12) Later on PP submitted following details through email on dated 13/04/2022
- ✓ PP has submitted Notarized undertaking
 - ✓ PP has submitted time bar for Construction, Installation, and Commissioning and operation schedule for project and also given time states that the trial run of the project shall be initiated in June 2023.
 - ✓ PP has also submitted time bar chart for Payal Industrial Park project planning activity and also given planning schedule for CETP Construction, Installation, Commissioning and operation by PAYAL PROPERTIES PRIVATE LIMITED.
 - ✓ PP has agreed to propose spare tank for EO Storage and Carbon Sulphide Storage and also submitted revised SEAC Format.
- 13) Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (I) (b) of the Environment Impact Assessment Notification 2006.
- 14) Compliance of the ToR found satisfactory.
- 15) 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. 400 Crores

Break-up of proposed project Cost:

Details	Project Cost (Rs. In Crores)
Land	70.00
Building	123.00
Machinery	161.50
Env. & Safety	40.50
Miscellaneous	5.00
Total	400.00

A-2 Details of CER -

PP shall carry out CER activities as below:

- ✓ To provide Desalination Plant @ 25 KL/Day at Four Villages namely Pakhajan, Nadarkha, Pipaliya , Nandida
- ✓ To increase the depth of Village Pond to maximize the rain water storage which is also useful to decrease the salinity of surrounding soil namely Nandida, Akhod, Nadarkha, Pipaliya
- ✓ Solar Panel Tree 15 KW in Village namely Pakhajan, Nadarkha, Pipaliya
- ✓ Over Head Water Storage shall be constructed for water distribution at Four Villages namely Pakhajan, Nadarkha, Pipaliya , Nandida

B Land / Plot ownership details:

Sr. no	Plot No.	Area Sq.m	Details
1	PLOT NO. 583, 593, 596, 597, 598	172399	Deed of Conveyance made between Between Payal industrial park and Yasho Industries Limited
		172399	

B-1 Plot area

Total Plot area
172399 Sq. m.

B-2 Area adequacy

Sr No.	Description of Area	Ground Floor	First Floor	Second Floor	Third Floor	TOTAL	Percentage
		Area (m ²)	Area (m ²)	Area (m ²)	Area (m ²)		
1	Process Plant -1	2925	2925	2925	2925	11700	1.71
2	Process Plant -2	2925	2925	2925	2925	11700	1.71
3	Process Plant -3	2925	2925	2925	2925	11700	1.71
4	Process Plant -4	2925	2925	2925	2925	11700	1.71
5	Raw Material Storage Area	4050	-	-	-	4050	2.37
6	Finished Products Storage Area	4050	-	-	-	4050	2.37

7	ETP Area	2702.5	-	-	-	2702.5	1.58
8	Hazardous Waste Storage	354	-	-	-	354	0.21
9	Scrap yard	354	-	-	-	354	0.21
10	Utility Area	2047.5	-	-	-	2047.5	1.20
11	Coal Storage Area	1365	-	-	-	1365	0.80
12	Tank farm Area	3276	-	-	-	3276	1.92
13	EO tank Storage	1610	-	-	-	1610	0.94
14	Admin Building	2800	-	-	-	2800	1.64
15	OHC		-	-	-		
16	Fire and safety Equipment Room	1000	-	-	-	1000	0.59
17	Green Belt	56892	-	-	-	56892	33.00
18	Open & Road	68491	-	-	-	67276	39.44
19	Future Plant area	5850	-	-	-	5850	3.43
20	Future RM/ FG Storage area	5850	-	-	-	5850	3.43
	Total Area	172399				100	

Area Adequacy table:

Sr No.	Description of Area	Criteria for Storage	Inventory Required (MT) (KL)	Area Required (m ²)	Area Proposed (m ²)
1	Finished Product Storage Area (3 Days inventory)	28550 MT/Month	3426 MT/Month	3900	4050
2	Raw Material Store area in Drum and Bag (1 Week inventory)	2899 Drum 16825 Bag	608.80 420.625	1304 500	4050
3.	EO Storage Area	100 X 2 (1 Spare Tank + 01 Operational)	200	500	1610
3	Storage tank Area (PESO Applicable)	200 X 9	1800	2300	6496
4	Storage tank Area (PESO Applicable)	25 X 6	150	180	
5	Storage tank Area (Non PESO Applicable)	200 X 13	2600	3000	
5	Storage tank Area (Non PESO Applicable)	50 X 2 (1 Spare + 1 Operational)	50	150	
6	Effluent Treatment Plant	1160 KLD	1160 KLD	2000	2702
6	ETP Waste storage area (30 Day Inventory)	7000 MT/Annum	583		
7	Utility Area	-	Boiler, TFH	1500	3412.5
7	Fuel Area (3 Days)	195 MT/Day	585 MT	600	

	Storage)				
	Fly Ash Storage (3 Days Storage)	4095 MT/annum	45 MT	50	
8	Process waste storage (5 day Inventory)	14308 MT/Annum	240	260	354
9	Manufacturing Area	28550 MT/Month	-	11420	46800
10	Admin Area	-	-	500	2800
11	Occupation health Center	-	-	200	
12	Safety Equipment Room	-	-	100	1000
			TOTAL	28464	73275.5

Note: The unit is having Existing plot area of 172399 M2. The unit has proposed 46800 M2 area for production and dedicated 4050 area for raw material storage and proposed additional tank storage area of 6496 for material storage. The unit has proposed dedicated storage area for EO Storage. The unit has proposed dedicated storage area for PESO tank and Non PESO tank and proposed area for gas cylinder storage. The unit has adequate area for ETP, Process waste storage. Looking for production quantity and area of unit it is adequate for this proposed expansion.

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	56892 inside
% of total area	33% Outside

Comments:

The condition shall be given that -

- The PP shall develop green belt (56892 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		
	200		
-			
D	WATER		
D-1	Source of Water Supply		
<p>➤ GIDC Water Supply of Payal industrial Park</p> <p>Comments:</p> <p>➤ Prior permission from concerned authority shall be obtained for withdrawal of water.</p>			
D-2	Water consumption (KLD)		
-			
Sr. No	Category	Water Consumption KLD	Remark
1.	Domestic Purpose	100	
2.	Gardening	50	Utilized from STP
3.	INDUSTRIAL		
	Process	920	
	Washing	100	
	Boiler	540	80 KLD Cond. + 170 KLD Fresh
	Cooling	1215	70 KLD Cond. + 130 KLD fresh
	Scrubber	*5.0	
	Total water Consumption (Domestic)	100	
	Total water Consumption (Industrial)	2780	
	Total Water requirement	2930	
	Total Reuse	570	
	Total Fresh Water	2360	
-			
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)		
-			
Sr. No	Category	Waste Water Generation KLD	Remark
1.	Domestic Purpose	50	Send to STP
2.	INDUSTRIAL		

	Process water	980	
	Washing	100	
	Boiler	30	
	Cooling	50	
	Scrubber	5.0*	
	Total Waste Water Generation (Domestic)	50.0	
	Total Waste Water generation (Industrial)	1160	

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)

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

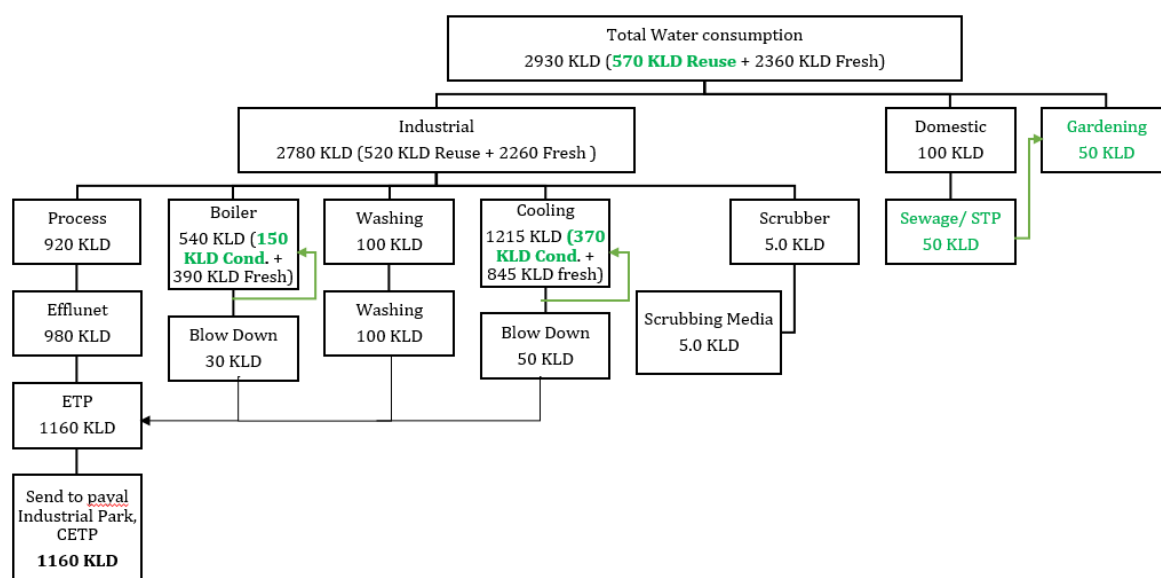
Comments:

- Domestic wastewater generation shall not exceed 50 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	1160.0	The entire Effluent shall be treated in Primary and Secondary tertiary ETP and Send to Payal Industrial Park, CETP vide letter no: PIP/P1/01 Dated 15-01-2022
Total	1160	
Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)		
Membership certificate of M/s: Payal Industrial Park, CETP vide letter no: PIP/P1/01 Dated 15-01-2022		

D-5b Simplified water balance diagram

**D-5c Summary**

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	2930	
Quantity to be recycled (B)	570	
Total fresh water requirement (C)	2360	
Ensure Total water requirement = Recycled water + Fresh water i.e. A = B + C		

Comments:

- Total water requirement for the project shall not exceed 2930 KLD. Unit shall reuse 570 KLD of Utility Condensate within premises. Hence, fresh water requirement shall not exceed 2360 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:
 - ✓ Total 1160 KLD waste water generation from manufacturing process and other ancillary operation shall be treated in Primary and Secondary tertiary ETP and Send to Payal Industrial Park CETP
- 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 :8000 KWA					
E-2	Flue gas emission details					
-						
Sr . no	Stack attached to	Stack height in meter	Fuel	Consumption	Type of Pollutants i.e. Air Pollutants	APCM
1	Steam Boiler (10.0 TPH)	35	Imported Coal	35 MT/day	PM SO ₂ NO _x	ESP+ water scrubber
2	Steam Boiler (10.0 TPH)	35	Imported Coal	35 MT/day		ESP+ water scrubber
3	Steam Boiler (10.0 TPH)	35	Imported Coal	35 MT/day		ESP+ water scrubber
4	Thermic Fluid Heater (15 Lakhs Kcal/hr.)	30	Natural gas or Imported Coal	5040 SCM/Day or 30 MT/Day		Multi Cyclone Separator + bag filter with Two Stage Water Scrubber
5	Thermic Fluid Heater (15 Lakhs Kcal/hr.)	30	Natural gas or Imported Coal	5040 SCM/Day or 30 MT/Day		Multi Cyclone Separator + bag filter with Two Stage Water Scrubber
6	Thermic Fluid Heater (15 Lakhs Kcal/hr.)	30	Natural gas or Imported Coal	5040 SCM/Day or 30 MT/Day		Multi Cyclone Separator + bag filter with Two Stage Water Scrubber
7	DG Set (225 KVA) Stand By 2 Nos.	05	Diesel	150 lit/hr		Adequate Stack Height

E-3	Process gas			
-				
Sr . no	Stack attached to	Stack height in meter	APCM	Types of Emission
1	Reaction Vessels -1 attached to Sulphonation Process	21	Two stage Alkali Scrubber	H2S
2	Reaction Vessels -2 attached to Sulphonation Process	21	Two stage Alkali Scrubber	H2S
3	Reaction Vessels -3 attached to Sulphonation Process	21	Two stage Alkali Scrubber	H2S
4	Reaction Vessels -4 attached to Sulphonation Process	21	Two stage Alkali Scrubber	H2S
5	Reaction Vessels -5 attached to Sulphonation Process	21	Two stage Alkali Scrubber	H2S
6	Reaction Vessels -6	21	Two stage Alkali Scrubber	H2S

	attached to Sulphonation Process					
7	Reaction Vessels -7 attached to Sulphonation Process	21	Two stage Alkali Scrubber	H2S		
8	Reaction Vessels -8 attached to Sulphonation Process	21	Two stage Alkali Scrubber	H2S		
9	Reaction Vessels (Chlorination)	21	Two stage Alkali Scrubber	Cl2		
10	Reaction Vessels (Chlorination)	21	Two Stage Water Scrubber	HCL		
-						
E-4	Fugitive emission details with its mitigation measures.					
<ul style="list-style-type: none"> ➤ The entire manufacturing activities shall be carried out in the closed reactors and regular checking and maintenance of reactors shall be carried out to avoid any leakages. ➤ The tank vents shall be equipped with either a carbon filter or an oil trap to prevent water vapour from entering the tank as it breathes. ➤ All the motors of pumps for the handling of hazardous chemicals shall be flame proof and provided with suitable mechanical seal with stand-by arrangement ➤ 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. ➤ All the raw materials shall be stored in isolated storage area and containers tightly closed. ➤ There shall also be provision of adequate ventilation system in process plant and hazardous chemical storage area. 						
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	Solvent	Total Solvent Quantity	Recover of Solvent	Loss of Solvent	% Of recovery	% Of Losses
1	Acetic acid	3570	3534	36	98.99	1.01
2	Acetone	2360	2336	24	98.98	1.02
3	alcohol	230	227	3	98.70	1.30

4	Benzene	2770	2742	28	98.99	1.01
5	Boron trifluoride etherate	46	45	1	97.83	2.17
6	butanol	225	222	3	98.67	1.33
7	cyclopropylamine	250	247	3	98.80	1.20
8	Dicholoro ethane	750	742	8	98.93	1.07
9	dicholoro methane	4725	4677	48	98.98	1.02
10	EDC	5150	5099	51	99.01	0.99
11	ethanol	4692	4645	47	99.00	1.00
12	ethyl acetate	38572	38186	386	99.00	1.00
13	ethylene dichloride	900.9	892	8.9	99.01	0.99
14	Formic acid	300	297	3	99.00	1.00
15	hexane	2765	2737	28	98.99	1.01
16	Isopropanol	1225	1213	12	99.02	0.98
17	Isopropyl Acetate	6000	5940	60	99.00	1.00
18	MCB	7800	7722	78	99.00	1.00
19	MEK	1765	1747	18	98.98	1.02
20	Methanol	20103	19299	804	96.00	4.00
21	methyl ethyl ketone	750	743	7	99.07	0.93
22	methylene dichloride	3456	3421	35	98.99	1.01
23	methylene isobutyl ketone	2400	2376	24	99.00	1.00
24	Mix xylene	100	99	1	99.00	1.00
25	mono ethylene glycol	218	216	2	99.08	0.92
26	monopropyl alcohol	63.6	63	0.6	99.06	0.94
27	n-butanol	400	396	4	99.00	1.00
28	N-Propanol	210	208	2	99.05	0.95
29	ONBC	50	49.5	0.5	99.00	1.00
30	O-xylene	1060	1049	11	98.96	1.04
31	T Butyl acetate	209	207	2	99.04	0.96
32	T-Butanol	25	24.9	0.1	99.60	0.40
33	Toluene	2540	2515	25	99.02	0.98
34	Tri methyl ortho acetate	150	149	1	99.33	0.67

F-2 VOC emission sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

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

F-3 LDAR proposed:**Leak Definition**

- The industry is engaged in the manufacturing of Synthetic Organic Chemicals, which require solvents during various unit processes.
- The spent solvent generated during the manufacturing process shall be recovered by way of distillation and shall be reused in the process. The process of the solvent recovery system is described hereunder;
- After completion of the reaction, the whole mass in the reactor shall be pumped to SS reactor which is subjected to the distillation to separate finished product and recover solvent.
- Firstly, the mass shall be distilled at required temperature and pressure where pure solvent shall be distilled out depending on their boiling points and it shall be collected in the recovered solvent storage tank and reused in the process.
- Vacuum shall also be applied as per requirement during distillation.
- The overall requirements and mass balance for the solvent based on mass balance of each product and summary has been worked out which is given in Table as above. The schematic diagram of the solvent recovery system is shown in the Figure

Measures for achieving maximum solvent recovery:

- The entire manufacturing activities & distillation process shall be carried out in totally closed system.
- Regular maintenance of the pipeline and valves & fittings shall be carried out regularly to avoid any leakages.
- Distillation column shall be connected with condenser where cooling water shall be used as media and also equipped with vacuum system.
- The condenser shall be provided with the sufficient HTA and residence time to achieve more than 98% recovery.
- During the manufacturing activity as well as during distillation process 2% of the total solvent shall be lost; approx. 98 % of solvent shall be recovered during the process. The fresh solvent requirement shall depend on solvent loss during distillation as well as manufacturing activity.

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

-

Leakage/ Component	Source of equipment leak	Detection Method
Valves	Flange leakage	Visual Check
Pump	From pump seal	Visual Check
Open vents from the tank top	Overflow of tank	High level alarm
High pressure leak	-	Audible Method
Connectors	Gasket failure and improperly torqued bolts on flanges.	For welded flanges place the probe at the outer edge of the flange-gasket interface and sample the circumference of the flange. If the source is rotating shaft, position the probe within 1 cm of the shaft seal interface for the survey.

Open ended line	At the point of line Incorrect implementation of block and bleed procedure	Place the probe inlet at approximately the entry of the opening to the atmosphere.			
-					
-					
Comments:					
<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				
S r. N o	Types of Hazardous Waste	Sources	Categ ory	Propose MT/Annum	Disposal
1.	ETP Sludge	ETP Area	35.3	7000	Collection, storage, Transportation and Dispose to Active TSDF Site
2.	Used Oil	Plant Machinery	5.1	0.5	Collection, storage, Reuse within premises.
3.	Discarded Container	Material handling and Storage	33.1	1500	Collection, storage, Transportation and Dispose by selling to Registered Recycler
4.	Spent Catalyst	Mfg. process	28.2	150	Collection, storage, send to supplier for Regeneration
5.	Spent Phosphoric acid	Anethole	26.3	150	Collection, storage, Transportation and reuse in Same process
6.	sodium bisulfide	Scrubbing Media YALUB ZDDP, QUREANTI MB, QUREACC ETU, QUREACC TMTM	26.3	11458	Collection, storage, Transportation and sell to actual User having permission Under Rule -9
7.	Sodium Chloride	Scrubbing Media QUREACC MBTS	26.3	1170	Collection, storage, Transportation and sell to actual User having permission Under Rule -9
8.	Spent HCL	Scrubbing Media (QURECURR	26.3	1530	Collection, Storage, Transportation & sell to (Rule -9) authorized

		DTDM)				agencies or actual users			
9.	Process Waste	Process	26.1	500		Collection, storage, Transportation and send for Co processing for Send for Active TSDF Site			
10.	Solvent Residue	Distillation Unit	26.4	400		Collection, Storage, And Send For Co-Processing or Send for CHWIF			
11.	Spent Solvent	Manufacturing process	--	20000		Collection, Storage, And Reuse With in Plant Premises in Process After Distillation			
<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 shall be 1404 MTPA. ✓ STP sludge generation shall be 50 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 or send to TSDF site for landfilling. 									
H	SAFETY details								
H-1	Details regarding storage of Hazardous chemicals								
-									
-									
Storage of Hazardous chemicals Tanks									
Sr No	Name of Chemical	State	Tank Capacity in KL	Number of Tank	Max Storage MT	IDLH ppm	Boiling Point °C	Flash Point °C	Nature of Chemical
1.	Isooctanol	Liquid	200	1	160	NA	91	82	Flammable
2.	N-Butanol	Liquid	200	1	160	1400 ppm	117.6 °C	35 °C	Flammable
3.	2-Ethyl hexyl alcohol	Liquid	200	1	160	NA	184 °C	77 °C	Flammable
4.	Ethylene Oxide	Gas	100	1 + 1 Spare	80	0.1 ppm	10.5 °C	-20 °C	Flammable

				Tank					
5.	Methanol	Liquid	200	1	180	6,000 ppm	64	11	Flammable
6.	Toluene	Liquid	25	3	60	500 ppm	110	4.4	Flammable
7.	Hexane	Liquid	25	3	60	1,100 ppm	69	-22.	Flammable
8.	Diisobutylene	Liquid	200	1	160	NA	104 C	-5 C	Flammable
9.	Diethylamine	Liquid	200	1	160	200 ppm	55 °C	-23 °C	Flammable
10.	Dimethylamine	Liquid	200	1	160	500 ppm	7 °C	-6.7 °C	Flammable
11.	Nonane	Liquid	200	1	160	200 ppm	151 °C	31 °C	Flammable
12.	Diphenylamine	Liquid	200	1	160	10 mg/m3	302 C	153 C	Danger to health
13.	Dibutylamine	Liquid	200	1	160	NA	159 °C	40.5 °C	Danger to health
14.	Dibenzylamine	Liquid	200	1	160	NA	300 °C	138 °C	Danger to health
15.	Piperidine	Liquid	200	1	160	1,400 ppm	106 °C	16 °C	Danger to health
16.	N-methyl aniline	Liquid	200	1	160	100 ppm	195 °C	86 °C	Danger to health
17.	Methyl acrylate	Liquid	200	1	160	1000 ppm	80 C	-3 °C	Danger to health
18.	Clove Oil	Liquid	200	1	160	NA	250 °C	NA	Danger to health
19.	Carbon Disulfide	Liquid	50	1 +1 Spare Tank	40	500 ppm	46 °C	-30 °C	Danger to health
20.	Hydrazine Hydrate	Liquid	200	1	160	50 ppm	120.1	NA	Danger to health
21.	Hydrogen peroxide	Liquid	200	1	160	75 ppm	106	NA	Danger to health
22.	Hydrochloric acid	Liquid	200	1	160	50 ppm	50.5	NA	Corrosive
23.	Sulfuric acid	Liquid	200	1	160	15 mg/m3	270	NA	Corrosive
24.	Aniline	Liquid	200	1	180	100 ppm	184.1	70	Danger to health
25.	Cyclohexylamine	Liquid	200	1	180	10 ppm	134 °C	27 °C	Danger to health
26.	Tert Butyl amine	Liquid	200	1	180	NA	46 °C	-38 °C	Flammable
27.	Chlorine Gas	Gas	0.900	3	2.7	10	-34	-	Toxic Gas

Storage of Hazardous chemicals in Tank

- The Entire plant shall be operated by PLC based SCADA DCS System
- Tank, valve, pipeline are checked and maintain, in good condition through preventive maintenance
- Joints are checked regularly to detect any Leakage.
- ISI Portable fire extinguisher & Fire Hydrant line is provided as per TAC norms.

- Flame proof electrical fittings / installation provided.
- Proper Earthing, Bonding & flange-to-flange jump ring is provided.
- Flame arrester provided on vent line.
- CCE approved Separate Storage area with door having locking arrangement.
- Auto & manual sprinkler provided.
- Spark arrester are installed on all vehicles inside the premises.
- Apron, Hand gloves, gumboot, goggles and helmet provided.
- Train operator employed.
- Eye washer & shower provided.
- Tank's thickness measured on regular interval.
- Good ventilation in the area.
- Flame arrester with breather valve.
- Perforated dip pipe in dyke wall shall be provided to monitor & detect any leakage from tank.
- Sump shall be made under dyke to recover leakage material from dyke.
- Tanks shall be kept under RCC dyke.
- Tanks shall be kept under shed.

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

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

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	<ul style="list-style-type: none"> • First Aid Procedures: • Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If the victim is not breathing, provide artificial respiration. Get medical attention. • Ingestion: Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, keep head low so that vomit does not enter lungs. Never give anything by mouth to an unconscious person. GET MEDICAL ATTENTION IMMEDIATELY. • Skin Contact: Wash affected area with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash

	<p>clothing before reuse. Get medical attention if symptoms occur.</p> <ul style="list-style-type: none"> • Eye Contact: Check for and remove contact lenses. Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention. • General Advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. <p>Notes to Physician: Treat symptomatically. Symptoms may be delayed.</p>	
CORROSIVE & CHEMICALS	<ul style="list-style-type: none"> • The charging of material shall be carried out by PLC based SCADA Fully Atomization System • Dyke wall provided • Dyke wall with sufficient size is provided. • Tank, valve, pipeline are checked and maintain, in good condition. • Apron, Hand gloves, gumboot, goggles and helmet shall be provided. • ISI Portable fire extinguisher & Hydrant line is provided as per TAC norms • Sufficient amount of sand/soil are kept to control any spillage. • Eye washer cum shower is provided near tank-farm area. • Level indicator provided. • Vent line dipped in water shall be provided. • RCC foundation shall be provided. • Transfer material to another empty tank/ Vessel. 	
TOXIC CHEMICALS	<ul style="list-style-type: none"> • Ventilation must be sufficient to prevent accumulation of vapor pockets. All fan switches should be outside the storage area. • Self-breathing apparatus, gas mask and 'emergency kits' should be located at strategic points under working condition and to be easily accessible in the event of emergency • Appropriate minimum safety distances as stipulated in the above mentioned rules have to be maintained from buildings or group of buildings or adjacent property. 	
REACTIVE CHEMICALS	<ul style="list-style-type: none"> • Store minimum quantities • Segregate chemicals, e.g. from water, air, incompatible chemicals, sources of heat, ignition sources • Spillage control; bund, spray, blanket, containment. Drain to collection pit • Decontamination and first-aid provisions, e.g. neutralize/destroy, fire-fighting • Contain/vent pressure generated to a safe area • Split-up stocks into manageable lots, e.g. with reference to fire loading/spillage control. • Ensure appropriate levels of security, hazard warning notices, fences, patrols. Control access including vehicles • Appropriate gas/vapour/fume/pressure venting, e.g. flame arrestors, scrubbers, absorbers, stacks • Ensure adequate natural or forced general ventilation of the storage area Provide adequate, safe lighting 	

	<ul style="list-style-type: none"> • Label (name and number); identify loading/unloading/transfer couplings • Provide appropriate fire protection (sprinkler, dry powder, gas) • Ensure adequate access for both normal and emergency purposes with alternative routes 					
<p>➤ Applicability of PESO: Yes. Unit shall 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 shall 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>Type of Process</th> <th>Safety measures including Automation</th> </tr> </thead> <tbody> <tr> <td>Sulphonation</td> <td> <ul style="list-style-type: none"> • Flame proof light fittings shall be installed in the plant. • Safety measures shall be adopted from the design stage. • The solvent shall be handle through receiver tank and recover solvent shall be store in receiver tank • Safety Valve and pressure gauge shall be provided on reactor and its jacket. • Utility like Chilling, cooling, vacuum, steaming and its alternative shall be provided to control reaction parameters in a safe manner. • Free Fall of any flammable material in the vessel shall be avoided. • Static earthing provision shall be made at design stage to all solvent handling equipments, reactors, vessels & powder handling equipment. • Any reaction upsets shall be confined to the reaction vessel itself. • All emergency valves and switches and emergency handling facilities shall be easily assessable. • Further all the vessels shall be examined periodically by a recognized competent person under the Gujarat Factory Rules. • All the vessels and equipment shall be earthed appropriately and protected against Static Electricity. Also for draining in drums proper earthing facilities shall be provided. • Materials shall be transferred by pumping through pipeline or by vacuum from drums. • All solvents and flammable material storage tanks shall be stored away from the process plant. </td> </tr> </tbody> </table>	Type of Process	Safety measures including Automation	Sulphonation	<ul style="list-style-type: none"> • Flame proof light fittings shall be installed in the plant. • Safety measures shall be adopted from the design stage. • The solvent shall be handle through receiver tank and recover solvent shall be store in receiver tank • Safety Valve and pressure gauge shall be provided on reactor and its jacket. • Utility like Chilling, cooling, vacuum, steaming and its alternative shall be provided to control reaction parameters in a safe manner. • Free Fall of any flammable material in the vessel shall be avoided. • Static earthing provision shall be made at design stage to all solvent handling equipments, reactors, vessels & powder handling equipment. • Any reaction upsets shall be confined to the reaction vessel itself. • All emergency valves and switches and emergency handling facilities shall be easily assessable. • Further all the vessels shall be examined periodically by a recognized competent person under the Gujarat Factory Rules. • All the vessels and equipment shall be earthed appropriately and protected against Static Electricity. Also for draining in drums proper earthing facilities shall be provided. • Materials shall be transferred by pumping through pipeline or by vacuum from drums. • All solvents and flammable material storage tanks shall be stored away from the process plant. 		
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	<ul style="list-style-type: none"> • Caution note, safety posters, stickers, periodic training & Updation in safety and emergency preparedness plan shall be displayed and conducted. • As Per GFR 68-U Rules Prescribed Under Schedule 8A. Our total employ shall be 15 nos. We shall proposed to provide OHC in Admin building with full equipped first aid box Also • we shall appointment Medical Officer on retainer-ship basis and carry out the pre-employment and periodical medical examination as stipulated
Chlorination	<ul style="list-style-type: none"> • Two stage alkali scrubber is proposed to control emission. • PLC based system shall be provided. • It is proposed to provide leak sensor and alarm system • Automatic supply shut off valves are proposed • On site emergency response capability shall be maintained • As far as possible, it is recommended to keep the gas phase composition outside the flammable range. • Temperature indicators shall be provided near all reactors
H-3	Details of Fire Load Calculation
Total Plot Area:	172399 Sq.m
Area utilized for plant activity:	72026
Area utilized for Hazardous Chemicals Storage:	6496 Sq.m
Number of Floors:	GF+FF+SF+TF
Water requirement for firefighting in KLD:	432.15 (120 Minutes)
Water storage tank provided for firefighting in KLD:	2500 KL
Details of Hydrant Pumps:	8.0 Inch Diameter fire hydrant line shall be provided connected to Jockey Pump Followed by Diesel Pump having 07 bar pressure with sprinkler system. The jockey pump is placed with the fire water tank having capacity of 2500 KL. The unit has proposed Ten numbers of trailer pump and Fifteen Numbers of Foam Trolley having capacity of 50 Liters
Nearest Fire Station:	SEZ fire station With 15.43 KM distance GFL Fire Station @ 18.05 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 2500 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:	150
Number of Contractual person/Labour:	200
Area provided for OHC:	150 Sq. m
Number of First Aid Boxes:	At least one box containing such items and placed and maintained in accordance with the requirements of Sec. 45 is separately provided.
Nearest General Hospital:	Civil hospital bharuch @ 26.0 Km
Name of Antidotes to be store in plant:	Injection -morphia, pethidins, atropins, adrenaline, coramine, novocan Antidotes: Fomepizole, formic acid

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 Cr)	Operati ng Cost (Cr/ Month)	Maintena nce Cost (Cr/ Month)	Total Recurring Cost (Cr/ Month)
1	Effluent Treatment Plant	Installation of ETP and getting membership of payal Industrial Park, CETP	10.00	1.5	0.2	1.7
2	APCM	Installation of stack/vent & it"s monitoring facilities including online and provision of air pollution control system Provision of odour control system Provision of H2S and VOC Sensors Alarm Fly Ash Management	5.00	0.50	0.1	0.60
3	TSDF Membership and other	Getting membership of TSDF site and management of Hazardous Waste	0.50	0.75	0.1	0.85
4	Health & Safety	Provision of Occupational Health Centre including full time doctors and medical staff, medical equipment with Antidotes, PPE and its Kits, Breathing Apparatus etc	1.00	0.10	0.1	0.20
5	AWH Monitoring	To conduct EMS efficacy & environment monitoring	-	0.15	-	0.15

6	Green Belt	Development of Greenbelt Area	1.00	0.1	0.05	0.15
7	Fire	Provision of Safety Measures including Fire Detectors,, Fire Hydrant, SCBA Suits, Fire Extinguishers and Proximate suits, Fire tender Lightening arrestors etc.	5.00	0.50	0.2	0.70
8	Other	PLC based SCADA and DCS System	10.00	0.50	0.10	0.60
		CER	8.0	-	-	-
Total			40.5	4.10	0.85	4.95

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.

16) DELIBRATION AND RECOMMENDATION:

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

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

- a. "Wind – breaker of appropriate height i.e. 1/3rd of the building height and maximum up to 10 meters shall be provided. Individual building within the project site shall also be provided with barricades.
- b. "No uncovered vehicles carrying construction material and waste shall be permitted."
- c. "No loose soil or sand or construction & demolition waste or any other construction material that cause dust shall be left uncovered. Uniform piling and proper storage of sand to avoid fugitive emissions shall be ensured."
- d. Roads leading to or at construction site must be paved and blacktopped (i.e. – metallic roads).

- e. No excavation of soil shall be carried out without adequate dust mitigation measures in place.
- f. Dust mitigation measure shall be displayed prominently at the construction site for easy public viewing.
- g. Grinding and cutting of building materials in open area shall be prohibited.
- h. Construction material and waste should be stored only within earmarked area and road side storage of construction material and waste shall be prohibited.
- i. Construction and demolition waste processing and disposal site shall be identified and required dust mitigation measures be notified at the site. (If applicable).

SPECIFIC CONDITIONS:

1. Unit shall install CEMS [**Continuous Emission Monitoring System**] in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. [**For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable**].
2. Close loop solvent recovery system with adequate condenser system shall be provided to recover solvent vapours in such a manner that recovery shall be maximum and recovered solvent shall be reused in the process within premises.
3. Leak Detection and Repair (LDAR) program shall be prepared and implemented as per the CPCB guidelines. LDAR Logbooks shall be maintained.
4. The National Ambient Air Quality Emission Standards issued by the Ministry vide G. S. R. No. 826 (E) dated 16th November, 2009 shall be complied with.
5. National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G. S. R. 608 (E) dated 21/07/2010 and amended from time to time shall be followed.
6. Unit shall have to adhere to the prevailing area specific policies of GPCB with respect to the discharge of pollutants, and shall carry out the project development in accordance & consistence with the same.
7. All measures shall be taken to avoid soil and ground water contamination within premises.
8. **Safety & Health:**
 - a. PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
 - b. PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
 - c. PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
 - d. Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
 - e. PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and

- display proper evacuation plan in the manufacturing area in case of any emergency or accident.
- f. PP shall install adequate fire hydrant system with foam trolley attachment within premises and separate storage of water for the same shall be ensured by PP.
 - g. PP shall take all the necessary steps for control of storage hazards within premises ensuring incompatibility of storage raw material and ensure the storage keeping safe distance as per the prevailing guidelines of the concerned authority.
 - h. PP shall take all the necessary steps for human safety within premises to ensure that no any harm is caused to any worker/employee or labour within premises.
 - i. Flame proof electrical fittings shall be provided in the plant premises, wherever applicable.
 - j. Unit shall provide water sprinkler to the Chlorine, Hydrogen storage cylinder.
 - k. Unit shall never store drum/barrels/carboys of incompatible material/chemical together.
 - l. Unit shall provide effective fire hydrants, water monitors & foam application system at solvent storage area and unit shall provide adequate safety system such as water sprinklers, water curtains, foam pouring system etc. to restrict cascade fire emergency in solvent storage area.
 - m. Unit shall provide effective Isolation for Process area and storage of hazardous chemicals.

WATER

9. Total water requirement for the project shall not exceed 2930 KLD. Unit shall reuse 570 KLD of Utility Condensate within premises. Hence, fresh water requirement shall not exceed 2360 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 1160 KLD.
11. Management of Industrial effluent shall be as under:
 - ✓ Total 1160 KLD waste water generation from manufacturing process and other ancillary operation shall be treated in Primary and Secondary tertiary ETP and Send to Payal Industrial Park CETP
 - ✓ Treated waste water shall be sent to CETP only after complying with the inlet norms of CETP prescribed by GPCB to ensure no adverse impact on Human Health and Environment.
12. Domestic wastewater generation shall not exceed 50 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.
13. 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.
14. Unit shall provide *buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.*
15. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.

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

AIR:

17. Unit shall not exceed fuel consumption for 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. PP shall use approved fuels only as fuel in boilers.

21. The fugitive emission in the workzoneenvironment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities fromtime to time (e.g. Directors of IndustrialSafety& Health). Following indicativeguidelines shall also be followed to reducethe fugitive emission.

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

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

23. Forcontrol of fugitive emission, VOCs, following steps shall be followed :

- a. Closed handling and charging system shall be provided for chemicals.
- b. Reflux condenser shall be provided over Reactors / Vessels.
- c. Pumps shall be provided with mechanical seals toprevent leakages.
- d. 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, Cl₂, H₂S 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 within premises (56892 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 activities (To provide Desalination Plant @ 25 KL/Day at Four Villages namely Pakhajan, Nadarkha, Pipaliya, Nandida, To increase the depth of Village Pond to maximize the rain water storage which is also useful to decrease the salinity of surrounding soil namely Nandida, Akhod, Nadarkha, Pipaliya, Solar Panel Tree 15 KW in Village namely Pakhajan, Nadarkha, Pipaliya, Over Head Water Storage shall be constructed for water distribution at Four Villages namely Pakhajan, Nadarkha, Pipaliya, Nandida) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020.

This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.

33. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Satva Environ Consultancy and submitted by the project proponent and commitments made during presentation before SEAC and proposed In the EIA report shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

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 shall not mean that appointing a key person shall 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

Other deliberations

Subject: Issues related to compliance of Biomedical Waste Management Rules, 2016 and Corresponding CPCB Guidelines-reg.

Reference:

1. Representation from M/s: Samved Bio medical Waste Management **dated 22.11.2021.**
2. Representations received from M/s: Biohm Consultare Pvt. Ltd. Dated

07.03.2022

3. Representation of CBWTF Association of India vide letter no. G-1/21-22 dated

08.03.2022

4. **SEIAA letter vide no. SEIAA/Guj/Gen-3 (12)/769 dated 24.03.2022**

5. **SEIAA letter vide no. SEIAA/Guj/Gen-3 (12)/770 dated 24.03.2022**

This matter was discussed during the meeting dated 11.04.2022 in continuation to the earlier SEAC meeting dated 04.04.2022, 05.04.2022, 07.04.2022 and 08.04.2022.

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	