

Minutes of the 389th meeting of the State Level Expert Appraisal Committee held on 28th March 2022 through Video Conference (VC) on National Informatics Centre (NIC).

In the wake of recent crisis of COVID-19, lockdown situation, the agenda of the present meeting was mailed to expert Committee in advance and a Video conference meeting on NIC was organised in this regard on 28/03/2022 at 13.30 hrs.

Following members joined the meeting:

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

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

01	SIA/GJ/IND3/247135/2021	M/s. Bileshwar Pharmaceuticals Private Limited Plot No. D-2/17/12, GIDC Estate Dahej-II, Tal.: Vagra, District: Bharuch- 392130, State: Gujarat, India.	EC		
<p>Category of the unit: 5 (f) Project status: New 1) Details of Application:</p> <table border="1"> <tr> <td>1.1. Type of application:</td> <td>EC-New</td> </tr> </table>				1.1. Type of application:	EC-New
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1.2. Proposal no.	SIA/GJ/IND3/247135/2021
1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	24/02/2022
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. Envycraft Environmental Services
1.8. SEAC Meeting No. and Date:	389 th meeting dated 28.03.2022
1.9. Compliance of Existing EC & CCA	Not Applicable as the project is greenfield.

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

Sr. No	Product List	CAS No.	Quantity (MT/Month)	End-use*
1.	Benzhydryl Piperazine	841-77-0	400.0 MT/Month	Cyclazine /anti-sickness medicine
2.	4-Hydroxy-4'-Chloro benzophenone	42019-78-3		Anastrozole /to treat breast cancer in women after menopause.
3.	Hydroxy-3-[isobutyl]{(4-nitrophenyl)sulfonyl}aminopropyl] carbamate	191226-98-9		Darunavir /to treat human immunodeficiency virus (HIV) infection
4.	4 Hydroxy Benzaldehyde	105-34-0		Ampicillin /to treat certain infections
5.	3-Chloro Acetophenone	123-08-0		Atenolol / to treat high blood pressure and irregular heartbeats
6.	3-Bromo Acetophenone	99-02-5		Atenolol / to treat high blood pressure and irregular heartbeats
7.	2-hydroxy acetophenone	118-93-4		Atenolol / to treat high blood pressure and irregular heartbeats
8.	3-Methoxy Acetophenone	586-37-8		Nafoxidine /treatment of breast cancer
9.	3-Acetamido Acetophenone	99-03-6		Zalipion /to treat insomnia
10.	4-hydroxy acetophenone	99-93-4		Paracetamol /to treat fever
11.	4-methyl acetophenone	122-00-9		Zolpidem Tartrate /to treat a certain sleep problem (insomnia)
12.	2,4-Dihydroxybenzoic acid	89-86-1		Mycophenolic acid / immunosuppressant medication
13.	4 Nitro Benzoic Acid	62-23-7		Benzocaine /local anesthetic
14.	4-Chloro Acetophenone	99-91-2		Clemastine /to relieve hay fever and allergy symptoms
15.	N-Acetyl Glycine	543-24-8		Diminazene Aceturate / to treat trypanosomiasis

16.	2-Chloro-5-Bromo Benzoic Acid	21739-92-4	Empagliflozin/ type 2 diabetes.
17.	4-Chloro Benzoic Acid	96-99-1	Bumetanide/ Treat high blood pressure
18.	1-(4-Methoxyphenyl)-4-(4-Nitrophenyl) Piperazine	74852-61-2	ketaoconazole/ treat skin infections
19.	4-Methoxy phenyl piperazine	38212-30-5	ketaoconazole / treat skin infections
20.	Gabapentin	60142-96-3	API/ to prevent and control seizures
21.	2-Azaspiro [4, 5] decan-3- one	64744-50-9	Gabapentin / to prevent and control seizures
22.	Gabapentin Hydrochloride	60142-95-2	Gabapentin / to prevent and control seizures
23.	Gabapentin tech	60142-96-3	Gabapentin / to prevent and control seizures
24.	Labetalol hydrochloride	32780-64-6	API/ to treat high blood pressure
25.	5-Acetyl salicylamide	40187-51-7	Labetalol hydrochloride/ to treat high blood pressure
26.	5-Bromoacetyl salicylamide/5-chloroacetyl salicylamide	73866-23-6	Labetalol hydrochloride/ to treat high blood pressure
27.	2-hydroxy-5-[N-(1-methyl-3-phenylpropyl)amino acetyl] benzamide hydrochloride	85665-85-6	Labetalol hydrochloride/ to treat high blood pressure
28.	Labetalol Base	36894-69-6	Labetalol hydrochloride/ to treat high blood pressure
29.	Quetiapine fumarate	111974-69-7	API/ treat certain mental/mood conditions
30.	2-(2-nitrophenylsulfuryl)benzoic acid	19806-43-0	Quetiapine Fumarate/ treat certain mental/mood conditions
31.	2-(2-aminophenylsulfuryl)benzoic acid	55990-13-1	Quetiapine Fumarate/ treat certain mental/mood conditions
32.	10H-dibenzo[b, f][1,4]thiazepin-11-one	3159-07-7	Quetiapine Fumarate/ treat certain mental/mood conditions
33.	Pregabalin	148553-50-8	API/ treat neuropathic pain and fibromyalgia.
34.	Ethyl cyanoacetate	107-91-5	Pregabalin/ treat neuropathic pain and fibromyalgia.
35.	Methyl cyanoacetate	105-56-6	Pregabalin/ treat neuropathic pain and fibromyalgia.
36.	2-Cyanoacetamide	107-91-5	Pregabalin/ treat neuropathic pain and fibromyalgia.
37.	R (3) CarbonylMethyl -5- Methyl Hexanoic acid	181289-33-8	Pregabalin/ treat neuropathic pain and fibromyalgia.
38.	Benzocaine	94-09-7	API / Pain reliever or cough drop
39.	Ethyl 4-nitrobenzoate	99-77-4	Benzocaine/ Pain reliever or cough drop
40.	Phenylephrine	59-42-7	API / Relief of stuffy nose, sinus
41.	3-Hydroxy Acetophenone	121-71-1	Phenylephrine HCl/ Relief of stuffy nose, sinus
42.	3-acetylphenyl acetate	2454-35-5	Phenylephrine HCl/ Relief of stuffy nose, sinus
43.	(3-(2-bromoacetyl)phenyl acetate or 2-	71786-67-9	Phenylephrine HCl/ Relief of stuffy nose, sinus

	(benzyl(methyl)amino-1-(3-hydroxyphenyl)ethane-1-one)		
44.	(3-(1-hydroxy-2-methylamino)ethyl)phenol)	1477-63-0	Phenylephrine HCl/ Relief of stuffy nose, sinus
45.	Carbamazepine	298-46-4	API/treat trigeminal neuralgia
46.	2-Chloro-N,N-diphenyl acetamide	96-30-0	Carbamazepine/treat trigeminal neuralgia
47.	Phenyl oxindole	3335-98-6	Carbamazepine/treat trigeminal neuralgia
48.	Iminostilbene	256-96-2	Carbamazepine/treat trigeminal neuralgia
49.	Iminostilbene carbonyl chloride	33948-22-0	Carbamazepine/treat trigeminal neuralgia
50.	oxcarbazepine	28721-07-5	API / treat epilepsy and bipolar disorder
51.	10-methoxy iminostilbene	4698-11-7	Oxcarbazepine/treat epilepsy and bipolar disorder
52.	Itraconazole	84625-61-6	API/to treat a variety of fungal infections
53.	Cis-Bromobenzoate	61397-56-6	Itraconazole/to treat a variety of fungal infections
54.	Cis-(2-(2,4-dichlorophenyl)-2-(1H-1,2,4-triazol-1-yl-methyl)-1,3-dioxalane-4-yl) methyl methane sulfonate	67914-86-7	Itraconazole/to treat a variety of fungal infections
55.	2,4-Dihydro-4-[4-[(4-hydroxyphenyl)-1-piperazinyl]phenyl]-2-(1-methylpropyl)-3H-1,2,4-triazole-3-one	106461-41-0	Itraconazole/to treat a variety of fungal infections
56.	Famotidine	76824-35-6	API/ used to treat ulcers of the stomach and intestines
57.	Olmesartan	144689-63-4	API/treat high blood pressure
58.	5-(1-Hydroxy-1-methyl-ethyl)-2-propyl-3 H-imidazole-4-carboxylic acid ethyl ester	144689-93-0	Olmesartan /treat high blood pressure
59.	4-Cloromethyl-5-methyl-1,3-dioxol-2-one	80841-78-7	Olmesartan /treat high blood pressure
60.	N-(Triphenylmethyl)-5-(4'-bromomethyl biphenyl2-yl) tetrazole [TTBB]	124750-51-2	Olmesartan /treat high blood pressure
61.	Ortho Toly Benzo Nitrile	157366-46-6	Olmesartan /treat high blood pressure
62.	Levetiracetam	102767-28-2	API/ treat seizures (epilepsy).
63.	L-2-Aminobutyric Acid	1492-24-6	Levetiracetam/ treat seizures (epilepsy).
64.	S-2 Amino Butyramide HCl	7682-20-4	Levetiracetam/ treat seizures (epilepsy).
65.	Levosulphuride	23672-07-3	API /symptoms of schizophrenia, anxiety disorders, and dysthymia
66.	2-methoxybenzoic acid	579-75-9	Levosulpiride/ symptoms of schizophrenia, anxiety disorders,

				and dysthymia
67.	2-methoxy-5-sulfamoylbenzoic acid	22117-85-7		Levosulpiride/ symptoms of schizophrenia, anxiety disorders, and dysthymia
68.	Methyl 1,2-methoxy-5-sulfamoylbenzolate	33045-52-2		Levosulpiride/ symptoms of schizophrenia, anxiety disorders, and dysthymia
69.	S-1-Ethyl-2-aminomethyl pyrrolidine	22795-99-9		Levosulpiride/ symptoms of schizophrenia, anxiety disorders, and dysthymia
70.	Tamsulosin Hydrochloride	106133-20-4		API/to treat men with symptoms of an enlarged prostate
71.	2-Methoxy-5-(2-oxo-propyl)-benzenesulfonamide	116091-63-5		Tamsulosin Hydrochloride /to treat men with symptoms of an enlarged prostate
72.	2-Methoxy-5-[2-(1-phenylethylamino) -propyl]-benzenesulfonamide	667875-03-8		Tamsulosin Hydrochloride /to treat men with symptoms of an enlarged prostate
73.	5-(2-Amino-propyl)-2-methoxybenzenesulfonamide	112101-81-2		Tamsulosin Hydrochloride /to treat men with symptoms of an enlarged prostate
74.	5-{2-[3-(2-Ethoxy-phenyl)-propylamino]-propyl}-2-methoxy-benzenesulfonamide	94666-07-6		Tamsulosin Hydrochloride /to treat men with symptoms of an enlarged prostate
75.	Rivastigmin	123441-03-2		API/treat confusion (dementia) related to Alzheimer's disease and to Parkinson's disease
76.	Tadalafil	171596-29-5		API/treat erection problems (erectile dysfunction)
77.	Piperonal	120-57-0		Tadalafil /treat erection problems (erectile dysfunction)
78.	2-Amino-3-(1H-indol-3-yl)-propionic acid methyl ester	4299-70-1		Tadalafil /treat erection problems (erectile dysfunction)
79.	1-Benzo[1,3]dioxol-5-yl-2,3,4,9-tetrahydro-1H-β-carboline-3-carboxylic acid methyl ester	82789-26-2		Tadalafil /treat erection problems (erectile dysfunction)
80.	1-Benzo[1,3]dioxol-5-yl-2-(2-chloro-acetyl)-2,3,4,9-tetrahydro-1H-β-carboline-3-carboxylic acid methyl ester	629652-40-0		Tadalafil /treat erection problems (erectile dysfunction)
81.	Lidocaine	137-58-6		API/ temporarily numb and relieve pain from minor burns
82.	Losartan Potassium	114798-26-4		API/ treat high blood pressure (hypertension)
83.	4 Bromomethyl 2 Cynobiphenyl	114772-54-2		Losartan Potassium/ treat high blood pressure
84.	2-Butyl-4-chloro-5-formylimidazole	83857-96-9		Losartan Potassium/ treat high blood pressure
85.	2-n-Butyl-4-chloro-1-[2'-cyano biphenyl-4-yl] methyl]-5-[hydroxyl methyl imidazole]	124750-99-8		Losartan Potassium/ treat high blood pressure
86.	2-n-Butyl-4- chloro-1-[2'-(1H-tetrazol-5-yl) (1,1'-biphenyl-4-yl) methyl]-1H-imidazole-5-	124751-00-4		Losartan Potassium/ treat high blood pressure

	methanol		
87.	Luliconazole	187164-19-8	API /treat tinea pedis (athlete's foot; fungal infection of the skin on the feet and between the toes)
88.	(1S)-2-chloro-1-(2,4-dichlorophenyl)ethyl methanesulfonate	229334-55-8	Luliconazol /treat tinea pedis (athlete's foot; fungal infection of the skin on the feet and between the toes)
89.	1-(Cyanomethyl)imidazole	98873-55-3	Luliconazol /treat tinea pedis (athlete's foot; fungal infection of the skin on the feet and between the toes)
90.	Apixaban	503612-47-3	API / prevent serious blood clots from forming
91.	3-Morpholino-1-(4-nitrophenyl)-5,6-dihydropyridin-2(1H)-one	503615-03-0	Apixaban / prevent serious blood clots from forming
92.	Ethyl (2Z)-chloro[(4-methoxyphenyl)hydrazono]acetate	473927-63-8	Apixaban / prevent serious blood clots from forming
93.	4,5,6,7-Tetrahydro-1-(4-methoxyphenyl)-6-(4-nitrophenyl)-7-oxo-1H-pyrazolo[3,4-c]pyridine-3-carboxylic acid ethyl ester	536759-91-8	Apixaban / prevent serious blood clots from forming
94.	1-(4-Methoxyphenyl)-7-oxo-6-[4-(2-oxopiperidin-1-yl)phenyl]-4,5,6,7-tetrahydro-1H-pyrazolo[3,4-c]pyridine-3-carboxylic acid ethyl ester	503614-92-4	Apixaban / prevent serious blood clots from forming
95.	Ticagrelor	274693-27-5	API / to help prevent heart attack and stroke
96.	2-[[[(3aR,4S,6R,6aS)-6-Aminotetrahydro-2,2-dimethyl-4H-cyclopenta-1,3-dioxol-4-yl]oxy]ethanol	376608-65-0	Ticagrelor / to help prevent heart attack and stroke
97.	2-[[[(3aR,4S,6R,6aS)-6-[[5-Amino-6-chloro-2-(propylthio)-4-pyrimidinyl]amino]tetrahydro-2,2-dimethyl-4H-cyclopenta-1,3-dioxol-4-yl]oxy]-ethanol	376608-74-1	Ticagrelor / to help prevent heart attack and stroke
98.	2-[[[(3aR,4S,6R,6aS)-6-[7-Chloro-5-(propylthio)-3H-1,2,3-triazolo[4,5-d]pyrimidin-3-yl]tetrahydro-2,2-dimethyl-4H-cyclopenta-1,3-dioxol-4-yl]oxy]ethanol	376608-75-2	Ticagrelor / to help prevent heart attack and stroke
99.	(1R,2S)-2-(3,4-difluorophenyl)-cyclopropane amine	1402222-66-5	Ticagrelor / to help prevent heart attack and stroke
100.	Dabigatran	211915-06-9	API prevent stroke and harmful blood clots
101.	(3-(3-Amino-4-methylamino-benzoyl)-pyridine-2-yl-amino)-propionic acid ethyl ester	212322-56-0	Dabigatran / prevent stroke and harmful blood clots
102.	(3-[(2-{[4-(Hexyloxycarbonylamino-imino-	211915-84-3	Dabigatran / prevent stroke and harmful blood clots

	methyl)-phenylamino)-methyl}-1-methyl-1H-benzoimidazole-5-carbonyl)-pyridine-2-yl-amino]-propionic acid ethyl ester)		
103.	(3-({2-[(4-carbamimidoyl-phenylamino)-methyl]-1-methyl-1H-benzoimidazole-5-carbonyl)-pyridine-2-yl-amino)-propionic acid ethyl ester hydrogen chloride)	429658-95-7	Dabigatran/ prevent stroke and harmful blood clots
104.	(3-({2-[(4-cyano-phenylamino)-methyl]-1-methyl-1H-benzoimidazole-5-carbonyl)-pyridine-2-yl-amino)-propionic acid ethyl ester methane sulfoate)	211914-50-0	Dabigatran/ prevent stroke and harmful blood clots
105.	Adapalene	106685-40-9	API/ treat acne
106.	3-(5-bromo-2-methoxyphenyl)tricyclo [4.3.1.0] decane	104224-63-7	Adapalene/ treat acne
107.	Methyl 6-[3-(1-adamantyl)-4-methoxyphenyl]-2-naphthoate	106685-41-0	Adapalene/ treat acne
108.	6-(4-methoxy-3-tricyclo [3.3.1.1] dec-1-yl phenyl) naphthalene-2-carboxylic acid	106685-40-9	Adapalene/ treat acne
109.	Vildagliptin	274901-16-5	API/ improve blood sugar control in adults with Type 2 diabetes
110.	1-amino-3-adamantanol	702-82-9	Vildagliptin/ improve blood sugar control in adults with Type 2 diabetes
111.	L-prolinamide	7531-52-4	Vildagliptin/ improve blood sugar control in adults with Type 2 diabetes
112.	(s)-1-(2-chloroacetyl)pyrrolidine-2-carboxamide	214398-99-9	Vildagliptin/ improve blood sugar control in adults with Type 2 diabetes
113.	(S)-1-(2-chloroacetyl)pyrrolidine-2-carbonitrile	207557-35-5	Vildagliptin/ improve blood sugar control in adults with Type 2 diabetes
114.	Rilpivirine	500287-72-9	API/ treat human immunodeficiency virus type 1 (HIV-1)
115.	3-(4-Amino-3, 5-dimethyl-phenyl)-acrylonitrile hydrochloride	661489-23-2	Rilpivirine / treat human immunodeficiency virus type 1 (HIV-1)
116.	4-(4-chloro-pyrimidin-2-yl-amino)-benzo- nitrile	244768-32-9	Rilpivirine / treat human immunodeficiency virus type 1 (HIV-1)
117.	Valacyclovir	124832-27-5	API/ treat viral infections
118.	N-Carbobenzyloxy-L-valine	1149-26-4	Valacyclovir/ treat viral infections
119.	N-[(Phenylmethoxy)carbonyl]-L-valine 2-[(2-amino-1,6-dihydro-6-oxo-9H-purin-9-yl)methoxy]ethyl ester	124832-31-1	Valacyclovir/ treat viral infections

120.	Atovaquone	500-92-5	API/antimalarial drug
121.	4-(4-Chlorophenyl)cyclohexanecarboxylic acid	95233-37-7	Atovaquone /antimalarial drug
122.	Telmisartan	144701-48-4	API/treat high blood pressure
123.	2-Butyl-7-methyl-3H-benzimidazole-5-carboxylic acid methyl ester	67500-40-7	Telmisartan/ treat high blood pressure
124.	2-Butyl-7-methyl-3H-benzimidazole-5-carboxylic acid	942195-83-7	Telmisartan/ treat high blood pressure
125.	1,6'-Dimethyl-2'-propyl-1H,3'H-[2,4']bibenzoimidazolyl	152628-02-9	Telmisartan/ treat high blood pressure
126.	4'-(1,6'-Dimethyl-2'-propyl-1H-[2,4']bibenzoimidazolyl-3'-ylmethyl)-biphenyl-4-carbonitrile	528560-93-2	Telmisartan/ treat high blood pressure
127.	Dolutegravir Sodium Salt	1051375-19-9	API/ to help control HIV infection
128.	Dolutegravir	1051375-16-6	API/ to help control HIV infection
129.	ethyl 3-(benzyloxy)-5-(2,4-difluoro benzylcarbamoyl)-1-(2,2-dimethoxy ethyl)-4-oxo-1,4-dihydropyridine-2-carboxylate	335210-23-5	Dolutegravir/ to help control HIV infection
130.	(4R,12aS)-7-(benzyloxy)-N-(2,4-difluorobenzyl)-4-methyl-6,8-dioxo-3,4,6,8,12,12a-hexahydro-2H-[1,3]oxazino[3,2-d]pyrido[1,2-a]pyrazine-9-carboxamide	1206102-11-5	Dolutegravir/ to help control HIV infection
131.	Fenofibrate	49562-28-9	API / reduce the amounts of fatty substances such as cholesterol and triglycerides in the blood and to increase the amount of HDL
132.	Meloxicam	71125-38-7	API / relieve pain, tenderness, swelling, and stiffness caused by osteoarthritis
133.	2-Amino-5-Methyl Thiazole	7305-71-7	Meloxicam/ relieve pain, tenderness, swelling, and stiffness caused by osteoarthritis
134.	Methyl 4-hydroxy-2H-1,2-benzothiazine-3-carboxylate 1,1-dioxide	35511-15-0	Meloxicam/ relieve pain, tenderness, swelling, and stiffness caused by osteoarthritis
135.	Dapagliflozin	461432-26-8	API/treat type 2 diabetes
136.	3, 4, 5-Tris-trimethylsilylanyl oxy-6-trimethylsilylanyloxymethyl-tetrahydro-pyran-2-one	32384-65-9	Dapagliflozin /treat type 2 diabetes
137.	2-[4-Chloro-3-(4-ethoxy-benzyl)-phenyl]-6-hydroxy methyl-2-methoxy-tetrahydro-pyran-3,4,5-triol	714269-57-5	Dapagliflozin /treat type 2 diabetes
138.	Dapagliflozin-proline complex	461432-26-8	Dapagliflozin /treat type 2 diabetes

139.	Allopurinol	315-30-0	API / treat gout
140.	Cyano acetic acid	372-09-8	Allopurinol/ treat gout
141.	3-Amino-4-carbamoylpyrazole Hemisulfate	27511-79-1	Allopurinol/ treat gout
142.	Rivaroxaban	366789-02-8	API / treat deep vein thrombosis (DVT; a blood clot, usually in the leg)
143.	4-(4-aminophenyl)morpholine-3-one	438056-69-0	Rivaroxaban/ treat deep vein thrombosis (DVT; a blood clot, usually in the leg)
144.	(S)-(+)-N-(2,3-Epoxypropyl)phthalimide	161596-47-0	Rivaroxaban/ treat deep vein thrombosis (DVT; a blood clot, usually in the leg)
145.	2-((2R)-2-Hydroxy-3-[[4-(3-oxo-4-morpholinyl)phenyl]amino]propyl)-1H-isoindole-1,3(2H)-dione	446292-07-5	Rivaroxaban/ treat deep vein thrombosis (DVT; a blood clot, usually in the leg)
146.	Nebivolol	99200-09-6	API/ treat high blood pressure
147.	2-(benzylamino)-1-(6-fluorochroman-2-yl)ethanol	1322622-97-8	Nebivolol/ treat high blood pressure
148.	6-Fluoro-3,4-dihydro-2H-1-benzopyran-2-carboxylic acid	99199-60-7	Nebivolol/ treat high blood pressure
149.	N-Benzyl Nebivolol Hydrochloride	929706-85-4	Nebivolol/ treat high blood pressure
150.	6-Fluoro-3,4-dihydro-2-oxiranyl-2H-1-benzopyran	99199-90-3	Nebivolol/ treat high blood pressure
151.	Emtricitabine	143491-57-0	API/to help control HIV infection
152.	(2R,5S)-5-(4-Amino-5-fluoro-2-oxo-1(2H)-pyrimidinyl)-1,3-oxathiolane-2-carboxylic acid (1R,2S,5R)-5-methyl-2-(1-methylethyl)cyclohexyl ester	764659-72-5	Emtricitabine/to help control HIV infection
153.	Zolmitriptan	139264-17-8	API/treat migraines
154.	Sitagliptin	486460-32-6	API/ to treat high blood sugar levels caused by type 2 diabetes
155.	(2Z)-4-Oxo-4-[3-(trifluoromethyl)-5,6-dihydro-[1,2,4]triazolo[4,3-a]pyrazine-7(8H)-yl]-1-(2,4,5-trifluorophenyl)but-2-en-2-amine	767340-03-4	Sitagliptin/ to treat high blood sugar levels caused by type 2 diabetes
156.	4-Oxo-4-[3-(trifluoromethyl)-5,6-dihydro[1,2,4]triazolo[4,3-a]pyrazin-7(8H)-yl]-1-(2,4,5-trifluorophenyl)butan-2-one	764667-65-4	Sitagliptin/ to treat high blood sugar levels caused by type 2 diabetes
157.	Desvanlafexine	386750-22-7	API/to treat depression
158.	2-(4-Hydroxyphenyl)-N,N-Dimethylacetamide	76472-23-6	Desvanlafexine/to treat depression
159.	2-(4-Benzyloxy)-N,N-dimethylbenzene acetamide	919475-15-3	Desvanlafexine/to treat depression
160.	1-[(4-Benzyloxyphenyl)-dimethylaminocarbonylmethyl]cyclohexanol	93413-61-7	Desvanlafexine/to treat depression

161.	1-[1-(4-Benzyloxyphenyl)-2-(dimethylamino)ethyl]cyclohexanol	93413-61-7	Desvanlafexine /to treat depression
162.	Vanlafexine	93413-69-5	API /to treat depression, anxiety, panic attacks, and social anxiety disorder
163.	Lacosamide	175481-36-4	API /prevent and control seizures
164.	(R)-2-N-Boc-amino-3-methoxypropanoic acid	-	Lacosamide / prevent and control seizures
165.	(R)-N-Benzyl-2-Boc-amino-3-methoxypropionamide	196601-69-1	Lacosamide / prevent and control seizures
166.	(R)-2-amino-N-benzyl-3-methoxypropanamide	196601-69-1	Lacosamide / prevent and control seizures
167.	Baricitinib	1187594-09-7	API /treat rheumatoid arthritis
168.	Pramipexole	104632-26-0	API /to treat Parkinson's disease
169.	N-(trans)-4-hydroxycyclohexyl)acetamide	27489-60-7	Pramipexole /to treat Parkinson's disease
170.	N-(4-oxocyclohexyl)acetamide	27514-08-5	Pramipexole /to treat Parkinson's disease
171.	(-/+)-2,6-Diamino-4,5,6,7-tetrahydro benzothiazole	104617-49-4	Pramipexole /to treat Parkinson's disease
172.	Tigecycline	220620-09-7	API /treat certain serious bacterial infections
173.	Ivabradine Hydrochloride	148849-67-6	API /chronic heart failure NYHA II to IV class with systolic dysfunction
174.	3-(3-chloropropyl)-7,8-dimethoxy-1,3-dihydro-2H-benzazepin-2-one	85175-59-3	Ivabradine Hydrochloride / chronic heart failure NYHA II to IV class with systolic dysfunction
175.	3-(3-chloropropyl)-7,8-dimethoxy-1,3,4,5-tetrahydro-2H-3-benzazepin-2-one	85175-65-1	Ivabradine Hydrochloride / chronic heart failure NYHA II to IV class with systolic dysfunction
176.	Fesoterodine	286930-03-8	API /treat overactive bladder
177.	2-((R)-3-diisopropylammonium-1phenylpropyl)-4-(hydroxymethyl) phenol	380636-50-0	Fesoterodine /treat overactive bladder
178.	2-((R)-3-diisopropylammonium-1phenylpropyl)-4-(hydroxymethyl) phenyl benzyl ether fumarate	1418144-66-7	Fesoterodine /treat overactive bladder
179.	2-((R)-3-diisopropylammonium-1phenylpropyl)-4-methyl phenyl ester DTTA salt	1428856-52-3	Fesoterodine /treat overactive bladder
180.	Flupitrine maleate	75507-68-5	API / treat pain, such as pain associated with muscle tension, cancer pain, menstrual pain and pain following orthopaedic surgery or injuries
181.	Mirabegron	223673-61-8	API /treat overactive bladder with symptoms of frequent or urgent urination and urinary incontinence

182.	(2R)-2-hydroxy-N-[2-(4-nitrophenyl) ethyl]-2-phenylacetamide	521284-19-5	Mirabegron /treat overactive bladder with symptoms of frequent or urgent urination and urinary incontinence
183.	(1R)-2-[[2-(4-nitrophenyl) ethyl] amino]-1-phenylethanol	521284-21-9	Mirabegron /treat overactive bladder with symptoms of frequent or urgent urination and urinary incontinence
184.	(1R)-2-[[2-(4-aminophenyl) ethyl] amino]-1-phenylethanol hydrochloride	521284-22-0	Mirabegron /treat overactive bladder with symptoms of frequent or urgent urination and urinary incontinence
185.	Letrozole	112809-51-5	API /treat certain types of breast cancer
186.	Gemcitabine	95058-81-4	API / treat pancreatic cancer
187.	Copacitabine	154361-50-9	API /treat early breast cancer in postmenopausal women
188.	1,2,3-tri-O-acetyl-5-deoxy-β-D-ribofuranose	62211-93-2	Capecitabine / treat early breast cancer in postmenopausal women
189.	2,3-di-O-acetyl-5'-deoxy-5-fluorocytidine	161599-46-8	Capecitabine / treat early breast cancer in postmenopausal women
190.	2,3-di-O-acetyl-5'-deoxy-5-fluoro-N-(pentylloxycarbonyl)cytidine	162204-20-8	Capecitabine / treat early breast cancer in postmenopausal women
191.	Imatinib mesylate	152459-95-5	API /treat certain types of leukemia
192.	Bortezomib	179324-69-7	API / treat people with multiple myeloma (a type of cancer of the bone marrow)
193.	N, N- Bis (Trimethylsilyl(1R)1-(3aS,4S,6S,7aR)hexahydro-3a,5,5-trimethyl-4,6-methanol-1,3,2-benzodioxaborol-2-yl)3-methyl butyl amine	179324-69-7	Bortezomib / treat people with multiple myeloma (a type of cancer of the bone marrow)
194.	4,6-methane-1,3,2-benzodioxaborole-2-methanamine hexamine hexahydro-3a,5,5-trimethyl-α(2-methyl-propyl)-(αR,3aS,6S,7aR) tri-fluoro acetate.	85167-14-2	Bortezomib / treat people with multiple myeloma (a type of cancer of the bone marrow)
195.	L-Phenyl alanine Methyl Ester HCl	7524-50-7	Bortezomib / treat people with multiple myeloma (a type of cancer of the bone marrow)
196.	N – (Pyrazinyl Carbonyl) L-phenyl Alanine Methyl Ester	73058-37-4	Bortezomib / treat people with multiple myeloma (a type of cancer of the bone marrow)
197.	Ruxolitinib	941678-49-5	API / treat myelofibrosis or polycythemia vera
198.	(betaR)-beta-Cyclopentyl-4-(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-1H-pyrazole-1-propanenitrile	1146629-84-6	Ruxolitinib /treat myelofibrosis or polycythemia vera
199.	Olaparib	763113-22-0	API /by slowing or stopping the growth of cancer cells

200.	2-Fluoro-5-((4-oxo-3,4-dihydrophthalazin-1-yl) methyl) benzoic acid	763114-26-7	Olaparib /by slowing or stopping the growth of cancer cells
201.	4-(4-Fluoro-3-(piperazine-1-carbonyl) benzyl) phthalazin-1(2H)-one	763111-47-3	Olaparib /by slowing or stopping the growth of cancer cells
202.	Favipiravir	259793-96-9	API /COVID-19 in several countries including Japan, Russia, and India, under emergency provisions
203.	3,6-Difluoropyrazine-2-carbonitrile	356783-28-3	Favipiravir / COVID-19 in several countries including Japan, Russia, and India, under emergency provisions
204.	3,6-Difluoropyrazine-2-carboxamide	356783-29-4	Favipiravir / COVID-19 in several countries including Japan, Russia, and India, under emergency provisions
205.	Diclofenec sodium	15307-79-6	API /relieve pain, reduce swelling and ease inflammation
206.	Carvedilol	72956-09-3	API /treat high blood pressure and heart failure
207.	1,3cyclohexandione mono phenyl hydrazone	27385-45-1	Carvedilol / treat high blood pressure and heart failure
208.	1,2,3,4-tetrahydrocarbazol-4-one	15128-52-6	Carvedilol / treat high blood pressure and heart failure
209.	4-hydroxy-9-(H) carbazole	52602-39-8	Carvedilol / treat high blood pressure and heart failure
210.	4-oxyranylmethoxy-9-(H)-carbazole	1198090-71-9	Carvedilol / treat high blood pressure and heart failure
211.	Etodolac	41340-25-4	API /relieve pain, tenderness, swelling, and stiffness caused by osteoarthritis
212.	Etodolac Methyl Ester	122188-02-7	Etodolac / relieve pain, tenderness, swelling, and stiffness caused by osteoarthritis
213.	Diltiazam	33286-22-5	API /treat high blood pressure and to control angina (chest pain)
214.	3-(2-amino-phenyl sulfanyl)-2-hydroxy-3-(4-methoxy-phenyl)-propionic acid methyl ester	18869-47-1	Diltiazam /treat high blood pressure and to control angina (chest pain)
215.	3-(2-amino-phenyl fanyl)-2-hydroxy-3-(4-methoxy-phenyl)-propionic acid	28030-15-1	Diltiazam /treat high blood pressure and to control angina (chest pain)
216.	3-hydroxy-2-(4-methoxy-phenyl)-2,3-dihydro-5H-benzo[b][1,4]thiazepin-4-one	42399-49-5	Diltiazam /treat high blood pressure and to control angina (chest pain)
217.	5-(2-Dimethylamino-ethyl)-3-hydroxy-2-(4-methoxy-phenyl)-2,3-dihydro-5H-benzo[b][1,4]thiazepin-4-one	42399-49-5	Diltiazam /treat high blood pressure and to control angina (chest pain)
218.	Zonisamide	68291-97-4	API /treat certain types of seizures
219.	1,2-Benzisoxazole-3-acetic acid	4865-84-3	Zonisamide /treat certain types of seizures
220.	1,2-Benzisoxazole-3-methane	73101-64-1	Zonisamide /treat certain types of

	sodium sulphonate			seizures
221.	Azilsartanmedoxomil	863031-21-4		API /treat high blood pressure (hypertension)
222.	2-[2-ethyl-1-oxo-6-[4-(phenylcarbamoylamino)phenyl]-3,4-dihydronaphthalen-2-yl]acetic acid	-		Azilsartanmedoxomil / treat high blood pressure (hypertension)
223.	(2R)-N-[3-[[3-(furan-2-ylmethoxymethyl)phenyl]carbamoyl]phenyl]-2,3-dihydro-1-benzofuran-2-carboxamide	-		Azilsartanmedoxomil / treat high blood pressure (hypertension)
224.	Iron sucrose	8047-67-4		API /patients with chronic kidney disease on dialysis to prevent dangerous increases in phosphates
225.	Ferric carboxymaltose	9007-72-1		API /treat iron-deficiency anemia
226.	Ferumexitol	722492-56-0		API /to treat iron deficiency anemia
227.	Ferric citrate	3522-50-7		API /to control phosphorus levels in adults with chronic kidney disease who are on dialysis
228.	Sucroferric oxyhydroxide	20344-49-4		API to lower high blood phosphate levels in people who are on dialysis due to severe kidney disease
229.	Ibrutinib	936563-96-1		API /treat certain cancers
230.	3-(4-Phenoxyphenyl)-1H-pyrazolo[3,4-d]pyrimidin-4-amine	330786-24-8		Ibrutinib /treat certain cancers
231.	(R)-3-(4-Phenoxyphenyl)-1-(piperidin-3-yl)-1H-pyrazolo[3,4-d]pyrimidin-4-amine	1022150-12-4		Ibrutinib /treat certain cancers
232.	Acotiamide	185106-16-5		API /to treat symptoms such as bloating, nausea, belching, stomach pain and discomfort
233.	2-(2,4,5-trimethoxybenzoyl)amino-1, 3-thiazole-4-carboxylic acid ethyl ester	5398-36-7		Acotiamide /to treat symptoms such as bloating, nausea, belching, stomach pain and discomfort
234.	2-(2-hydroxy-4,5-dimethoxybenzoyl)amino-1, 3-thiazole-4-carboxylic acid ethyl ester	185106-05-2		Acotiamide /to treat symptoms such as bloating, nausea, belching, stomach pain and discomfort
235.	Varnicline	249296-44-4		API /to help people stop smoking
236.	Dasatinib	302962-49-8		API /to treat a certain type of chronic myeloid leukemia
237.	Norepinephrine Bitartrate	51-42-3		API /to treat severe allergic reaction and cardiac arrest
238.	2-Chloro-1-(3, 4-dihydroxyphenyl) ethanone	99-40-1		Norepinephrine Bitartrate /to treat severe allergic reaction and cardiac arrest
239.	Hexamine salt	100-97-0		Norepinephrine Bitartrate /to treat severe allergic reaction and cardiac arrest
240.	2-amino-1-(3, 4-	5090-29-9		Norepinephrine Bitartrate /to treat

	dihydroxyphenyl) ethanone hydrochloride			severe allergic reaction and cardiac arrest
241.	Norepinephrine Base	51-41-2		Norepinephrine Bitartrate /to treat severe allergic reaction and cardiac arrest
242.	Adrenochrome monosemicarbazone	30552-37-5		API /to treat Adrenochrome monosemicarbazone
243.	Erlotinib	183321-74-6		API /to treat lung and pancreatic cancer
244.	4,5-bis(2-methoxyethoxy)-2-aminobenzonitrile	950596-58-4		Erlotinib /to treat lung and pancreatic cancer
245.	N'-(4,5-bis(2-methoxyethoxy)-2-cyanophenyl)-N,N-dimethylformamide	179688-26-7		Erlotinib /to treat lung and pancreatic cancer
246.	6,7-bis(2-methoxyethoxy)-N-(3-ethynylphenyl)quinazolin-4-amine	183319-69-9		Erlotinib /to treat lung and pancreatic cancer
247.	Bendamustine	3543-75-7		API /to treat certain types of cancer
248.	Enzalutamide	915087-33-1		API /to treat prostate cancer
249.	Oseltamivir	196618-13-0		API /to treat symptoms caused by the flu virus
250.	4-(Acetyl-tert-butyl-amino)-5-diallylamino-3-(1-ethyl-propoxy)-cyclohex-1-enecarboxylic acid ethyl ester Hydrochloride	--		Oseltamivir /to treat symptoms caused by the flu virus
251.	4-Acetylamino-5-diallylamino-3-(1-ethyl-propoxy)-cyclohex-1-enecarboxylic acid ethyl ester	204255-11-8		Oseltamivir /to treat symptoms caused by the flu virus
252.	Lenalidomide	191732-72-6		API /to treat multiple myeloma
253.	4-aminophthalide	3676-85-5		Lenalidomide /to treat multiple myeloma
254.	tafamidis	594839-88-0		API /to treat a certain type of heart failure
255.	4-[(3,5-dichlorobenzoyl)amino]-3-hydroxy- Benzoic acid	926196-67-0		tafamidis /to treat a certain type of heart failure
256.	Venetoclax	1257044-40-8		API /to stop the growth of cancer
257.	Ferric pyro citrate	10058-44-3		API /to maintain hemoglobin levels
258.	1,3-dicyclohexylcarbodiimide	538-75-0		Edoxaban / to prevent strokes or blood clots
259.	N,N'-Dicyclohexylthiourea	1212-29-9		Edoxaban / to prevent strokes or blood clots
260.	N,N'-dicyclohexylurea	2387-23-7		Edoxaban / to prevent strokes or blood clots
261.	Duloxetine	136434-34-9		API /to treat depression and anxiety
262.	[(s)-3-(dimethylamino)-1-(thiophen-2-yl)propan-1-ol L-Mandelate]	5424-47-5		Duloxetine /to treat depression and anxiety
263.	[(s)-3-(dimethylamino)-1-(thiophen-2-yl)propan-1-ol]	132335-44-5		Duloxetine /to treat depression and anxiety
264.	[(s)-N,N-dimethyl-3-(naphthalen-	132335-47-		Duloxetine /to treat depression and

	1-yloxy)-3(thiophen-2-yl)propan-1-amine]	8		anxiety
265.	Duloxetine Base	136434-34-9		Duloxetine /to treat depression and anxiety
266.	Ezetimibe	163222-33-1		API /to help lower cholesterol in the blood
267.	4-[[4-Fluorophenyl)imino]methyl]phenol	3382-63-6		Ezetimibe /to help lower cholesterol in the blood
268.	4-(4-Fluorobenzoyl)butyric acid	149437-76-3		Ezetimibe /to help lower cholesterol in the blood.
269.	(4S)-3-(5-(4-fluorophenyl)-1,5-dioxo pentyl)-4-phenyl-2-oxazolidinone.	189028-93-1		Ezetimibe /to help lower cholesterol in the blood.
270.	3-[5(S)-(4-fluorophenyl)-5-hydroxy-1-oxopentyl]-4-phenyl-2-oxazolidinone	439080-96-3		Ezetimibe /to help lower cholesterol in the blood.
271.	Fluphenazine Decanoate	5002-47-1		API /antipsychotic drug.
272.	Gliclazide	21187-98-4		API /to treat type 2 diabetes.
273.	hexahydrocyclopenta[c]pyrrol-2-amine hydrochloride	58108-05-7		Gliclazide /to treat type 2 diabetes.
274.	Pyrazinamide	98-96-4		API to treat tuberculosis (TB)
275.	Rufinamide	106308-44-5		API /to control seizures.
276.	methyl 1-(2,6- difluorobenzyl)-1H-1 ,2,3-triazole-4-carboxylic acid	166196-11-8		Rufinamide /to control seizures.
277.	Saxagliptin HCl	709031-78-7		API /to treat type 2 diabetes.
278.	(1S,3S,5S)-2-[(2S)-2-tritylamino-2-(3-hydroxyadamantan-1-yl)acetyl]-2-azabicyclo[3.1.0]hexane-3-carboxamide	361440-67-7		Saxagliptin HCl /to treat type 2 diabetes.
279.	(1S,3S,5S)-2-[(2S)-2-tritylamino-2-(3-hydroxyadamantan-1-yl)acetyl]-2-azabicyclo[3.1.0]hexane-3-carbonitrile	709031-78-7		Saxagliptin HCl /to treat type 2 diabetes.
280.	Brivaracetam	357336-20-0		API to treat partial onset seizures in people with epilepsy.
281.	(3R)-3- 3-(Bromomethyl) hexanoic Acid			Brivaracetam /to treat partial onset seizures in people with epilepsy
282.	Methyl (3R)-3-(Bromomethyl) hexanoate	1956435-91-8		Brivaracetam /to treat partial onset seizures in people with epilepsy
283.	Velbenazine	1025504-45-3		API /to treat symptoms of tardive dyskinesia,
284.	Tegaserod Maleate	58-46-8		API /to treat chorea.
285.	Rizatriptan	145202-66-0		API /to treat the symptoms of migraine headaches.
286.	1-(4-nitrobenzyl)-1H-1,2,4-triazole	119192-09-5		Rizatriptan / to treat the symptoms of migraine headaches.
287.	1-(4-hydrazinylbenzyl)-1H-1,2,4-triazole hydrochloride	212248-62-9		Rizatriptan / to treat the symptoms of migraine headaches.
288.	2-(5-((1H-1-2-4-triazol-1-	144034-80-		Rizatriptan / to treat the symptoms

	yl)methyl)-1H-indol-3-yl)-N-N-dimethylethanamine	0		of migraine headaches.
289.	Vertioxitine	960203-27-4		API/ to treat depression in adults.
290.	2-[(2,4Dimethylphenyl)sulfanyl]aniline.HCl	1019453-85-0		Vertioxitine/ to treat depression in adults.
291.	1-[2-[(2,4-Dimethylphenyl)thio]phenyl]piperazine	960203-28-5		Vertioxitine/ to treat depression in adults.
292.	Esomiptazole	217087-09-7		API/ heartburn, acid reflux and gastro-oesophageal reflux disease.
293.	Dexlansoprazole	138530-94-6		API/ to treat the symptoms of gastroesophageal reflux disease.
294.	Zoledroic Acid	118072-93-8		API/ to treat high blood calcium levels (hypercalcemia).
295.	imidazole-1-acetic acid hydrochloride	87266-37-3		Zoledroic Acid/ to treat high blood calcium levels (hypercalcemia).
296.	Safinamide	202825-46-5		API/ to treat Parkinson's disease.
297.	Rabiprazole Sodium	117976-89-3		API/ heartburn, acid reflux and gastro-oesophageal reflux disease.
298.	2-((4-(3-methoxypropoxy)-3-methylpyridin-2-yl) methyl thio)-1H-benzo[d]imidazole	117977-21-6		Rabiprazole Sodium/ heartburn, acid reflux and gastro-oesophageal reflux disease.
299.	2-((4-(3-methoxypropoxy)-3-methylpyridin-2-yl) methyl) sulfinyl-1H - benzo(d) imidazole	171440-19-0		Rabiprazole Sodium/ heartburn, acid reflux and gastro-oesophageal reflux disease.
300.	Vilazodone Hydrochloride	163521-08-2		API/ to treat depression.
301.	Pimavanserin	706782-28-7		API/ to treat hallucinations and delusions in people with psychosis from Parkinson's disease.
302.	N-(4-Fluorobenzyl)-1-methylpiperidin-4-amine hydrochloride	359878-47-0		Pimavanserin/ to treat hallucinations and delusions in people with psychosis from Parkinson's disease.
303.	Methyl 2-(4-isobutoxyphenyl)acetate	61904-54-9		Pimavanserin/ to treat hallucinations and delusions in people with psychosis from Parkinson's disease.
304.	2-(4-isobutoxyphenyl)acetic acid	13362-94-2		Pimavanserin/ to treat hallucinations and delusions in people with psychosis from Parkinson's disease.
305.	1-isobutoxy-4-(isocyanatomethyl)benzene	639863-75-5		Pimavanserin/ to treat hallucinations and delusions in people with psychosis from Parkinson's disease.
306.	Linazolid	165800-03-3		API/ to treat different types of bacterial infections, such as pneumonia, skin infections.

307.	3-(2-fluoro-4-nitrophenyl)morpholine	2689-39-6	Linazolide/ to treat different types of bacterial infections, such as pneumonia, skin infections.
308.	N-carbomethoxy-3-fluoro-4-morpholinylaniline	212325-40-1	Linazolide/ to treat different types of bacterial infections, such as pneumonia, skin infections.
309.	(R)-(3-(3-Fluoro-4-morpholinophenyl)-2-oxooxazolidin-5-yl)methyl methanesulfonate	174649-09-3	Linazolide/ to treat different types of bacterial infections, such as pneumonia, skin infections.
310.	(R)-5-(Azidomethyl)-3-(3-fluoro-4-morpholinophenyl)oxazolidin-2-one	168828-84-0	Linazolide/ to treat different types of bacterial infections, such as pneumonia, skin infections.
311.	Hydrochlorothiazide	58-93-5	API/ to treat edema caused by various medical problems, including heart.
312.	4-Amino-6-chlorobenzene-1,3- disulfonic acid diamide	608141-41-9	Hydrochlorothiazide / to treat edema caused by various medical problems, including heart.
313.	Appremilast	608141-41-9	API/ to treat ulcers in the mouth in people with Behcet's syndrome.
314.	Ramelteon	196597-26-9	API/ to help patients who have sleep-onset insomnia
315.	(S)-2-(1,6,7,8-tetrahydro-2H-indeno[5,4-b]furan-8-yl)ethylamine	1053239-39-6	Ramelteon / to help patients who have sleep-onset insomnia.
316.	1,3-Cyclohexane Dione	504-02-9	API/ to prevent nausea and vomiting caused by cancer chemotherapy, radiation therapy, and surgery.
317.	Clopidogrel	113665-84-2	API/to prevent heart attacks and strokes in persons with heart disease (recent heart attack).
318.	Methyl 2-amino-2 -(2-chlorophenyl)acetate	212838-70-5	Clopidogrel/to prevent heart attacks and strokes in persons with heart disease (recent heart attack).
319.	2-(Thiophen-2-yl)ethyl 4-methylbenzenesulfonate	40412-06-4	Clopidogrel/to prevent heart attacks and strokes in persons with heart disease (recent heart attack).
320.	(S)-Methyl 2-(2-chlorophenyl)- 2-((2-(thiophen-2-yl)ethyl)amino)acetate hydrochloride	141109-19-5	Clopidogrel/to prevent heart attacks and strokes in persons with heart disease (recent heart attack).
321.	(S)-Methyl 2-(2-chlorophenyl)-2-(6,7- dihydrothieno [3,2-c]pyridin-5(4H)-yl)acetate sulfate	135046-48-9	Clopidogrel/to prevent heart attacks and strokes in persons with heart disease (recent heart attack).
322.	Molnupiravir	2349386-89-4	API/potent ribonucleoside analog that inhibits the replication of SARS-CoV-2.
323.	Guanine	73-40-5	API/Antiviral drug
324.	Apalutamide	608141-41-9	API/ to treat ulcers in the mouth in people with Behcet's syndrome.
325.	1-((3-fluoro-4-(methylcarbamoyl)phenyl)amino) cyclobutanecarboxylic acid	2227589-22-0	Apalutamide / to treat ulcers in the mouth in people with Behcet's syndrome.

326.	Atorvastatin Calcium	134523-00-5	API /to lower cholesterol.
327.	4-Methyl-3-oxo-Nphenylpentanamide	124401-38-3	Atorvastatin Calcium / to lower cholesterol.
328.	2-bromo-4'-fluoro-2-phenyl acetophenone	403-29-2	Atorvastatin Calcium / to lower cholesterol
329.	(+) 4-(4-Fluorophenyl)-2-isobutyryl-3-phenyl-4-oxo-N-phenylbutanamide	125971-96-2	Atorvastatin Calcium / to lower cholesterol
330.	(4R-Cis)-1,1-dimethylethyl-6-(2-aminomethyl)-2,2-dimethyl-1,3-dioxane-4-acetate	125995-13-3	Atorvastatin Calcium / to lower cholesterol.
331.	Brexpiprazole	913611-97-9	API /to treat the symptoms of schizophrenia.
332.	Sevlamer	52757-95-6	API to control high blood levels of phosphorus in people with chronic kidney disease.
333.	Dimethyl Fumarate	624-49-7	API to treat multiple sclerosis (MS).
334.	EdoxabanTosylate	1229194-11-9	API to reduce the risk of stroke and systemic embolism (SE).
335.	Edoxaban base	480449-70-5	EdoxabanTosylate/ to reduce the risk of stroke and systemic embolism (SE).
336.	EletriptanHbr	177834-92-3	API /to treat migraines.
337.	R-Pyrrolidine-1,2-dicarboxylic acid 1-benzyl ester	3304-59-4	EletriptanHbr/ to treat migraines.
338.	2-(5-Bromo-1H-indole-3-carbonyl)- pyrrolidine-1-carboxylic acid benzyl ester	199659-03-5	EletriptanHbr/ to treat migraines.
339.	(R)-5-Bromo-3-(1-methylpyrrolidin-2-ylmethyl)-1H-indole	143322-57-0	EletriptanHbr/ to treat migraines.
340.	5-(2-Benzenesulfonyl vinyl)-3-(1-methyl-pyrrolidin-2-ylmethyl)-1H-indole	188113-69-1	EletriptanHbr/ to treat migraines.
341.	Eltrombopag Olamine	496775-61-2	API the treatment of adult chronic immune thrombocytopenia purpura (ITP).
342.	2-(3,4-dimethyl phenyl)-5-methyl-1,2-dihydro-3H- pyrazol-3-one	277299-70-4	Eltrombopag Choline/ the treatment of adult chronic immune thrombocytopenia purpura (ITP).
343.	2-Bromo-6-nitroanisole	98775-19-0	Eltrombopag Choline/ the treatment of adult chronic immune thrombocytopenia purpura (ITP).
344.	3-amino-2-hydroxy biphenyl-3-carboxylic acid	376592-93-7	Eltrombopag Choline/ the treatment of adult chronic immune thrombocytopenia purpura (ITP).

345.	Fingolimod	162359-55-9	API/ to prevent episodes of symptoms and slow the worsening of disability.
346.	N-[2,2-dimethyl-5-[2-(4-octylphenyl)ethenyl]-1,3-dioxan-5-yl]-, Carbamic acid benzyl ester	1313876-84-4	Fingolimod/ to prevent episodes of symptoms and slow the worsening of disability.
347.	Migalastat	108147-54-2	API/ can decrease some symptoms caused by Fabry disease.
348.	benzyl ((2S,3S)-2-(tertbutyldimethylsilyloxy)-3-(2,2-dimethyl-5oxo-1,3-ioxan-4-yl)-3 hydroxypropyl)carbamate	-	Migalastat/ can decrease some symptoms caused by Fabry disease.
349.	((tertbutyldimethylsilyloxy)-2,2-dimethylhexahydro-4H-[1,3]dioxino[5,4-b]pyridin-8-ol	-	Migalastat/ can decrease some symptoms caused by Fabry disease.
350.	Montelukast Sodium	151767-02-1	API/ to control and prevent symptoms caused by asthma.
351.	1-(3-[2-(7-Chloro-quinolin-2-yl)-vinyl]-phenyl)-3-[2-(1-hydroxy-1-methyl-ethyl)-phenyl]-propane-1-ol	287930-77-2	Montelukast Sodium/ to control and prevent symptoms caused by asthma.
352.	Methane sulfonic acid 1-(3-[2-(7-Chloro-quinolin-2-yl)-vinyl]-phenyl)-3-[2-(1-hydroxy-1-methyl-ethyl)-phenyl]-propyl ester	75-92-3	Montelukast Sodium/ to control and prevent symptoms caused by asthma .
353.	1-{1-(3-[2-(7-Chloro-quinolin-2-yl)-vinyl]-phenyl)-3-[2-(1-hydroxy-1-methyl-ethyl)-phenyl]-propylsulfanylmethyl}-cyclopropyl)-acetic acid	200804-28-0	Montelukast Sodium/ to control and prevent symptoms caused by asthma .
354.	Montelukast Dicyclohexylamine	577953-88-9	Montelukast Sodium/ to control and prevent symptoms caused by asthma .
355.	Nilotinib	641571-10-0	API/ to treat a certain type of blood cancer (chronic myelogenous leukemia-CML).
356.	Niraparib	1038915-60-4	API/ to treat ovarian cancer, fallopian tube cancer.
357.	tert-butyl (3S)-3-{4-[7-(aminocarbonyl)-2H-indazol-2-yl]phenyl} piperidine-1-carboxylate	.1038916-11-8	Niraparib / to treat ovarian cancer, fallopian tube cancer.
358.	Olanzapine	132539-06-1	API/ to treat certain mental/mood conditions (such as schizophrenia, bipolar disorder).
359.	5-Amino-4-cyano-2-methyl thiophene	23903-46-0	Olanzapine/ to treat certain mental/mood conditions (such as schizophrenia, bipolar disorder).
360.	2-(2-Nitro phenyl amino)-5-methyl thiophene-3-carbonitrile	138564-59-7	Olanzapine/ to treat certain mental/mood conditions (such as schizophrenia, bipolar disorder).
361.	4-Amino-2-methyl-10H-Thieno	138564-60-	Olanzapine/ to treat certain

	[2,3b] [1,5]benzodiazepine.Hydrochloride.	0		mental/mood conditions (such as schizophrenia, bipolar disorder).
362.	Pioglitazone Hcl	112529-15-4		API/ to treat type 2 diabetes.
363.	Prasugrel Hydrochloride	150322-43-3		API/ prevents the platelets in the bloodstream from aggregating and forming blood clots.
364.	3,5-[cyclopropylcarbonyl-2-fluorobenzyl)-2-oxo-2,4,5,6,7,7a-hexahydrothieno[3,2-c]-pyridine	150322-38-6		Prasugrel Hydrochloride/ prevents the platelets in the bloodstream from aggregating and forming blood clots.
365.	Rosuvastatin	287714-41-4		API/ to lower cholesterol.
366.	N-[4-(4-Fluoro-phenyl)-5-formyl-6-isopropyl-pyrimidin-2-yl]-N-methyl-methanesulfonamide	29096-933		Rosuvastatin/ to lower cholesterol.
367.	3-(tert-Butyl-dimethyl-silanyloxy)-7-[4-(4-fluoro-phenyl)-6-isopropyl-2-(methanesulfonylmethyl-amino)-pyrimidin-5-yl]-5-oxo-hept-6-enoic acid methyl ester	355806-00-7		Rosuvastatin/ to lower cholesterol.
368.	7-[4-(4-Fluoro-phenyl)-6-isopropyl-2-(methanesulfonylmethyl-amino)-pyrimidin-5-yl]-3-hydroxy-5-oxo-hept-6-enoic acid methyl ester	147118-39-6		Rosuvastatin/ to lower cholesterol.
369.	7-[4-(4-Fluoro-phenyl)-6-isopropyl-2-(methanesulfonylmethyl-amino)-pyrimidin-5-yl]-3,5-dihydroxyhept-6-enoic acid methyl ester isopropyl-pyrimidin-2-yl]-N-methyl-methanesulfonamide	147118-40-9		Rosuvastatin/ to lower cholesterol.
370.	Rucaparib	283173-50-2		API/ to help maintain the response to other treatments for certain types of ovarian cancer
371.	Salbutamol	18559-94-9		API/ to relieve symptoms of asthma and chronic obstructive pulmonary disease (COPD).
372.	methyl 2-(benzyloxy)-5-(bromoacetyl)benzoate	27475-14-5		Salbutamol / to relieve symptoms of asthma and chronic obstructive pulmonary disease (COPD).
373.	Benzyl Salbutamol	1797879-98-1		Salbutamol/ to relieve symptoms of asthma and chronic obstructive pulmonary disease (COPD).
374.	Sildenafil	171599-83-0		API/ to treat erectile dysfunction.
375.	4-[2-Ethoxy-5-(4-methyl-	200575-15-		Sildenafil/ to treat erectile

	piperazine-1-sulfonyl)-benzoylamino]-2-methyl-5-propyl-2H-pyrazole-3-carboxylic acid amide	1	dysfunction.
376.	5-[2-Ethoxy-5-(4-methyl-piperazine-1-sulfonyl)-phenyl]-1-methyl-3-propyl-1,6-dihydro-pyrazolo[4,3-d]pyrimidin-7-one	139756-21-1	Sildenafil/ to treat erectile dysfunction.
377.	Sugammadex Sodium	343306-79-6	API/ the reversal of neuromuscular blockade induced by rocuronium bromide and vecuronium bromide.
378.	Octakis-(6-deoxy-6-iodo)- γ -Cyclodextrin	168296-33-1	Sugammadex Sodium / the reversal of neuromuscular blockade induced by rocuronium bromide and vecuronium bromide.
379.	Sunitinib	557795-19-4	API/ to treat gastrointestinal stromal tumors.
380.	Tolterodine	124937-51-5	API/ treat overactive bladder.
381.	N,N-Diisopropyl-3-(2-methoxy-5-methylphenyl)-3-phenylpropylamine, hydrogenfumarate	518360-71-9	Tolterodine/ treat overactive bladder.
382.	N,N-Diisopropyl-3-(2-hydroxy-5-methylphenyl)-3-phenylpropylamine, hydrobromide	897314-72-6	Tolterodine/ treat overactive bladder.
383.	Linagliptin	668270-12-0	API/ to treat type 2 diabetes.
384.	8-bromo-7-(but-2-ynyl)-3-methyl-1-((4-methylquinnazolin-2-yl)methyl)-1-H-purine - 2,6(3H,7H)-dione	853029-57-9	Linagliptin/ to treat type 2 diabetes..
385.	(R)-8-(3-azidopiperdini-1-yl)-7-(but-2-ynyl)-3-methyl-1-((4-methylquinazolin-2-yl)methyl)-1H-purine-2,6(3H,7H)-dione	309956-78-3	Linagliptin/ to treat type 2 diabetes.
386.	Triclophos	8060-81-9	API/ used for insomnia and Sedative.
387.	2,2,2-Trichloroethanol	115-20-8	Triclophos/ used for insomnia and Sedative.
388.	2,2,2-trichloroethyl dihydrogen phosphate	30652-5	Triclophos/ used for insomnia and Sedative.
389.	Nadifloxacin	124858-35-1	API/ to the treatment of bacterial infections.
390.	Pidotimod	121808-62-6	API/ treatment of acute infectious exacerbations of chronic bronchitis and chronic obstructive pulmonary disease (COPD).
391.	Glipizide	29094-61-9	API/ to treat type 2 diabetes.
392.	Chlortalidone	77-36-1	API/ to treat high blood pressure and fluid retention.
393.	Azithromycin	83905-01-5	API/ to treat chest infections.

394.	Clarithromycine	81103-11-9	API /treat chest infections.
395.	Fluoxetine	54910-89-3	API / to treat depression, obsessive-compulsive disorder.
396.	3-(Methylamine)- 1-phenylpropan-1-ol.	345-78-8	Fluoxetine / to treat depression, obsessive-compulsive disorder.
397.	Isoprenaline	7683-59-2	API / to the treatment of bradycardia.
398.	Ropivacaine	84057-95-4	API / used to provide anesthesia during a surgery.
399.	Metformin	657-24-9	API / to treat type 2 diabetes.
400.	Ketoprofen	22071-15-4	API /to relieve minor aches and pain from headaches, menstrual periods.
401.	3-(1-Cyanoethyl) benzoic acid	5537-71-3	Ketoprofen / to relieve minor aches and pain from headaches, menstrual periods.
402.	3-(1-Cyanoethyl) benzophenone [Ketonitrile]	21288-34-6	Ketoprofen / to relieve minor aches and pain from headaches, menstrual periods.
403.	Ioxoprofen	68767-14-6	API / reducing inflammation and pain induced by rheumatoid arthritis, osteoarthritis.
404.	Febuxostat	144060-53-7	API /to prevent gout attacks.
405.	Solifenacin	242478-38-2	API /to treat symptoms of an overactive bladder.
406.	Darifenacin	133099-04-4	API / to treat an overactive bladder.
407.	Fluconazole	86386-73-4	API /to prevent and treat a variety of fungal and yeast infections.
408.	(2,4-Difluoro-2-(1h- 1,2,4-Triazole-1-Yl) Acetophenone)	86404-63-9	Fluconazole / to prevent and treat a variety of fungal and yeast infections.
409.	1-[2-(2,4-di fluorophenyl)-2,3-epoxypropyl]-1H-1,2,4-Triazole	86386-76-7.	Fluconazole / to prevent and treat a variety of fungal and yeast infections.
410.	Moxifloxacin	354812-41-2	API / to treat certain infections caused by bacteria.
411.	(5,8-dihydronaphthalen-1-yl acetate)		Moxifloxacin / to treat certain infections caused by bacteria.
412.	Iansoprazole	103577-45-3	API /for indigestion, heartburn and acid reflux and gastroesophageal-reflux-disease (GORD).
413.	4-Nitro-2,3- Dimethyl Pyridine-N-oxide.	37699-43-7	Iansoprazole / for indigestion, heartburn and acid reflux and gastroesophageal-reflux-disease (GORD).
414.	4(-2-2-2-trifluor ethoxy)-2Hydroxymethyl-3-methyl pyridime hydro chloride	103577-40-8	Iansoprazole / for indigestion, heartburn and acid reflux and gastroesophageal-reflux-disease (GORD).
415.	4(-2-2-2-trifluor ethoxy)-2chloro methyl-3-methyl pyridime hydro chloride	127337-60-4	Iansoprazole / for indigestion, heartburn and acid reflux and gastroesophageal-reflux-disease (GORD).
416.	4(-2-2-2-trifluor ethoxy)- 3-	103577-40-	Iansoprazole / for indigestion,

	methyl pyridimemethylthio]-1H-benzimidazole	8		heartburn and acid reflux and gastroesophageal-reflux-disease (GORD).
417.	Bupropion Hydrochloride	31677-93-7		API/ to treat depression.
418.	3-Bromo-1-(3-chloro-phenyl)-propan-1-one	500011-86-9		Bupropion Hydrochloride/ to treat depression.
419.	Bupropion	34841-39-9		Bupropion Hydrochloride/ to treat depression.
420.	Nimesulide	51803-78-2		API/ for pain relief and for the prevention of fever.
421.	O-Phenoxy Nitrobenzene	14467-69-7		Nimesulide / for pain relief and for the prevention of fever.
422.	O-Phenoxy Aniline	2688-84-8		Nimesulide / for pain relief and for the prevention of fever
423.	O-Phenoxy Methane	3144-09-0.		Nimesulide / for pain relief and for the prevention of fever.
424.	Folic acid	59-30-3		API/ treat or prevent folate deficiency anaemia.
425.	4-Nitro benzoyl Chloride	122-04-3		Folic acid / treat or prevent folate deficiency anaemia.
426.	2-(4-Nitro benzoyl amino)pentanedionic	2378-95-2		Folic acid / treat or prevent folate deficiency anaemia.
427.	2-(4-Aminobenzoyl amino)pentanedionic acid	4271-30-1		Folic acid / treat or prevent folate deficiency anaemia.
428.	1,1,3-Trichloro propane-2-one	96-18-4		Folic acid / treat or prevent folate deficiency anaemia.
429.	Celecoxib	169590-42-5		API/ to relieve pain, tenderness, swelling and stiffness caused by osteoarthritis.
430.	(4,4,4-trifluoro-1-(4-methyl phenyl) butano-1,3-diono)	720-94-5		Celecoxib / to relieve pain, tenderness, swelling and stiffness caused by osteoarthritis.
431.	Etoricoxib	202409-33-4		API/ relieves pain and inflammation.
432.	1-(4-Methanesulfonyl-Phenyl)-ethanone	221615-75-4		Etoricoxib/ relieves pain and inflammation.
433.	(4-Methanesulfonyl-Phenyl)-acetic acid	90536-66-6		Etoricoxib/ relieves pain and inflammation.
434.	2-(4-Methanesulfonyl-Phenyl)-1-(6-methyl-pyridin-3-yl)-ethanone	221615-75-4		Etoricoxib/ relieves pain and inflammation.
435.	(2-Chloro-3-dimethylamino-allylidene)-dimethyl-ammonium Salt of Phosphorus Hexafluoride	291756-76-8		Etoricoxib/ relieves pain and inflammation.
436.	Ondansetron	99614-02-5		API/ trigger nausea and vomiting.
437.	Salicylic acid	69-72-7		API / to help clear and prevent pimples and skin blemishes.
	R&D*		0.1	
	TOTAL		400.0 TPM	

3) The project falls under Category B2 of project activity 5(f) as per the schedule of EIA Notification 2006 and amendment dated 27th March, 2020.

4) The proposal was considered in the SEAC video conference meeting dated 28.03.2022.

- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) Committee also deliberated on plot allotment letter, safety aspect of Chlorine, CS₂, Compatibility chart etc.
- 8) Committee found presentation and submission of project proponent satisfactory.
- 9) PP submitted an undertaking ensuring proposed product profile is in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as category B2 projects. Undertaking as proposal of said product are eligible to consider under B2 category as per the notification of MoEF&CC dated 27.03.2020
- 10) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 1223(E) dated 27.03.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.
- 11) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details
A-1	Project cost	

Total cost of Proposed Project

(Rs. in Crores):

Total Project	
25.0 Crore	

Break-up of proposed project Cost:

Details	Project Cost (Rs. In Crores)
Land	4.4
Building	5.5
Machinery	9.6
Env. & Safety	5.0
Miscellaneous	0.5
Total	25.0

A-2 Details of CER -

PP shall carry out CER activities as below:

Activities (On basis of Needs Assessment)	Phase Wise Budget		
	1 st Year	2 nd Year	Total
Solar panel & Solar Street light <ul style="list-style-type: none"> • Provide solar panel for primary school/ Gram Panchayat/ Primary Health center (Solar panel: 4 KW – 2.0 Lakh X 3 Nos. = Total 6.0 lakh) • Solar street light: 20W X 5 Nos (20,000 per light) Village: Vegni, Rahiyad, Vadadla	14.0	7.0	21.0
Rain water recharge <ul style="list-style-type: none"> • Percolated borewell -4 Nos. & Maintenance) (Rs. lakh 2.0 each) Common Drinking water facility (Common RO Plant) <ul style="list-style-type: none"> • Provide RO plant (560 LPH – Cost in Rs. 2.0 lakh each) Village:Atali, Samatpor, Akhod, Bhelsli	8.0	8.0	16.0
Solid Waste Management– <ul style="list-style-type: none"> • Installation of OWC (50 Kgs per day) X 4 Nos 	6.0	6.0	12.0

<p>@ 2.5 Lacs each</p> <ul style="list-style-type: none"> Distribution of Twin-bins (Wet & Dry) – For Segregation of Waste – Rs. 0.5 lacs each (Total Budget for Bins Rs. 1000 per twin-bins X 50 Nos. of bins) <p>Village: Suva, Jolva, Koliyad, kaladara</p>							
<p>Tree plantation –</p> <ul style="list-style-type: none"> Cost of 1 plant – 500/- with tree Guard & maintenance of water. Proposes tree guards for surviving of plants & trees. (100 Nos. each) <p>Village: Suva, Jolva</p>	--	1.0	1.0				
Total Cost		Approx. INR 50.0 Lakhs					
✓							
B Land / Plot ownership details:							
<p>Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/ANK/TRF/FTO/DAH5/256 dated: 17/10/2021</p> <p>(Dr. Vijaykumar Dharamshibhai Lunagariya is applicant and one of the Directors of M/s. Bileshwar Pharmaceuticals Pvt. Ltd.)</p>							
B-1 Plot area							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%; text-align: center;">Total Plot area</td> <td style="width: 20%;"></td> </tr> <tr> <td style="text-align: center;">17491.02 Sq. m.</td> <td></td> </tr> </table>				Total Plot area		17491.02 Sq. m.	
Total Plot area							
17491.02 Sq. m.							
-							
B-2 Area adequacy							
<ul style="list-style-type: none"> ➤ Area required for ETP: 300.0 m². ➤ 300.0 m² area provided for the Boiler & Utility. ➤ Company has provided 50 m² for storage fly ash storage area (fly ash will be collect, stored in hazardous area). ➤ 900 m² (G+2) (3 Nos.) area will be provided for the manufacturing of the proposed products 							
S. N.	Particulars	Criteria for Storage	Inventory Required (MT)(KL)	Area Required m²	Area Proposed m²		
1	Finished product storage area (1-week inventory)	(500 Drums/Bags) 0.5 MT/ 1m ²	100.0	200.0	240.0		
2	Raw Material Storage area (G+2) (1-week inventory)	(2000 Drums/Bags) 0.5 MT/ 1m ²	400.0	800.0	1350.0		
3	Tank farm Area (Non-	Tanks	95.0	150.0	200.0		

	PESO)	15 KL X 1 20 KL X 4			
4	Tank farm Area (PESO)	Tanks 20 KL X 5	100.0	400.0	600.0
5	Other Tank Storage Area (CS2 Tank)	10 KL X 1	10.0	20.0	30.0
6	Cylinder Storage Area	(Nitrogen Gas, HCl Gas, Chlorine Gas, Hydrogen Gas & Ammonia gas)	1.8	40.0	90.0
7	Hazardous Waste Storage Area (90 Days inventory)	-	479.0 & 100 (Fly Ash)	280.0	510.0
			1285.8 MT	1890.0 m²	3020.0 m²

Note: Above storage area calculation has been done considering worst case of production.

Based on area proposed (column no 6) against area required (column no 5) is much higher. Hence, it is envisaged that area is adequate.

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	5772.02 sq. m. (inside plant premises)
% of total area	33%

Comments:

The condition shall be given that -

- The PP shall develop green belt (5772.02 sq. m. (inside plant premises) 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
55 Employees
(Direct: 25 Employees
Indirect: 30 Employees)

D**WATER****D-1****Source of Water Supply**

- GIDC Water Supply Authority (Vide letter No.: GIDC/DEE/WS/BRH/1154 Dated: 10/12/2021)

Comments:

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

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

Sr. No	Category	Water Consumption (KL/Day)			Remarks
		Total Water	Recycled	Fresh Water	
1.	Domestic	2.5	--	2.5	Source: GIDC Water Supply Authority
2.	Gardening	5.0	--	5.0	

3.	Industrial				
	Process	135.0	-	135.0	WC: Venetoclax
	Boiler	36.00	29.00	7.00	Total Water requirement: 36 KLD Condensate Recovery: 29 KLD Make up Water: 7 KLD
	Cooling	28.0	28.0	--	
	Washing	3.0	--	3.0	
	Scrubbing	20.0	20.0	--	
	Total Industrial	222.0	77.0	145.0	
	Total (1 + 2 + 3)	229.5	77.0	152.5	

-

Comments:

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

D-3 | Waste water generation (KLD)

-

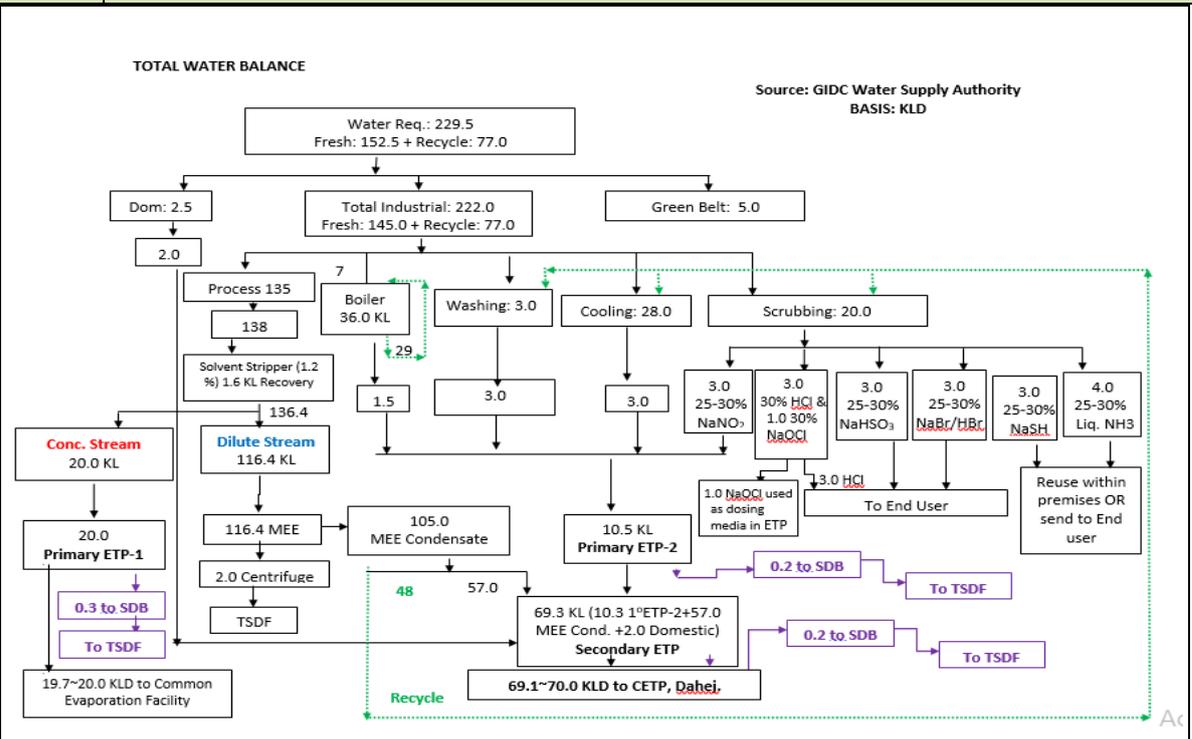
	Category	Waste water generation (KL/Day)	Remarks
1.	Domestic	2.0	Will be treated in ETP
2.	Industrial		
	Process	138.0	WC: Venetoclax
	Boiler	1.5	Will be treated in ETP
	Cooling	3.0	
	Washing	3.0	
	Scrubbing Solution (25-30% NaNO ₂)	3.0	
	Scrubbing Solution (30% HCl)	3.0	
	Scrubbing Solution (30% NaOCl)	1.0	Will be used in ETP as dosing media
	Scrubbing Solution (30% Liq. Ammonia)	4.0	Reuse within premises or send to end user
	Scrubbing Solution (25-30% HBr/NaBr)	3.0	End User
	Scrubbing Solution (25-30% NaSH)	3.0	Reuse within premises or send to end user
	Scrubbing Solution (25-30% NaHSO ₃)	3.0	End User
	Total Ind.	165.5	

	Total (1 + 2)	167.5	
-			
<u>Comments:</u>			
<p>➤ 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.</p>			
-			
D-4	Break-up of waste water disposal & facility (For Domestic)		
Sr. no.	Quantity	Facility	
	KLD		
1	2.0 KLD	be treated in ETP & Then send to CETP of GIDC-Dahej.	
<u>Comments:</u>			
<p>1) 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.</p>			
D-5a	Break-up of waste water disposal & facility (For Industrial)		
Sr. no.	Quantity	Facility	
	KLD		
1	19.7 KLD	Treated in In-hose MEE and the send to M/s. BEIL, Dahej.	
2	67.1 KLD	Effluent will be sent to CETP of GIDC-Dahej.	
3	09.0 KLD	Scrubbing Solution will be Sent to authorized end-user	
4	07.0 KLD	Scrubbing Solution shall be reused within premises or send to end user	
5	01.0 KLD	Used as Dosing media in ETP	
6	48.0 KLD	Reuse in cooling, Washing & Scrubbing.	
7	02.7 KLD	Sludge to TSDF	
8	09.4 KLD	Evaporation Loss in in-house MEE	
9	01.6 KLD	Recovery from solvent stripper send to CHWIF.	
Total	165.5		
Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)			

Membership certificates.....

- 1) CETP of GIDC Dahej (Vide letter no.: GIDC/BRH/DEE/DRG/1013, Dated:11/02/2022)
- 2) Common Evaporation Facility (Vide letter no.: BEIL/ANK/2021, Dated: 25/11/2021)

D-5b | Simplified water balance diagram



D-5c | Summary

Summary of water requirement	Quantity	Remarks
	KLD	
Total water requirement for the project (A)	229.5 KLD	
Quantity to be recycled (B)	77 KLD	
Total fresh water requirement (C)	152.5 KLD	Source: GIDC Water Supply
Ensure Total water requirement = Recycled water+ Fresh water		
i.e. A = B + C		

Comments:

1. Total water requirement for the project shall not exceed 229.5 KLD. Unit shall reuse 77.00 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 152.5 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:

Industrial effluent from process shall be treated in solvent stripper and then segregated into high Concentration & Low Concentration Effluent.

High Concentration:

- Process High Concentration Effluent 20.0 KLD shall be treated in Stripper(to bring down for achieving inlet norms of CMEE)& output of stripper is subjected to Primary ETP and then 19.7~20.0 KLD send to Common Evaporation facility.

Low Concentration Effluent:

- Low Concentration Effluent ...
- 116.4 KLD from Process shall be treated into in-house Stripper &MEE. 105 KLD MEE-Condensate out of which 48 KLD MEE-Condensate will be reused within premises in cooling and scrubbing Section.
- Remaining 57 KLD effluent from MEE-Condensate will combine with 1.5 KLD effluent from Boiler, 3.0 KLD effluent from Cooling, 3.0 KLD effluent from Washing,3.0 KLD effluent from Scrubbing and2.0 KLD Domestic Wastewater i.e. total 69.5 KLD will be treated into Primary & Secondary ETP.
- 69.1 KLD will be sent to CETP, Dahej after achieving norms prescribed by GPCB to ensure no adverse impact on Human Health and Environment. (0.4 KLD Sludge will be sent to TSDF after drying in SDB)

- Scrubbing Solution 9.0 KLD will be sent to end users registered under Rule-9, 7.0 KLD will be reused within Premises and 1 KLD will be used as Dosing media in ETP.

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 (1.5 TPH)	30/0.5	Natural Gas OR Bio Coal	1700 SCM/Day OR 3.5 MT/Day	PM < 150 mg/Nm ³ SO ₂ < 100 ppm NO _x < 50 ppm	MCS + Bag Filter + Scrubber & Adequate Stack height
2.	Boiler (2.0 TPH)	30/0.5	Natural Gas OR Bio Coal	2260 SCM/Day OR 5.0 MT/Day		MCS + Bag Filter + Scrubber & Adequate Stack height
3.	Thermic Fluid Heater (2 Lac KCal/Hr.) (2 Nos.)	30/0.5	Natural Gas OR Bio Coal	800 SCM/Day OR 2 MT/Day for each		MCS + Bag Filter + Scrubber & Adequate Stack height for each
4.	DG Set 250 KVA (Stand by)	11/0.25	Diesel	30 lit/Hr.		Adequate Stack height
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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 (Chlorination)	HCl:20 mg/Nm ³ Cl ₂ : 09 mg/Nm ³		18/0.2	Two Stage Water/Alkali Scrubber	
2.	Reaction Vessel (Sulfonation)	SO ₂ :40 mg/Nm ³ H ₂ S:05 mg/Nm ³				
3.	Reaction Vessel (Bromination)	HBr:30 mg/Nm ³ NO _x : 25 mg/Nm ³		18/0.2	Two Stage Alkali Scrubber	

4.	Reaction Vessel (Nitration)						
5.	Reaction Vessel (Amination)	NH3: 175 mg/Nm3	18/0.2	Two Stage Water 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. 							
<ul style="list-style-type: none"> - 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. 							
<ul style="list-style-type: none"> - 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.						
Sr. No.	Product Name	Solvent	Qty. Used MT/MT	Qty. Recovered MT/MT	Distillation Residue	Total Losses / Fresh	Solvent Recovery %
1	Carvedilol	IPA	0.75	0.72	0.0188	0.030	96
		Toluene	0.85	0.81	0.0298	0.0425	95
		Cyclohexane	1.02	0.98	0.0255	0.0408	96
		Ethyl acetate	0.95	0.91	0.0238	0.0380	96

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

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

F-3	LDAR proposed:
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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

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.	Type/Name of Hazardous waste	Specific Source of generation (Name of the Activity, Product etc.)	Category and Schedule as per HW Rules.	Quantity (MT/ Annum)	Management of HW
1.	ETP Sludge	ETP	35.3/SCH-I	256.0	
2.	MEE Salt	From MEE	35.3/SCH-I	735.0	Collection, Storage, Transportation, disposal at nearest TSDF site.
3.	Process Waste (Inorganic)	Mfg. Process	28.1/SCH-I	925.0	
4.	Used Oil/ Spent Oil	Maintenance Activities	5.1/SCH-I	0.2	Collection, Storage, Transportation; reuse as lubricant or by selling to Authorized re-refiners.
5.	Discarded Containers/ Bags/Liners	Raw Material Supplier	33.1/SCH-I	400 (Nos. 24000 Container) (Nos. 80000 Bags/Liners)	Collection, Storage, Transportation; Decontamination and Reuse or Sale to Authorized Vendor.
6.	Distillation Residue	Distillation process	20.3/SCH-I	536.0	Collection, Storage, Transportation &

7.	Process Waste (Organic)	Mfg. Process	28.1/ SCH-I	974.0	Disposal by send to pre/co processing unit (Cement Industries) OR by incineration at CHWIF.
8.	Spent Carbon/Hyflow	Purification process	28.3/ SCH-I	195.0	
9.	Spent Catalyst	Mfg. Process	28.2/ SCH-I	98.0	
10.	Spent Solvent	Distillation process	28.6/ SCH-I	*23779.0	Collection, Storage, Handling recover & reused by subjecting to distillation assembly within the Premises.
		Solvent Stripper		584.0	Collection, Storage, Transportation & sent to pre/co-processing (cement industries) or disposal by incineration at CHWIF
11.	Scrubbing Solution 25-30% NaNO ₂	From Scrubber (Nitration)	28.1/ SCH-I	1095.0 KL	Collection, Storage & treated in ETP.
12.	Scrubbing Solution 25-30% Liq. Ammonia	From Scrubber (Ammination)	28.1/ SCH-I	1460.0 KL	Collection, Storage & Reuse within premises. (Mfg. Process 2-Cyanoacetamide: 8928 MT/Annum) OR Sell to End Users having permission under Rule-9.
13.	Scrubbing Solution 30% NaOCl	From Scrubber (Chlorination)	28.1/ SCH-I	365.0 KL	Collection, Storage & used as Dosing media in ETP.
14.	Scrubbing Solution Hydrochloric Acid 30%	From Scrubber (Chlorination)	28.1/ SCH-I	1095.0 KL	Collection, Storage, Transportation & Sell to End Users having permission under Rule-9.
15.	Scrubbing Solution 25-30% HBr/NaBr	From Scrubber (Bromination)	28.1/ SCH-I	1095.0 KL	
16.	Scrubbing Solution 25-30% NaHSO ₃	From Scrubber (Sulfonation)	28.1/ SCH-I	1095.0 KL	

17.	Spent Sulphuric acid	Mfg. Process	28.1/ SCH-I	1950.KL	
18.	Aluminum Chloride Aq. Solution	Mfg. Process	28.1/ SCH-I	2142.0 KL	
19.	Scrubbing Solution 25-30% NaSH	From Scrubber (Sulfonation)	28.1/ SCH-I	1095 .0 KL	Collection, Storage & Reuse within premises. (Mfg Process Salicylic Acid: 2160.0 MT/Annum) <u>OR</u> Sell to End Users having permission under Rule-9.
20.	Off Specification	Mfg. Process (Batch Failure)	28.4/ SCH-I	2.0	Collection, Storage, Transportation & send to pre/co processing unit (Cement Industries) OR send to CHWIF.
Comments:					
<ul style="list-style-type: none"> ➤ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement. ➤ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB. 					
G-2	Non- Hazardous waste management matrix				
✓ Fly Ash generation will be 400.0 MTPA					
<u>Comments:</u>					
<ul style="list-style-type: none"> ➤ Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit. 					
H	SAFETY details				
H-1	Details regarding storage of Hazardous chemicals				
-					
<u>Storage of Hazardous chemicals in Tanks</u>					

Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
NON - PESO – 5 Nos.				
1	Sulphuric Acid	20 KL	1 Nos.	Toxic
2	Hydrochloric Acid	20 KL	1 Nos.	Toxic
3	Nitric Acid	20 KL	1 Nos.	Toxic
4	Sodium Hydroxide	20 KL	1 Nos.	Toxic
5	Liq. Ammonia	15 KL	1 Nos.	Toxic
PESO – 5 Nos.				
6	IPA	20 KL	1 Nos	Flammable
7	Toluene	20 KL	1 Nos	Flammable
8	Cyclohexane	20 KL	1 Nos	Flammable
9	Ethyl acetate	20 KL	1 Nos	Flammable
10	Methanol	20 KL	1 Nos.	Flammable
Other-1 Nos.				
11	Carbon Disulphide	10 KL	1 Nos.	Toxic
<p><u>Storage of Hazardous chemicals in Tanks</u></p> <p><u>Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.</u></p>				
Type of Hazardous Chemicals	Safety measures			
PESO Tank	<p>Safety Measures for PESO Underground storage tank farm:</p> <ul style="list-style-type: none"> ✓ The underground vessels shall be placed within concrete or brick masonry pit with a gap of 1.0 meter between the walls of the pit and the vessel as well as in between the vessels. ✓ The underground vessels shall be installed on a firm foundation and firmly secured to the foundation so as to prevent movement of floatation. ✓ Class A Petroleum products will be received through road tanker and stored in u/g storage tank as per PESO Rule. ✓ Tank farm will be constructed as per explosive department requirement and separation distance will be maintained. ✓ The underground vessels covered by earth (Mound) shall be a designed to withstand external pressure due to load of the earth cover. <ul style="list-style-type: none"> ○ Provided with external anti-corrosive coating or cathodic protection to prevent corrosion; ○ Covered by earth, sand or any other non-corrosive material free from abrasive particles likely to damage the anti-corrosive coating of the vessel-the thickness of the covering material above the top surface of the vessel shall not be less than 0.5 meter; ○ Having the discharge level of the safety relief valves at least 2 meters above the top surface of the vessel, but in any case, not less than 3 meters from the ground level; ○ Fitted with the necessary piping's, fittings, valves and other mounting on top of vessel in such a manner that they can be 			

operated and maintained without disturbing the earth cover. In case of above ground vessel with earth cover (mound), liquid outlet pipe at the bottom may be allowed provided the control valve and emergency valve of this line is just outside the earth cover for the purpose of operation and maintenance from outside.

- ✓ Static earthing provision will be made for road tanker as well as storage tank.
- ✓ Flame arrestor with breather valve will be provided on vent line.
- ✓ Road tanker unloading procedure will be prepared and implemented.
- ✓ Fire load calculation will be done and as per fire load hydrant system will be provided as per NFPA std. and fire extinguishers will be provided as per fire load calculation.
- ✓ Spark arrestor will be provided to all vehicles in side premises
- ✓ Lightening arrestor will be provided on the top.
- ✓ Flame proof type equipment and lighting will be provided.
- ✓ Trained and experience operator will be employed for tank farm area.
- ✓ NFPA label (hazard identification) capacity and content will be displayed on tanks
- ✓ Solvents will be transferred by pump only in plant area and day tank will be provided. Overflow line will be return to the storage tank or Pump On-Off switch will be provided near day tank in plant.
- ✓ Jumpers will be provided on solvent handling pipe line flanges & Flexible SS hose will be used for road tanker unloading purpose and other temp. connection

PESO Area Storage & Handling Safety: (UNLOADING)

- ✓ Ensure that the transfer of petroleum takes place only through electrically continuous sound hose having oil tight couplings at both ends.
- ✓ Couplings of the hose at the discharge ends of the tank trucks as well as at the fill pipe end of the underground tank shall not be leaky.
- ✓ Unloading operations should not commence without ensuring earthing of the tanker body to a proper earthing point. For this purpose, a proper earthing point shall be provided near filling points.
- ✓ Before commencing unloading operations tanker should be parked in the retail outlet in such a manner that it can be taken out of the retail outlet immediately in case of emergency.
- ✓ Dip pipe of the underground tank shall not be kept open during unloading operations.
- ✓ The dealer, supervisors and pump attendants shall be trained in all aspects of safety in RO including the provisions of Petroleum Rules, 2002 in Chapter IV on Electric Installation, Rules 117 to 119,122,125 and conditions 6 to 12, 15,16,18 to 21of licence Form XIV for the RO's under the said Rules.
- ✓ Before starting unloading of petroleum, it must be ensured that at least a safe distance of 3 M is kept clear of any kind of movement of other vehicles that come for fuelling and that there is no source of any spark in the area. In case of retail outlets that are in congested areas

		<p>operations of fuelling automobiles in the retail outlet may be discontinued.</p> <ul style="list-style-type: none"> ✓ Do not use plastic hose pipes for unloading purposes. ✓ Do not use hose pipe fitted with metallic pipe (bent pipe) at the discharge end. ✓ Do not use Hose pipes not conforming to OISD 135. ✓ Proper tightening of hose connections using screwed/cam lock couplings. ✓ Make sure that there shall be no collection of leaked petroleum through hose pipe connection at tanker discharge faucet end in the plastic bucket kept on the ground below. ✓ Provision of electrical earthing / bonding by means of flexible cable between tanker chassis and earth boss/fill pipe. ✓ Proper training to the retail outlet staff regarding hazards associated with the petroleum road tanker decantation operation in the retail outlets. 	
	<p>Non PESO tank</p>	<p>Safety measures for Acid storage Tank:</p> <ul style="list-style-type: none"> ✓ Storage tank will be stored away from the process plant. ✓ Tanker unloading procedure will be prepared and implemented. ✓ Caution note and emergency handling procedure will be displayed at unloading area and trained all operators. ✓ NFPA label will be provided. ✓ Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory mask etc. will be provided to operator. ✓ Neutralizing agent will be kept ready for tackle any emergency spillage. ✓ Safety shower, eye wash with quenching unit will be provided in acid storage area. ✓ Material will be handled in close condition in pipe line. ✓ Dyke wall will be provided to all storage tanks, collection pit with valve provision. ✓ Double drain valve will provided. ✓ 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. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;">Safety Measures of Non PESO Tank</p> <ul style="list-style-type: none"> ✓ Leakage / spillage mitigation plan ✓ Tank shall be rubber lined to prevent the corrosion ✓ Dyke wall shall be provided for containment ✓ Rubber type hand gloves and chemical splash goggles and full-face cartridge type mask and PVC apron shall be used while manual handling ✓ Lime shall be readily available during leak to neutralize the spill material ✓ Safety shower, eye wash with quenching unit will be provided in acid </div>	

	<p>storage area.</p> <ul style="list-style-type: none"> ✓ Material will be handled in close condition in pipe line. ✓ Double drain valve will provided. ✓ Level gauge will be provided on all storage tanks. ✓ Fire hydrant system with jockey pump as per TAC norms will be installed
Drum Storage	<ul style="list-style-type: none"> ✓ Some chemicals will be received at plant in drums by road truck and stored in a separate drum storage area. ✓ FLP type light fittings will be provided. ✓ Proper ventilation will be provided in go down. ✓ Proper label and identification board /stickers will be provided in the storage area. ✓ Conductive drum pallets will be provided. ✓ Drum handling trolley / stackers/fork lift will be used for drum handling. Separate dispensing room with local exhaust and static earthing provision will be made. ✓ Materials will be stored as per its compatibility study and separate area will be made for flammable, corrosive and toxic chemical drums storage. ✓ Smoking and other spark, flame generating item will be banned from the Gate.
<u>Safety details of Hazardous Chemicals:</u>	
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. ➤ Store/groups of chemicals as per Incompatibility. ➤ Workers and Operators handling such materials will be trained for the hazards (fire/explosion, health, and chemical reactivity) associated with them. ➤ Lightening arrestor will be provided on the top of tallest structure. ➤ NFPA label (hazard identification) capacity and content will be displayed 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 ➤ MSDS of chemicals stored will be available in storage area ➤ Static earthing provision will be made for storage area. ➤ Fire load calculation will be done and as per fire load hydrant system

	<p>will be provided as per NFPA std. and fire extinguishers will be provided as per fire load calculation.</p> <ul style="list-style-type: none"> ➤ Flame proof type construction, equipment and lighting will be provided. ➤ Electrical wiring and equipment shall be installed in accordance with the National Electric Code (NEC). In areas where flammables are stored, electrical equipment and wiring shall be approved for Class I, Division 1, hazardous locations. ➤ Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory mask, SCABA, Airline Respiratory system, Fire suit etc. will be provided to operator. ➤ Smoking should never be allowed near flammable material storage areas. <p style="border: 1px solid black; padding: 2px;">Chemicals store in storage cabinet as per guidelines & Storage cabinets shall be labeled as "FLAMMABLE".</p>
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. <p style="border: 1px solid black; padding: 2px;">Chemicals store in storage cabinet as per guidelines & Storage cabinets shall be labeled as "CORROSIVE".</p>
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. ➤ Neutralizing agent will be kept ready for tackle any emergency spillage. ➤ Fire hydrant system with jockey pump as per TAC norms will be installed. <p style="border: 1px solid black; padding: 2px;">Chemicals store in storage cabinet as per guidelines & Storage cabinets shall be labeled as "TOXIC".</p>
REACTIVE	<ul style="list-style-type: none"> ➤ Store minimum quantities

<p>CHEMICALS</p>	<ul style="list-style-type: none"> ➤ 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) <p>Ensure adequate access for both normal and emergency purposes with alternative routes</p>
<p>➤ Applicability of PESO: Yes. Unit will obtain PESO License for storage of chemicals.</p>	
<p style="text-align: center;"><u>Comments:</u></p> <p>➤ Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The Petroleum and Explosives Safety Organization (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.</p>	
<p>H-2</p>	<p>Types of hazardous Processes involved and its safety measures:</p>
<p>Type of Process</p>	<p>Safety measures including Automation- Provision of integrated DCS shall be made</p>
<p>Hydrogenati</p>	<p>1. Provisions of safety valve & rupture disk on reactor.</p>

<p>on process</p>	<ol style="list-style-type: none"> 2. Provisions of auto dumping Vessel. 3. DCS base process controls and operation of plant will be installed. 4. All electrical equipment's shall be installed as per Hazardous Area Classification. 5. Total enclosed process system. 6. Instrument & Plant Air System. 7. Nitrogen blanketing in Hydrogenation reactor. 8. Cooling, Chilling and alternate power arrangement have been made on reactor. 9. Process area and Hydrogen cylinder bank shall be far away as per standards practice. 10. PRV station with shut off valve, safety valve provision will be made for hydrogenation reaction safety. 11. 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. 12. Flame arrestor will be provided on vent line of reactor and it will be extended above the roof level. 13. Safe Catalyst charging method will be adopted. 14. SOP will be prepared and operators will be trained for the same. 15. Static earthing and electric earthing (Double) will be provided. 16. Jumpers for static earthing on pipeline flanges of flammable chemical will be provided. 17. Hydrogen gas detector will be installed for early detection of gas leak.
<p>Nitration</p>	<ul style="list-style-type: none"> ➤ SOP will be displayed for safe charging of Nitric acid for nitration process ➤ Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory mask etc. will be provided to operator at time of nitric acid charging. ➤ Make sure the absorber unit (two stage Alkali scrubber) will be working and capable of handling vented NO₂ fumes. ➤ Neutralizing agent will be kept ready for tackle any emergency spillage. ➤ Safety Shower and eye wash will be provided near process area. ➤ Total close process will be adopted (from storage tank to measured vessel & then to reactor) for Nitric Acid charging. ➤ Caution note and emergency first aid will be displayed for the same to all employees. ➤ First Aid Boxes will be available in process area. ➤ Prevention measures for runaway reaction of nitration reaction. ➤ Instrumentation control –Interlock, Rotameter, DCS, Level alarms ➤ TIC –Temp Indicator Controller- of jacketed reactor (Gradually Charging material to maintain rate of rise of temperature, - Temperature sensor – Chilling Plant, Temp Range of Reaction: 25 to 30-degree centigrade Pressure: Atmospheric) ➤ Emergency control measures: ➤ Provision of Dumping vessel of the contents of the nitrator underneath reactor; the contents will be neutralized (by Alkali) in catch point. It will be sent to CF (Co-Processing/CHWIF/TSDf).
<p>Bromination</p>	<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

		<p>and POP coated funnel will be used during charging.</p> <ul style="list-style-type: none"> ➤ Excess bromine will be neutralized or discharged by adding Sodium Bisulfite & Sodium Thiosulphate. ➤ 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. 	
	<p>Sulphonation & Chlorination (Only Through Thionyl Chloride)</p>	<ul style="list-style-type: none"> ➤ Provision of Safety valve & rupture disc on reactor. ➤ Provision of auto dumping vessel. ➤ Required PPEs like full body protection PVC apron, Hand gloves, gumboot, Respiratory mask etc. will be provided to operator. ➤ To avoid runaway reaction, TC charging will be done gradually & slowly to avoid runaway reaction, TC charging will be done gradually & slowly. ➤ Charging will be done only through closed line and system. Scrubber attached with closed system. ➤ Make sure the absorber unit (two stage Alkali scrubber) is working and capable of handling vented SO₂ / HCl fumes. ➤ Neutralizing agent will be kept ready for tackle any emergency spillage. ➤ Safety Shower and eye wash will be provided near process area. ➤ For Thionyl Chloride evacuate area in down wind direction up to 0.3 km (300 meter) in small spillage. ➤ Emergency siren and wind sock will be provided. ➤ Tele Communication system and mobile phone will be used in case of emergency situations for communication. ➤ Total close process will be adopted for Thionyl chloride charging. ➤ Caution note and emergency first aid will be displayed and train for the same to all employees. ➤ First Aid Boxes will be available in process area. ➤ Emergency organization and team will be prepared as per On site-Off site emergency planning. ➤ Emergency team will be prepared and trained for scenario base 	

	<p>emergency. Like Toxic control team, Fire control team, First aid team, communication and general administration team, Medical team etc.</p> <ul style="list-style-type: none"> ➤ Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. ➤ Use water spray to reduce vapors; do not put water directly on leak, spill area or inside container. Keep combustibles (wood, paper, oil, etc.) away from spilled material. ➤ Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
<p>Chlorination Process safety measures: (Chlorine Gas)</p>	<ul style="list-style-type: none"> ➤ Chlorine Emergency Kit will be procured and kept ready at process site. ➤ Chlorine Hood with blower will be provided with scrubbing arrangement. ➤ SCBA sets will be kept ready at site. ➤ Safety Shower and eye wash will be provided in process area. ➤ Chlorine absorption system will be provided. In case of chlorine leakage in chlorine shed it will be suck through blower and it will be scrubbed in Caustic scrubber. ➤ Emergency siren and wind sock will be provided. ➤ Tele Communication system and mobile phone will be used in case of emergency situations for communication. ➤ First Aid Boxes and Occupational health centre will be made at site. ➤ Emergency organization and team will be prepared as per On site-Off site emergency planning. ➤ Full body protection suite and other PPEs will be kept ready at site. ➤ Emergency team will be prepared and trained for scenario base emergency. Like Toxic control team, Fire control team, First aid team, Communication and general administration team, Medical team etc. <div style="border: 1px solid black; padding: 5px;"> <p>Evacuate the area in down wind direction</p> <ul style="list-style-type: none"> ✓ 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. </div>
<p>H-3</p>	<p align="center">Details of Fire Load Calculation</p>
<p>Total Plot Area:</p>	<p align="right">17491.02 Sq. m.</p>
<p>Area utilized for plant activity:</p>	<p align="right">900 Sq. m. (G+2) (3 Nos.)</p>

Area utilized for Hazardous Chemicals Storage:	750.00 Sq. m.
Number of Floors:	G+2
Water requirement for firefighting in KLD:	144970 Liter
Water storage tank provided for firefighting in KLD:	5,00,000 Liter
Details of Hydrant Pumps:	Fire water Pump will be available. We will have 01 No's of electrical fire water Pump located at pump house having capacity 4550.0 litres/min and 01 No's of Diesel pump having capacity 4550.0 litres/min. Apart from this we have 01 Nos Jockey Pumps of capacity 1080.0 litres/min which maintains the Fire water Header Pressure at 8.0 kg/cm ² .
Nearest Fire Station :	Fire Station (SEZ Fire station, Dahej)
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 500 KL SEAC found it as per the requirement. 	
-	
H-4	Details of Fire NOC/Certificate:
Unit will obtain Fire NOC after receipt of EC and before getting CTO.	
H-5	Details of Occupational Health Centre (OHC):
-	
Number of permanent Employee:	25
Number of Contractual person/Labour:	30
Area provided for OHC:	24 m ²
Number of First Aid Boxes:	25 Nos.
Nearest General Hospital:	Ril Hospital, Vadadla
Name of Antidotes to be store in plant:	Artificial respiration, First Aid Box, Oxygen, Ethanol, Novasine Eye Drops etc.
-	
Comments	
<ul style="list-style-type: none"> ➤ Project proponent has provided Occupational health center with adequate 	

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

Details of Environmental Management Plan (EMP)

As below:

Sr. No	Unit	Detail	Capital Cost (Rs. In Lakhs)	Operating Cost (Rs. In Lakhs)	Maintenance Cost (Rs. In Lakhs)	Total Recurring Cost (Rs. In Lakhs)
1	Waste Water	ETP-1 (Primary) & ETP-2 (Primary, secondary) + Stripper + MEE	298.50	110.00	11.10	121.10
		Membership	1.00	31.50	--	31.50
		(CETP + CMEE)				
2	Air	7 No. Scrubber, 4 No. MCS, 4 Nos. Bag Filter	34.10	0.86	0.43	1.29
3	Hazardous Management	Membership & Disposal + Incineration	1.00	9.20	--	9.20
		Transportation	--	0.08	--	0.08
4	Fire & Safety	Fire Hydrant & pipeline System	35.10	0.40	0.20	0.60
		Safety equipment/PPES	6.50	0.06	0.03	0.09
		Fire Extinguisher & Foam Trolley	4.50	0.03	0.02	0.05
		Integrated DCS	20.00	1.00	0.02	1.02
		Foam Flooding System	12.00	0.40	0.20	0.60
		Trailer Driven pump (6000 LPM)	6.50	0.05	0.02	0.07
5	AWH Monitoring	Electrical Fitting Flameproof	13.50	0.25	0.05	0.30
		In House Monitoring	2.00	0.10	--	0.10
6	Green Belt Development	Trees	8.25	0.83	0.41	1.24
7	Occupational Health	OHC, Training & Medical Check-up	2.00	0.20	0.10	0.30
8	Noise Control	Acoustic enclosure & Silencer & Vibration pads & Noise PPEs	5.00	0.03	0.02	0.05
9	CER Funds	2% as per OM dated 01/05/2018	50.00	0.25	0.17	0.42
Total			499.95 ~500.0			168.00

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. Project Proponent (PP) shall strictly abide by the outcome/decision of Hon'ble Supreme Court of India in Civil Appeal no. 8478/2020 regarding operation of the Hon'ble NGT orders dated 10/07/2019 & 14/11/2019.
2. PP shall comply conditions of any subsequent amendment or expansion or change in product mix, after the 31st December 2021, considered as per the provisions in force at that time as mentioned in the Notification vide S.O. 1223 (E) dated 27/03/2020.
3. PP shall carry out proposed project/activities in respect of Active Pharmaceutical Ingredients (API) as per the amended EIA Notification vide S.O. 1223 (E) dated 27/03/2020 and subsequent amendments.
4. PP shall submit six monthly compliance report of Environmental Clearance without fail and the same shall be critically assessed by the regulatory authority.
5. (a) R & D products shall be of similar chemistry in line with the EIA Notification vide S.O. 1223 (E) dated 27/03/2020 and the pollution load shall remain the same as committed. (b) Project proponent shall not take continuous/commercial production of the R & D materials. Necessary approvals shall be obtained from the concern authorities prior to commercial production of R & D materials. (c) Unit shall submit relevant details of R & D products like raw materials, its safety measures to the regulatory authority well before R & D activity. (d) Unit shall submit relevant details of R & D products like different wastes generated (Quantity & Quality) and its management to the regulatory authority within a month of R & D activity.
6. Unit shall install CEMS [**Continuous Emission Monitoring System**] in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. [**For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable**].
7. Close loop solvent recovery system with adequate condenser system shall be provided to recover solvent vapours in such a manner that recovery shall be maximum and recovered solvent shall be

reused in the process within premises.

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

9. Safety & Health:

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

- n) Unit shall provide chlorine leakage control emergency kit and FRP hood with scrubber system for chlorine safety.
- o) Unit shall provide safety valve and rupture disc, as well as auto dump or auto quench/suppress system for nitration vessel safety.
- p) Unit shall provide safety valve and rupture 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 229.5 KLD. Unit shall reuse 77.0 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 152.5 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 165.5 KLD.

12. Management of Industrial effluent shall be as under:

High Concentration:

- Process High Concentration Effluent 20.0 KLD shall be treated in Stripper (to bring down for achieving inlet norms of CMEE) & output of stripper is subjected to Primary ETP and then 19.7~20.0 KLD send to Common Evaporation facility.

Low Concentration Effluent:

- 116.4 KLD from Process shall be treated into in-house Stripper &MEE. 105 KLD MEE-Condensate out of which 48 KLD MEE-Condensate will be reused within premises in cooling and scrubbing Section.
- Remaining 57 KLD effluent from MEE-Condensate will combine with 1.5 KLD effluent from Boiler, 3.0 KLD effluent from Cooling, 3.0 KLD effluent from Washing, 3.0 KLD effluent from Scrubbing and 2.0 KLD Domestic Wastewater i.e. total 69.5 KLD will be treated into Primary & Secondary ETP.
- 69.1 KLD will be sent to CETP, Dahej after achieving norms prescribed by GPCB to ensure no adverse impact on Human Health and Environment. (0.4 KLD Sludge will be sent to TSDF after drying in SDB)
- Scrubbing Solution 9.0 KLD will be sent to end users registered under Rule-9, 7.0 KLD will be reused within Premises and 1 KLD will be used as Dosing media in ETP.
- Unit shall send waste water to Common MEE only after achieving inlet norms prescribed by

GPCB ensuring content of effluent for COD so as not to get air borne during spray drying after APCM in order to achieve no adverse impacts on Environment and Human Health.

13. Domestic wastewater generation shall not exceed 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.
14. Unit shall provide ETP with adequate capacity.
15. The PP shall ensure to dispose off Waste water to the Common Facilities having valid CTO of GPCB.
16. The unit shall provide metering facility at the inlet and outlet of ETP, Stripper& MEE and maintain records for the same.
17. Proper logbooks of ETP, Stripper, MEE; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

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

or providing enclosures.

24. Solvent management shall be carried out as follows:

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

25. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, HCl, Cl₂, H₂S, NH₃, HBr and VOCs shall be carried out in the impact zone and its records shall be maintained. Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately. The location of the stations and frequency of monitoring shall be decided in consultation with the GPCB.

HAZARDOUS / SOLID WASTES:

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

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

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

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

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

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

GREENBELT AREA

32. The PP shall develop green belt [5772.02 Sq. m. (Within Plant Premises)] 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:

33. The project proponent shall carry out the entire activities[Solar panel & Solar Street light, Rain water recharge, Common Drinking water facility, Solid Waste Management & Tree plantation]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

02	SIA/GJ/IND3/247524/2021	M/s. Apex Healthcare Ltd.Unit-2 Plot no. 11009, GIDC Estate, Ankleshwar, Dist.: -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/IND3/247524/2021
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:	389 th meeting dated 28.03.2022
1.9. Compliance of Existing EC & CCA	Not Applicable (if New)

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

Product Table

Sr. No.	Name of Products	Quantity (MT/Month)
1.	API & Intermediates	125
2.	R & D	0.1

Sr. No.	Name of the Products	CAS no.	Quantity MT/Month	*End-use of products
Group A: API products				
1	Bisoprolol fumarate	66722-44-9	40.0 TPM [Sr. No. 1 to 7]	It is used to treat high blood pressure (hypertension) and heart failure.

2	Lisinopril	83915-83-7		It is used to treat high blood pressure and heart failure.
3	Perindopril	107133-36-8		It is used to treat high blood pressure and heart failure.
4	Betahistidine	5638-76-6		It is used to treat symptoms of Meniere's syndrome such as dizziness, ringing in the ears, loss of hearing and nausea.
5	Ibuprofen	15687-27-1		It is used to relieve pain from various conditions such as headache, dental pain, menstrual cramps, muscle aches, or arthritis.
6	Aspirin	50-78-2		It is used to reduce fever and relieve mild to moderate pain.
7	Diclofenac Sodium	15307-86-5		It is used to reduces swelling and pain
8	Tranexamic Acid	1197-18-8		15.0 TPM [Sr. No. 8 to 24]
9	Dolutegravir	1051375-16-6	It is used with other HIV medications to help control	
10	Acyclovir	59277-89-3	It is used to decrease pain and speed the healing of sores.	
11	Valacyclovir	124832-27-5	It is used to treat herpes zoster and genital herpes.	
12	Tenofovir	147127-20-6	It is used to treat HIV. Also It is used to treat chronic hepatitis B.	
13	Efavirenz	154598-52-4	It is used along with other medications to treat HIV.	
14	Levetiracetam	102767-28-2	It is used to treat seizures (epilepsy).	
15	Lamivudine	134678-17-4	It is used to treat hepatitis B infection.	
16	Guifenesin	93-14-1	It is used to treat coughs and congestion caused by the common cold, bronchitis, and other breathing illnesses.	
17	Gabapentin	60142-96-3	It is used to treat epilepsy. It's also taken for nerve pain.	
18	Chlorpheniramine Maleate	113-92-8	It is used reduces the effects of natural chemical histamine in the body.	
19	Metronidazole	443-48-1	It is used to treat skin infections, rosacea and mouth infections.	
20	Naproxen sodium	26159-34-2	It is used to relieve pain from various conditions such as headache, muscle aches, tendonitis, dental pain, and menstrual cramps.	
21	4-Aminosalicylic acid	65-49-6	It is used to treat tuberculosis.	
22	Ibuprofen Sodium	31121-93-4	It is used for treating pain, fever, and inflammation.	

23	Lidocaine hydrochloride	6108-05-0		It is used to prevent and relieve pain during certain medical procedures.
24	Phenyramidol hydrochloride	326-43-2		It is used for muscle relaxation. It relieves painful spasms of the skeletal muscles.
25	Ibuprofen Lysinate	57469-77-9		It is used to relieve rheumatic or muscular pain, backache, neuralgia, migraine, headache, dental pain, period pain, fever and the symptoms of colds and flu.
26	Mesalmine/Mesalazine	89-57-6		It is used to treat ulcerative colitis and also to maintain improvement of ulcerative colitis symptoms.
27	Aceclofenac	89796-99-6		It is used to relieve pain and inflammation in conditions such as rheumatoid arthritis, ankylosing spondylitis, and osteoarthritis.
28	Albendazole	54965-21-8		Albendazole is an anthelmintic or anti-worm medication.
29	Ambroxol hydrochloride	23828-92-4		It is used in the treatment of respiratory tract disorders associated with viscid mucus.
30	Trazodone	19794-93-5		An antidepressant medicine that works to balance chemicals in the brain.
31	Pregabalin	148553-50-8	10.0 TPM [Sr. No. 25 to 37]	It is used to treat pain caused by fibromyalgia, or nerve pain in people with diabetes, herpes zoster, or spinal cord injury.
32	Omeprazole	73590-58-6		It is used to treat symptoms of gastroesophageal reflux disease and other conditions caused by excess stomach acid.
33	Esomeprazole	119141-88-7		It is used to treat symptoms of gastroesophageal reflux disease and other conditions involving excessive stomach acid
34	Pantoprazole sodium	138786-67-1		It is used to treat certain stomach and esophagus problems. It works by decreasing the amount of acid your stomach makes.
35	Rabeprazole	117976-90-6		It is used reduces the amount of acid your stomach makes. It's used for heartburn, acid reflux and gastro-oesophageal reflux disease
36	Lansoprazole	103577-45-3		It is used reduces the amount of acid your stomach makes. Also taken to prevent and treat stomach ulcers.
37	Fluconazole	86386-73-4		It is used to treat serious fungal or

				yeast infections.
38	Dexibuprofen	51146-56-6		It is used treat painful conditions such as arthritis, sprains and strains, period pain, and dental pain.
39	Telmisartan	144701-48-4		It is used alone or in combination with other medications to treat high blood pressure.
40	Losartan	114798-26-4		It is used to treat high blood pressure and heart failure, and to protect your kidneys.
41	Valsartan	137862-53-4		It is used to treat high blood pressure and heart failure.
42	Olmisartan	144689-63-4		It is used to treat high blood pressure.
43	Candesartan cilexetil	145040-37-5		It is used to treat high blood pressure (hypertension).
44	Irbesartan	138402-11-6		It is used to treat high blood pressure. Prevent future strokes, heart attacks and kidney problems.
45	Mebeverin hydrochloride	2753-45-9		It helps with muscle spasms. It can be It is used to ease painful stomach cramps
46	Verapamil hydrochloride	152-11-4		It is used to treat high blood pressure and to control angina.
47	Drotaverin hydrochloride	985-12-6	5.0 TPM [Sr. No. 38 to 83]	It is used for menstrual pain and abdominal pain.
48	Ramipril	87333-19-5		It is used to treat high blood pressure and heart failure.
49	Atorvastatin calcium	134523-03-8		It is used along with a proper diet to help lower "bad" cholesterol and fats and raise "good" cholesterol in the blood.
50	Rosuvastatin calcium	147098-20-2		It is used along with a proper diet to help lower "bad" cholesterol and fats and raise "good" cholesterol in the blood.
51	Venlafaxin hydrochloride	99300-78-4		It is used to treat depression, anxiety, panic attacks, and social anxiety disorder.
52	Phenylephrin hydrochloride	61-76-7		It is used to relieve nasal discomfort caused by colds, allergies, and hay fever.
53	Lamotrigine	84057-84-1		It is used to treat epilepsy. It can also help prevent depression in adults with bipolar disorder.
54	Labetalol hydrochloride	32780-64-6		It is used to treat high blood pressure, including high blood pressure in pregnancy
55	Cetirizine hydrochloride	83881-52-1		It is used to temporarily relieve the symptoms of hay fever.
56	Levocetirizine hydrochloride	130018-77-8		It is used to relieve runny nose; sneezing; and redness, itching,

			and tearing of the eyes.
57	Vitamin D3	67-97-0	Vitamin D is It is used to treat and prevent bone disorders.
58	Terbinafine hydrochloride	78628-80-5	It is used to treat a variety of fungal skin infections such as ringworm, athlete's foot, and jock itch.
59	Minoxidil	38304-91-5	It is used to stimulate hair growth and to slow balding.
60	Sertaline hydrochloride	79559-97-0	It is used to treat depression, obsessive compulsive disorder panic attacks, posttraumatic stress disorder and social anxiety disorder.
61	Sugammadex sodium	-79-343306 6	Used for reversal of neuromuscular blockade induced by rocuronium and vecuronium.
62	Apixaban	503612-47- 3	An anticoagulant medication It is used to treat and prevent blood clots.
63	Tofacitinib	477600-75- 2	It is used to treat certain types of arthritis. It helps to decrease pain/tenderness/swelling in the joints.
64	Teneligliptin HBr	1572583- 29-9	dipeptidyl peptidase-4 inhibitors; treatment of type 2 diabetes mellitus
65	Lidocaine base	137-58-6	It is used to for pain control during minor surgery or invasive procedures such as biopsies, small excisions or dental work.
66	Benzocaine	94-09-7	It is used to reduce pain or discomfort caused by minor skin irritations, sore throat, sunburn, vaginal or rectal irritation.
67	Procaine	59-46-1	It is used dementia, depression, hair loss, high blood pressure, and sexual performance problems.
68	Articaine	23964-57-0	Local anaesthetic drugs, articaine causes a transient and completely reversible state of anaesthesia
69	Prilocaine hydrochloride	1786-81-8	Intermediate-acting local anaesthetic of the amide type chemically related to lidocaine.
70	Prilocaine base	721-50-6	local anaesthetics, lidocaine and prilocaine. It is used on normal, unbroken skin.
71	Bupivacaine hydrochloride	18010-40-7	Used as a local anaesthetic. an epidural injection into the spinal column to produce numbness during labour, surgery, or certain medical procedures.
72	Ropivacaine	132112-35-	Local anaesthesia for a spinal

	hydrochloride	7		block, also called an epidural. It is used to provide anaesthesia during a surgery or C-section, or to ease labour pains
73	Tetracaine hydrochloride	136-47-0		It is used to numb the eye before surgery, certain tests, or procedures.
74	Cinchocaine hydrochloride	61-12-1		Local anaesthetic. Together to reduce swelling, numb pain and relieve itching.
75	Meloxicam	71125-38-7		It is used to relieve pain, tenderness, swelling, and stiffness.
76	Piroxicam	4-90-36322		It is used to relieve pain, tenderness, swelling, and stiffness.
77	Lornoxicam	70374-39-9		Used for pain relief. It relieves pain non-steroidal anti-inflammatory drug
78	Piroxicam Betacyclodextrin	96684-39-8		A non-steroidal anti-inflammatory drug which works by blocking the release of certain chemical messengers that cause pain and inflammation
79	Sodium Picosulphate	1307301-38-7		It is used to clean out the intestines before surgery or certain procedures.
80	Bisacodyl	603-50-9		Bisacodyl is a laxative. help you empty your bowels if you have constipation
81	Alendronate Sodium	121268-17-5		It is used to treat a certain type of bone disease called Paget's disease.
82	Montelukast Sodium	151767-02-1		It is used to prevent wheezing, difficulty breathing, chest tightness
83	Desloratidine	100643-44-9		Used in to relieve high fever and allergy symptoms.
84	Fusidic Acid	6990.06-3	5.0 TPM [Sr. No. 84 to 88]	An antibiotic. It's It is used to treat bacterial infections, such as skin infections including cellulitis and impetigo, and eye infections including conjunctivitis
85	Vancomycine	1404-90-6		It is used to treat serious <u>bacterial infections</u> . It is an antibiotic that works by stopping the growth of bacteria.
86	Mupirocine	12650-69-0		An antibiotic that prevents bacteria from growing on your skin.
87	Seratiopaptidase	70851-98-8		For fibrinolytic, anti-edemic, and anti-inflammatory activity.
88	Mycophenolate	24280-93-1		Inhibitor of nucleic acid synthesis; immunomodulator.

Group-B: Intermediate Products				
89	Isobutyl acetophenone	38861-78-8	20.0 TPM [Sr. No. 89 to 97]	It is used to relieve pain from various conditions such as headache, dental pain, menstrual cramps, muscle aches, or arthritis.
90	1-(2,6-Dichlorophenyl)-2-indolinone	15307-86-05		Diclofenac is a medicine that reduces swelling and pain
91	Try amino pyrimidine sulphate	35011-47-3		Used as an additive to various products where it provides a pearly iridescent effect. Used in metallic paints and simulated pearls and plastics.
92	Guanine	73-40-5		It is used to treat herpes zoster and genital herpes.
93	Adenine	73-24-5		An antiviral medicine that is used to treat HIV. Also, It is used to treat chronic hepatitis B.
94	(2S)-2-aminobutanamide Hydrochloride	7682-20-4		It is used to treat seizures (epilepsy).
95	1,1-Cyclohexane diacetic acid monoamide	99189-60-3		It is used to treat epilepsy. It's also taken for nerve pain.
96	3,4-Dimethoxybenzoic acid(Veratric Acid)	93-07-2		It helps with muscle spasms. It can be used to ease painful stomach cramps
97	Para Amino Benzoic Acid	150-13-0	Used to reduce pain or discomfort caused by minor skin irritations, sore throat, sunburn, vaginal or rectal irritation.	
98	1-(2,2-Dimethoxyethyl)-1,4-dihydro-3-methoxy-4-oxo-2,5-pyridinedi carboxylic acid 2-methyl ester	1335210-23-5	15.0 TPM [Sr. No. 98 to 106]	Used with other HIV medications to help control
99	(S)-1-(2-Amino-5-chlorophenyl)-1-(trifluoromethyl)-3-cyclopropyl-2-propyn-1-ol	209414-27-7		Used along with other medications to treat human immunodeficiency virus infection.
100	(S)-5-Chloro-alpha-(cyclopropylacetenyl)-2-(((4-methoxyphenyl)methyl)amino)-alpha-(trifluoromethyl)benzene methanol	173676-60-3		Used along with other medications to treat human immunodeficiency virus infection.
101	(1R,2S,5R)-Menthyl-(2R,5S)-5-(4-amino-2-oxo-2H-pyrimidin-1-yl)-[1,3]oxathiolane-2-carboxylic acid	147027-10-9		It is used to treat hepatitis B infection.
102	2-Amino-3,5-dibromobenzaldehyde	50910-55-9		Treatment of respiratory tract disorders associated with viscid

				mucus
103	Trans-4-Aminocyclohexanol	27489-62-9		Treatment of respiratory tract disorders associated with viscid mucus
104	(3,4-Dimethoxyphenyl) acetonitrile	38861-78-8		It is used to treat high blood pressure and to control angina
105	Denatonium Benzoate	15307-86-05		Aversive agents to discourage the inhalation or ingestion of toxic substances
106	4-(Aminomethyl) Benzoic Acid	56-91-7		It is used to treat high blood pressure.
107	1-(3-Chlorophenyl)-4-(3-chloropropyl) piperazine hydrochloride	52605-52-4		It is used to treat high blood pressure.
108	(R)-(-)-3-(2-Amino-2-oxoethyl)-5-methyl hexanoic acid	181289-33-8		It is used to treat high blood pressure (hypertension).
109	2-Chloro methyl-4-methoxy-3,5-dimethylpyridine hydrochloride	86604-75-3		It is used to treat high blood pressure (hypertension).
110	5-Methoxy-2-Mercapto Benzimidazole	37052-78-1		It is used to treat high blood pressure and heart failure.
111	5-Difluoromethoxy-2-Mercapto Benzimidazole	97963-62-7		It is used to treat high blood pressure. prevent future strokes, heart attacks and kidney problems.
112	5-Difluoromethoxy-2-[[[3,4-dimethoxy-2-pyridinyl) methyl]thio]-1H-benzimidazole	102625-64-9		Used along with a proper diet to help lower "bad" cholesterol and fats and raise "good" cholesterol in the blood.
113	2-Chloromethyl 3,4-Dimethoxy Pyridine HCl	72830-09-2	10.0 TPM [Sr. No. 107 to 144]	Used along with a proper diet to help lower "bad" cholesterol and fats and raise "good" cholesterol in the blood.
114	2-Mercapto Benzimidazole	583-39-1		It is used to lower cholesterol.
115	2-Chloromethoxy-4-(3-Methoxy Propoxy)-3-Methyl Pyridine	153259-31-5		It is used to lower cholesterol.
116	2-[[[4-(3-Methoxy Propoxy)-3-Methyl Pyridine-2-yl] Methyl] Thio]-1H-Benzimidazole	117977-21-6		It is used to treat depression, anxiety, panic attacks, and social anxiety disorder.
117	[1,1'-Biphenyl]-2-carbonitrile,4'-[(1,4'-dimethyl -2'-propyl [2,6"-bi-1H-benzimidazole] - 1'-yl) methyl] – (1,1-biphenyl)-2-carbonitrile	144702-27-2		It is used to treat depression, anxiety, panic attacks, and social anxiety disorder.
118	Methyl 4'-bromomethyl biphenyl-2-carboxylate	114772-38-2		It is used to treat epilepsy. It can also help prevent depression in adults with bipolar disorder.
119	2-n-propyl-4-methyl-6-	152628-02-		It is used to treat high blood

	(1-methylbenzimidazole-2-yl) benzimidazole	9		pressure, including high blood pressure in pregnancy.
120	2n-Butyl-4-chloro-[1-(2'-cyanobiphenyl-4-yl)methyl]-5-(hydroxymethyl)-imidazole	114772-55-3		An antihistamine that reduces the effects of natural chemical histamine in the body.
121	5-(4'-Bromomethyl-1, 1'-biphenyl-2-yl)-1-triphenylmethyl-1H-tetrazole (TTBB)	124750-51-2		It is used to relieve pain, tenderness, swelling, and stiffness.
122	2-Butyl 4-Chloro 5-Formyl Imidazole (BCFI)	83857-96-9		It is used to relieve pain, tenderness, swelling, and stiffness.
123	4-(1-Hydroxy-1-methylethyl)-2-propyl-1-[[2'-[(triphenylmethyl)-1H-tetrazol-5-yl][1,1'-biphenyl]-4-yl]methyl]-1H-imidazole-5-carboxylic acid ethyl ester)	144690-33-5		It is used to relieve pain, tenderness, swelling, and stiffness.
124	5-Methoxy – 2-oxo-1,3-dioxol - 4 - yl) methyl - 4 - (1-hydroxy -1 - methylethyl -2 propyl-1-(2 –(2-triphenylmethyl) - 2H – tetrazole -5 – yl) biphenyl -4-yl) methyl) -1H-imidazole – 5 – carboxylate	144690-92-6		It is used to prevent and relieve pain during certain medical procedures.
125	Methyl 1-[(2'-cyanobiphenyl-4-yl)methyl]-2-ethoxy-1H-benzimidazole-7-carboxylate	139481-44-0		It is used to prevent wheezing, difficulty breathing, chest tightness
126	Ethyl 2-ethoxy-1-[(2'-cyanobiphenyl-4-yl)methyl]-1H-benzimidazole-7-carboxylate	139481-41-7		It is used to prevent wheezing, difficulty breathing, chest tightness
127	N-[(2'-Cyanobiphenyl-4-methyl)-(L)-Valine methyl ester Hydrochloride	482577-59-3		Aaversive agents to discourage the inhalation or ingestion of toxic substances
128	4'-[(2-Butyl-4-oxo-1,3-diazaspiro [4.4]non-1-en-3-yl)methyl]biphenyl-2-carbonitrile	<u>138401-24-8</u>		It is an anticoagulant medication It is used to treat and prevent blood clots.
129	tert-Butyl (4R,6R)-2-[[[6-(2-4-fluorophenyl)-5-isopropyl-3-phenyl-4-(phenylcarbonyl)pyrrol-1-yl] ethyl]-2,2-dimethyl-1,3-dioxan-4-yl]	125971-95-1		It is an anticoagulant medication It is used to treat and prevent blood clots.

	acetate			
130	(4R,6R)-tert-Butyl-6-(2-aminoethyl)-2,2-dimethyl-1,3-dioxane-4-acetate	125995-13-3		Tofacitinib, also known as Xeljanz, is a type of drug known as a Janus kinase (JAK) inhibitor. It works by blocking the action of Janus kinase enzymes
131	Methyl 4-(4-fluorophenyl)-6-isopropyl-2-[(N-methyl-N-methyl sulfonyl) amino]pyrimidine-5-carboxylate	289042-11-1		Tofacitinib, also known as Xeljanz, is a type of drug known as a Janus kinase (JAK) inhibitor. It works by blocking the action of Janus kinase enzymes
132	tert-Butyl 6-[(1E)-2-[4-(4-fluorophenyl)-6-(1-methylethyl)-2-[methyl(methylsulfonyl) amino]-5-pyrimidinyl] ethenyl]-2,2-dimethyl-1,3-dioxane-4-acetate	289042-12-2		It is used to treat dipeptidyl peptidase-4 inhibitors; treatment of type 2 diabetes mellitus.
133	1-[Cyano-(p-methoxyphenyl)methyl]cyclohexanol	93413-76-4		It is used to treat dipeptidyl peptidase-4 inhibitors; treatment of type 2 diabetes mellitus
134	1-[2-Amino-1-(4-methoxyphenyl)ethyl]cyclohexanol	149289-31-6		It is used to relieve pain, tenderness, swelling, and stiffness.
135	2,3-Dichlorobenzoyl cyanide	77668-42-9		It is used to relieve pain from various conditions such as headache, dental pain, menstrual cramps, muscle aches, or arthritis.
136	5-Chloroacetyl salicylamide	33254-88-5		It is used reduces swelling and pain
137	1-(4-Chlorobenzhydryl) piperazine	303-26-4		It is used as an additive to various products where it provides a pearly iridescent effect. used in metallic paints and simulated pearls and plastics.
138	2-Amino, 5-methyl thiazole	7305-71-7		It is used to treat herpes zoster and genital herpes.
139	4-Hydroxy, 2-methyl, 2h,1,2-benzothiazine carboxylic acid isopropyl ester-1,1-dioxide	118854-48-1		It is used to treat HIV. Tenofovir is also It is used to treat chronic hepatitis B.
140	4-Hydroxy, 2-methyl, 2h,1,2-benzothiazine carboxylic acid methyl ester-1,1-dioxide	35511-15-0		It is used to treat seizures (epilepsy).
141	Chloro acetyl Xylidine	1131-01-7		It is used to treat epilepsy. It's also taken for nerve pain.
142	2-(2-(3-(S) -(3-(2-(7-Chloro-2-quinolinyl)-ethenyl) phenyl-3-methanesulphonyloxypropyl) pehenyl)-2-	142569-70-8		It helps with muscle spasms. It can be It is used to ease painful stomach cramps

	propanol			
143	1-(Mercaptomethyl)-cyclopropane acetic acid	162515-68-6		It is used to reduce pain or discomfort caused by minor skin irritations, sore throat, sunburn, vaginal or rectal irritation.
144	Denatonium Saccharate	90823-38-4		It is used with other HIV medications to help control
145	3-Morpholino-1-(4-(2-oxopiperidin-1-yl)5,6-dihydropyridin-2(1h)-one	545445-44-1	5.0 TPM [Sr. No. 145 to 153]	Used along with other medications to treat human immunodeficiency virus infection.
146	z-Ethyl-2-chloro-2-(2-(4-methoxyphenyl)hydrazono) acetate	27143-07-3		Used along with other medications to treat human immunodeficiency virus infection.
147	4-Chloro-7-tosyl-7h-pyrrolo[2,3-d] pyrimidine	479633-63-1		It is used to treat hepatitis B infection.
148	Bis (3R, 4R) - (1- benzyl - 4 methyl - piperidine - 3yl) methylamine di - toluoyl - L - tartaric acid	477600-70-7		It is used for treatment of respiratory tract disorders associated with viscid mucus
149	[(2S)-1-tert-butoxycarbonyl-4-oxo-2-pyrrolidinylcarbonyl]-1,3-thiazolidine	401564-36-1		It is used for treatment of respiratory tract disorders associated with viscid mucus
150	1-(3-methyl-1-phenyl-5-pyrazolyl)- piperazine)	401566-79-8		It is used to treat high blood pressure and to control angina
151	6-Chloro 4-Hydroxy 2-Methyl 2H-thieno[2,3,e][1,2]thiazine -3-Carboxylate 1,1-dioxide	70415-50-8		aversive agents to discourage the inhalation or ingestion of toxic substances
152	4,4'-(2-Pyridinylmethylene) bisphenol	603-41-8		It is used to relieve pain, tenderness, swelling, and stiffness.
153	3-Amino-4-methyl-2-thiophenecarboxylic acid methyl ester	85006-31-1		It is used to relieve pain, tenderness, swelling, and stiffness.
154	R & D	---		0.1
Total Production (MT/Month)			125.1	
1.	API Products		75.0	
	Product No. 1 to 7		40 TPM	
	Product No. 8 to 24		15 TPM	
	Product No. 25 to 37		10 TPM	
	Product No. 38 to 83		5 TPM	
	Product No. 84 to 88		5 TPM	
2.	Intermediate Products		50.0	
	Product No. 89 to 97		20 TPM	
	Product No. 98 to 106		15 TPM	
	Product No. 107 to 144		10TPM	
	Product No. 145 to 153		5 TPM	
3.	R & D		0.1	

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 28.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) Committee asked to submit the following:
- ✓ Submit clarification regarding storage of bromine and details of Fresh/Recover solvent storage in area adequacy with compatibility chart for raw materials considering its type of hazard.
- 8) Later on PP submitted following details through email
- ✓ They have clarified that total 84 Nos. of Boxes will be required for the storage of bromine. Also, compatibility chart for raw materials considering its type of hazard is given below.
- 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):															
	Total Project															
	Rs. 8 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>1.0</td> </tr> <tr> <td>Building</td> <td>1.5</td> </tr> <tr> <td>Machinery</td> <td>2.3</td> </tr> <tr> <td>Env. & Safety</td> <td>3.2</td> </tr> <tr> <td>Miscellaneous</td> <td>--</td> </tr> <tr> <td>Total</td> <td>8.0</td> </tr> </tbody> </table>	Details	Project Cost (Rs. In Crores)	Land	1.0	Building	1.5	Machinery	2.3	Env. & Safety	3.2	Miscellaneous	--	Total	8.0	
Details	Project Cost (Rs. In Crores)															
Land	1.0															
Building	1.5															
Machinery	2.3															
Env. & Safety	3.2															
Miscellaneous	--															
Total	8.0															
	-															
A-2	Details of CER -															

PP shall carry out CER activities as below:

- ✓ Solid waste facility at village
- ✓ Rainwater harvesting system at Gram panchayat
- ✓ Installation of solar streetlight in the streets of Village. 10 Nos.

B Land / Plot ownership details:

Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/DEE/ANK/61 in the favor of Apex Healthcare Limited on dated 02.02.2022

B-1 Plot area

Total Plot area
2155.07 Sq. m.

B-2 Area adequacy

Area Adequacy table:

Sr. No.	Area	Ground Floor	First Floor	Second Floor	Sq. M.	%
1	Production Area	0	170	170	340	0.0
2	R.M Storage Area	170	0	0	170	7.888
	R.M.Storage :- Drum :- Corrosive	30	0	0		
	R. M. Storage: -Drum: - Toxic	30	0	0		
	R. M. Storage: -Drum: - Other	45	0	0		
	R.M.Storage: - Bag	65	0	0		
3	F.G. Storage	115	115	0	230	5.3
4	Utility Area	80	0	0	80	3.7
5	ETP Area	100	0	0	100	4.6
6	Solid Waste storage Area	10	0	0	10	0.5
7	Haz Waste storage area	20	0	0	20	0.9
8	Fresh Solvent Storage Area	40	0	0	40	1.9
9	Recover Solvent Storage Area	60	0	0	60	2.8
10	Tank Farm storage area	100	0	0	100	4.6
	Tank Farm storage area: - Acid	60	0	0		
	Tank Farm storage area: - Solvent	40	0	0		
11	Green Belt Area	711.1731	0	0	711	33.0
12	Office Area/OH centre	30	30	30	90	1.4
13	Open Area	718.8969	0	0	719	33.4
	TOTAL	2155.07				100

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

- Production capacity: 125.0 MT/Month.
- Company will store its raw material in Tanks, Drums and Bags. (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
Non-PESO solution- Tank				
1	Sulphuric Acid	15 KL	1 Nos.	11.52 KL

2	Nitric Acid	3 KL	1 Nos.	2.51 KL
3	Hydrochloric Acid	10 KL	1 Nos.	8.89 KL
PESO Solution- Drum				
1	Acetone	250 Lit	10 Nos.	2.52 KI
2	Chloroform	250 Lit	20 Nos.	4.85 KI
3	DMF	250 Lit	2 Nos.	0.35 KI
4	EDC	250 Lit	12 Nos.	3.03 KI
5	Ethanol	250 Lit	6 Nos.	1.52 KI
6	Ethyl acetate	250 Lit	15 Nos.	3.85 KI
7	IPA	250 Lit	19 Nos.	4.67 KI
8	MDC	250 Lit	20 Nos.	5.13 KI
PESO Solution- Tank				
9	Acetic acid	10 KL	1 Nos.	7.65 KI
10	Methanol	10 KL	1 Nos.	7.47 KI
11	Toluene	8 KL	1 Nos.	5.36 KI
Set of Cylinders and Bottle				
1	Hydrogen	60 Kg	1 Nos.	0.05 m ³
2	Bromine	3 Kg	500 Nos.	1.5 MT
3	Chlorine	900 Kg	2 Nos.	1.8m ³
4	Ammonia	50 Kg	46 Nos.	2.33m ³

- Area required for ETP 100.0 m².
- 80.0 m² area provided for the Utilities.
- 340. 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: 1166 Nos. (1 Bag=0.5 m ²)	29.16	213.8	230
2	Raw Material Storage area (1 week inventory) (G)	Drums: 140 Nos. (1 Drum = 0.5 m ²)	35	70	105
3	Raw Material Storage area (1 week inventory) (G)	Drums: 260 Nos. (1 Bag=0.5 m ²)	13	47.6	65
4	Solvent Storage Area (PESO) (Storage at a time) (For fresh and recovered solvents)	Drums: 160 Nos. (1 Drum = 0.5 m ²)	40	80	100
6	Hydrogen cylinder storage area	--	0.05	0.5	1
7	Bromine solution Storage area	--	1.52	46	50
8	Chlorine Tonner storage area	--	1.80	12	20
9	Ammonia cylinder storage area	--	2.33	23	30

			122.86 MT	492.9m ²	601 m ²
6) Hence, adequate area is available for proposed new Facility.					
Comments:					
<ul style="list-style-type: none"> ➤ 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	711.17 inside			
	% of total area	33% Inside			
Comments:					
The condition shall be given that -					
<ul style="list-style-type: none"> ➤ The PP shall develop green belt (711.17 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		
			50		
	-				
D	WATER				
D-1	Source of Water Supply				
<ul style="list-style-type: none"> ➤ Ankleshwar GIDC Water supply. ➤ GIDC Water Supply No: NTA/ANK/DEE(WS)/139, Dated: 02/02/2022. 					
Comments:					
<ul style="list-style-type: none"> ➤ Prior permission from concerned authority shall be obtained for withdrawal of water. 					
D-2	Water consumption (KLD)				
	-				
			Quantity		
	Category				

	KLD
• Domestic	2.0
• Gardening	3.0
•	
Process	25.10
Washing	3.0
Boiler	16.16
Cooling	10.0
Others (Scrubber)	2.74
Industrial Total	57.0
Grand Total (A+B+C)	62.0

-
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	Wastewater KLD
1. Domestic	1.50
2. Industrial	
Process	26.81
Washing	3.0
Boiler	3.61
Cooling	2.58
Others (Scrubber)	0.0
Total Industrial wastewater	36.0
Total [A + B]	37.50

-
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.

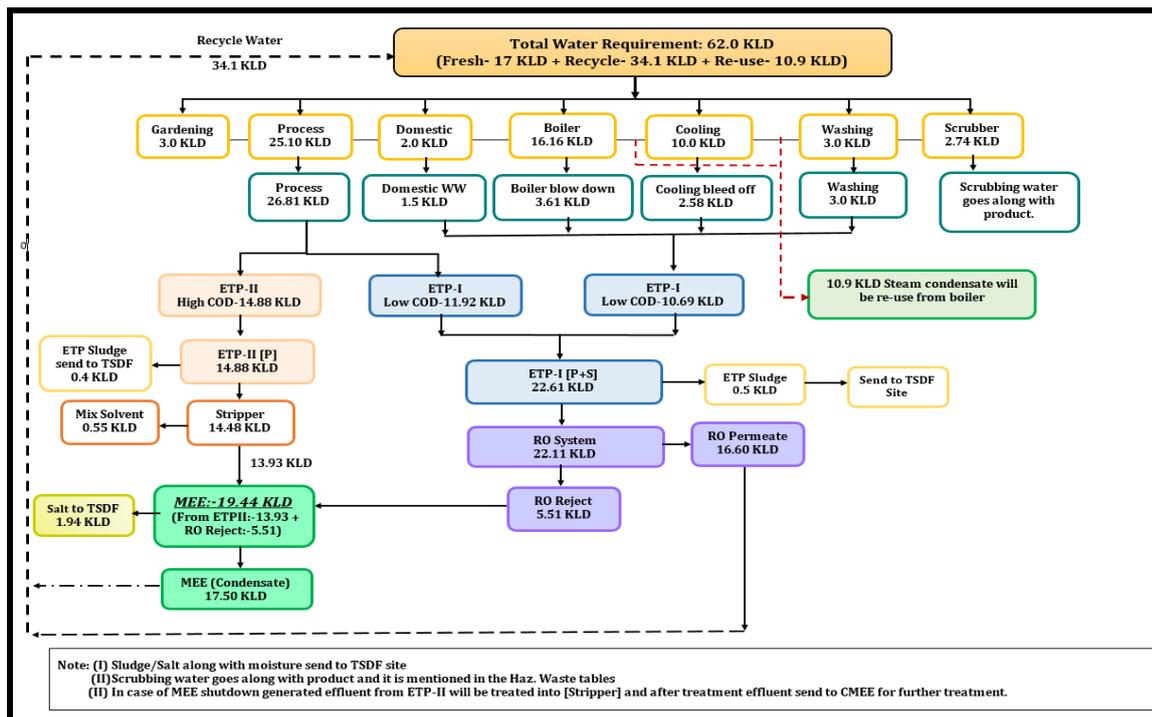
D-4 Break-up of waste water disposal & facility (For Domestic)

1.50 KLD Domestic Waste water shall be treated in ETP.

Comments:

Domestic wastewater generation shall not exceed 1.50 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	21.12 KLD	Low COD Effluent generated from Process, Utilities and Washing section shall be mixed with effluent generated from Domestic and treated into ETP [Primary + Secondary] treatment plant and after treatment effluent send to RO Treatment and after adequate treatment RO permeate [i.e. 16.60 KLD] shall be recycle within plant premises and RO Reject [5.51 KLD] shall be treated into MEE-system and MEE condensate shall be recycle within plant premises and MEE salt shall be send to TSDF site.
	2	14.88 KLD	High COD Effluent generated from Process shall be treated into ETP [Primary] treatment plant and after primary treatment effluent treated into stripper. Stripped out solution shall be subjected to In-house MEE system. MEE condensate [i.e. 17.50 KLD] shall be recycle within plant premises.
	Total	36.0 KLD	[34.1 KLD water shall be recycle from MEE condensate and RO Permeate]
	Membership Certificate no. & Date (For CETP/CMEE/CSD etc.) For CMEE [In case of MEE Shutdown]: -Membership certificate of M/s: BEIL-Ankleshwar vide no. Ref. BEIL/ANK/2022 dated 25.01.2022		
D-5b	Simplified water balance diagram		



D-5c Summary		Quantity	Remarks
Summary of water requirement		KLD	
Total water requirement for the project (A)		62.0	
Quantity to be recycled (B)		45.0 [17.5 KLD MEE Condensate + 16.60 KLD RO Permeate + 10.9 KLD Steam Condensate from boiler]	
Total fresh water requirement (C)		17.0	
Ensure Total water requirement = Recycled water+ Fresh water i.e. A = B + C			

Comments:

- Total water requirement for the project shall not exceed 62.0 KLD. Unit shall Recycle/reuse 45 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 17 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, Utilities and Washing section shall be mixed with effluent generated from Domestic and treated into ETP [Primary + Secondary] treatment plant and after treatment effluent send to RO

Treatment and after adequate treatment RO permeate [i.e. 16.60 KLD] shall be recycle within plant premises and RO Reject [5.51 KLD] shall be treated into MEE-system and MEE condensate shall be recycle within plant premises and MEE salt shall be send to TSDF site.

- ✓ High COD Effluent generated from Process treated into ETP [Primary] treatment plant and after primary treatment effluent treated into stripper. Stripped out solution shall be subjected to In-house MEE system. MEE condensate [i.e., 17.50 KLD] shall be recycle within plant premises.

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:200 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)
5.	Boiler [2 Nos.] [Cap. 1.5 TPH] [1 Stand By and 1 Continue Bases]	33	Natural Gas and/or Agro waste/ briquettes	[1900 Nm3/Day] and/or 4 MT/Day	PM SO ₂ NO _x	Adequate Stack Height and/or Multi Cyclone Separator + Bag Filter + Water Scrubber
6.	Thermic Fluid Heater [Cap. 4 lakh Kcal/Hr.]	33	Natural Gas and/or Agro waste/ Briquettes	[450 Nm3/Day] and/or 3 MT/Day		Adequate Stack Height and/or Multi Cyclone Separator + Bag Filter + Water Scrubber
7.	D.G. Set [Cap. 250 KVA]	18	Diesel	80 Lit/Day		Adequate Stack Height

E-3 Process gas

Sr No	Specific Source of emission (Name of the Product & Process)	Type of Emission	Stack/Vent Height (meter)	Air Pollution Control Measures (APCM)

1	Reaction Vessel-I [Product no. 18,20,50,62,63,81,96,106, 131,132,136,137,143,145,1 47,153]	HCl	20	Two Stage Scrubber (Water Scrubber + Alkali Scrubber)		
2	Reaction Vessels-II [From Product No. 20]	NH ₃	20	Two Stage Acidic Scrubber		
	Reaction Vessels-III	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.					
	Sr. No.	Product	Solvent	Boiling point	Fresh Qty MT/Month	Recover Qty MT/Month
	1	Bisoprolol fumarate	Toluene	110.6 °C	16.00	15.36
			Methanol	64.7 °C	10.00	9.60
			MDC	39.6 °C	16.00	15.36
			Acetone	56 °C	10.00	9.60
	2	Lisinopril	Methanol	64.7 °C	32.00	30.72
	3	Perindopril	Dichloromethane	39.6 °C	14.00	13.44
			Acetone	56 °C	8.00	7.68
			Diisopropyl ether	69 °C	10.00	9.60
			Isopropyl alcohol	82.5 °C	10.00	9.50
	4	Betahistidine	Chloroform	61.2 °C	20.80	19.97
			IPA	82.5 °C	20.00	19.20

	5	Ibuprofen	Isopropyl Alcohol	82.5 °C	28.00	26.88
			Ethylene Dichloride	83.47 °C	12.00	11.52
			Acetone	56 °C	10.00	9.60
			Hexane	69 °C	2.00	1.92
	6	Aspirin	Acetic Acid	118 °C	32.80	31.64
	8	Tranexamic Acid	Toluene	110.6 °C	22.95	22.03
	9	Dolutegravir	Citric acid	310 °C	1.34	1.27
			N-Mehtyl morpholine	116 °C	3.15	3.02
			Iso propyl alcohol	82.5 °C	3.15	3.04
			Ethyl acetate	77.1 °C	5.03	4.82
			Acetic acid	118 °C	2.78	2.66
			Acetonitrile	82 °C	1.50	1.44
			n-heptane	98.42 °C	1.65	1.58
			Methylene Chloride	39.6 °C	1.50	1.44
			Ethanol	78.37 °C	1.65	1.57
	10	Acyclovir	Acetic Anhydride	139.5 °C	7.50	7.20
			Acetone	56 °C	10.50	10.08
			Toluene	110.6 °C	3.00	2.88
	11	Valacyclovir	Toluene	110.6 °C	1.50	1.44
			Hexane	69 °C	1.50	1.44
Dichloromethane (DCM)			39.6 °C	7.50	7.20	
Isopropanol (IPA)				3.00	2.88	
Dimethyl formamide			153 °C	2.25	2.16	
Methanol			64.7 °C	1.50	1.44	
Ethanol			78.37 °C	1.50	1.44	
12	Tenofovir	Di methyl Formamide (DMF)	153 °C	1.50	1.44	
		Toluene	110.6 °C	3.90	3.74	
		Acetone	56 °C	2.25	2.16	
		Methylene Dichloride(MDC)	39.6 °C	2.25	2.16	
		Methanol	64.7 °C	3.00	2.88	
13	Efavirenz	Tetrahydrofuran	66 °C	3.00	2.88	
		Methyl tert-butyl ether	55.2 °C	1.80	1.73	
		Toluene	110.6 °C	3.60	3.46	
		Heptane	98.42 °C	1.65	1.58	
		Methanol	64.7 °C	9.00	8.64	
		n-Hexane	69 °C	2.70	2.59	
		Acetone	56 °C	1.20	1.15	
		Isopropyl Alcohol	82.5 °C	1.20	1.15	
14	Levetiracetam	Methylene Dichloride	39.6 °C	12.00	11.52	
		Ethyl Acetate	77.1 °C	7.50	7.20	
15	Lamivudine	Cyclohexane	80.75 °C	7.95	7.63	
		Toluene	110.6 °C	5.55	5.33	

		n-Hexane	69 °C	1.95	1.87
		Ethyl Acetate	77.1 °C	0.90	0.86
		HMDS	127 °C	0.30	0.29
		Ethyl alcohol	78.37 °C	1.65	1.58
16	Guifenesin	Toluene	110.6 °C	16.50	15.84
		EDC	83.47 °C	3.00	2.88
17	Gabapentin	Methylene Dichloride	39.6 °C	4.50	4.32
		Methanol	64.7 °C	12.66	12.15
18	Chlorpheniramine Maleate	Ethy Acetate	77.1 °C	16.50	15.84
20	Naproxen sodium	Methanol	64.7 °C	4.95	4.75
		EDC	83.47 °C	2.25	2.16
		β -Naphthol	285 °C	3.00	2.88
		2-butyl chloro acetate	167 °C	3.00	2.85
		Acetone	56 °C	1.50	1.44
		N-Methyl D-Glutamine	210 °C	1.50	1.44
		Toluene	110.6 °C	3.30	3.17
22	Ibuprofen Sodium	Methanol	64.7 °C	9.00	8.64
		Cyclohexane	80.75 °C	7.5	7.20
23	Lidocaine hydrochloride	Diethyl Amine	55.5 °C	9.00	8.64
		Acetone	56 °C	10.80	10.37
24	Phenyramidol hydrochloride	Dimethyl Formamide	153 °C	7.05	6.87
		Toluene	110.6 °C	4.50	4.37
		Methanol	64.7 °C	8.10	7.78
25	Ibuprofen Lysinate	Hexane	69 °C	12.20	11.70
27	Aceclofenac	Toluene	110.6 °C	6.00	5.76
		DMF	153 °C	7.00	6.72
28	Albendazole	Methanol	64.7 °C	10.00	9.61
29	Ambroxol hydrochloride	Methanol	64.7 °C	13.00	12.48
30	Trazodone	Isopropyl Alcohol	82.5 °C	4.20	4.03
		Toluene	110.6 °C	2.00	1.92
		Methanol	64.7 °C	4.50	4.32
		Dimethyl Formamide	153 °C	2.00	1.92
31	Pregabalin	Ethanol	78.37 °C	2.00	1.92
		Iso Propyl Alcohol	82.5 °C	6.80	6.53
		Tetrahydrofuran	66 °C	2.10	2.02
		(S)-Mandelic acid	321.8 °C	1.40	1.34
32	Omeprazole	Methanol	64.7 °C	5.00	4.80
		Toluene	110.6 °C	5.00	4.80
		Acetone	56 °C	1.00	0.96
33	Esomeprazole	Toluene	110.6 °C	8.00	7.68
		Methanol	64.7 °C	4.00	3.84
34	Pantoprazole sodium	Acetone	56 °C	1.50	1.44
		Toluene	110.6 °C	1.50	1.44

		Methylenedichloride	39.6 °C	7.82	7.51
		Methanol	64.7 °C	2.20	2.11
		Chloroform	61.2 °C	4.62	4.44
35	Rabeprazole	Toluene	110.6 °C	6.40	6.14
		DMSO	189 °C	1.00	0.96
		MDC	39.6 °C	2.60	2.50
		Acetone	56 °C	1.20	1.15
		Isopropyl Alcohol	82.5 °C	1.70	1.63
36	Lansoprazole	Acetic Acid	118 °C	1.20	1.15
		MIBK	116 °C	2.00	1.92
		Toluene	110.6 °C	4.00	3.84
		Methylene Dichloride	39.6 °C	1.00	0.96
		Isopropyl Alcohol	82.5 °C	1.80	1.73
		Chloroform	61.2 °C	3.00	2.88
		Acetone	56 °C	1.00	0.96
37	Fluconazole	MDC	39.6 °C	2.00	1.92
		Ethyl Acetate	77.1 °C	2.40	2.30
		Toluene	110.6 °C	1.20	1.15
		DMF	153 °C	5.00	4.80
		IPA	82.5 °C	1.00	0.96
38	Dexibuprofen	N - Octyl D-Glucamine	524.7 °C	2.00	1.92
		Toluene	110.6 °C	3.50	3.36
39	Telmisartan	Methanol	64.7 °C	2.05	1.97
		Chloroform	61.2 °C	1.15	1.10
		n-Hexane	69 °C	0.70	0.67
		Acetone	56 °C	1.05	1.01
		MDC	39.6 °C	0.85	0.82
40	Losartan	Toluene	110.6 °C	0.30	0.29
		MDC	39.6 °C	4.30	4.13
		Methanol	64.7 °C	1.95	1.87
		IPA HCl	82.5 °C	0.85	0.82
		Ethyl Acetate	77.1 °C	0.50	0.48
41	Valsartan	Methanol	64.7 °C	0.50	0.48
		Toluene	110.6 °C	4.10	3.94
		MDC	39.6 °C	0.80	0.77
		Xylene	139 °C	0.70	0.67
		N-Hexane	69 °C	1.00	0.96
42	Olmisartan	Diethyl ether	34.6 °C	1.00	0.96
		MCI	39.6 °C	0.85	0.82
		Toluene	110.6 °C	1.85	1.78
		Ethyl acetate	77.1 °C	0.65	0.62
		DMAC	165 °C	2.38	2.28
		Acetone	56 °C	0.70	0.67
43	Candesartan cilexetil	Dimethyl formamide	153 °C	1.00	0.96
		Cyclo hexane	80.75 °C	0.75	0.72

		Ethyl Acetate	77.1 °C	0.80	0.77
		MDC	39.6 °C	0.70	0.67
		Isopropyl alcohol	82.5 °C	0.20	0.19
		Methanol	64.7 °C	1.75	1.68
44	Irbesartan	DMF	153 °C	0.50	0.48
		Toluene	110.6 °C	1.00	0.96
		Ethyl acetate	77.1 °C	2.50	2.40
		IPA	82.5 °C	2.00	1.92
45	Mebeverin hydrochloride	Methanol	64.7 °C	0.50	0.48
		Toluene	110.6 °C	0.95	0.91
		Ethyl Acetate	77.1 °C	0.65	0.62
		Methyl Isobutyl Ketone	116 °C	1.00	0.96
		Methylene Dichloride	39.6 °C	3.00	2.88
46	Verapamil hydrochloride	Dimethyl Sulfoxide	189 °C	0.50	0.47
		Isopropanol	82.5 °C	0.70	0.67
		Toluene	110.6 °C	1.80	1.73
		Methanol	64.7 °C	0.75	0.72
		Acetone	56 °C	2.00	1.92
47	Drotaverin hydrochloride	Toluene	110.6 °C	3.25	3.11
		Methanol	64.7 °C	1.00	0.96
		IPA	82.5 °C	0.50	0.48
48	Ramipril	Ethyl acetate	77.1 °C	2.50	2.40
		Ethanol	78.37 °C	3.00	2.88
49	Atorvastatin calcium	Methanol	64.7 °C	2.10	2.02
		Acetone	56 °C	1.00	0.96
		Toluene	110.6 °C	1.15	1.10
		IPA	82.5 °C	1.10	1.06
50	Rosuvastatin calcium	Methanol	64.7 °C	1.20	1.16
		MDC	39.6 °C	0.80	0.78
		HMPA	233 °C	1.00	0.97
		Ethanol	78.37 °C	0.50	0.49
		Di methoxy ethane	85 °C	0.65	0.62
		Toluene	110.6 °C	1.45	1.40
		N,N-Dimethyl formamide	153 °C	1.00	0.96
		THF	66 °C	1.00	0.96
		Ethyl acetate	77.1 °C	0.70	0.67
51	Venlafaxin hydrochloride	Toluene	110.6 °C	0.50	0.48
		Methanol	64.7 °C	1.60	1.54
		MDC	39.6 °C	1.00	0.96

		Ethyl Acetate	77.1 °C	1.70	1.63
		IPA	82.5 °C	0.65	0.62
52	Phenylephrin hydrochloride	Methanol	64.7 °C	1.10	1.06
		Chloroform	61.2 °C	0.65	0.62
		IPA	82.5 °C	1.60	1.54
		L(+) Tartaric acid	399.3 °C	1.00	0.96
		Acetone	56 °C	0.60	0.58
53	Lamotrigine	n-Propyl Alcohol(n-PA)	97.2 °C	5.50	5.28
54	Labetalol hydrochloride	Methanol	64.7 °C	2.80	2.69
		Toluene	110.6 °C	1.10	1.05
		IPA	82.5 °C	1.15	1.10
55	Cetirizine hydrochloride	Toluene	110.6 °C	0.50	0.48
		Dimethyl formamide	1 3 °C	4.25	4.08
		Acetone	56 °C	2.10	2.02
56	Levocetirizine hydrochloride	Acetone	56 °C	2.80	2.69
		Toluene	110.6 °C	1.50	1.44
		Dimethyl formamide	153 °C	1.15	1.10
57	Vitamin D3	1-Propanol	97 °C	4.00	3.84
		Methyl tert-butyl ether	55.2 °C	2.00	1.92
58	Terbinafine hydrochloride	Toluene	110.6 °C	3.00	2.88
		Isopropyl Alcohol(IPA)	82.5 °C	2.50	2.40
59	Minoxidil	Methanol	64.7 °C	2.20	2.11
		Acetic Acid	118 °C	1.75	1.68
		Toluene	110.6 °C	1.50	1.44
60	Sertaline hydrochloride	Methylene chloride	39.6 °C	1.50	1.44
		Methanol	64.7 °C	4.25	4.08
		IPA	82.5 °C	1.35	1.30
61	Sugammadex sodium	O-xylene	144 °C	2.50	2.40
		Methanol	64.7 °C	3.00	2.88
62	Apixaban	Ethyl Acetate	77.1 °C	3.00	2.88
		Ethanol	78.37 °C	3.50	3.36
63	Tofacitinib	Methanol	64.7 °C	1.00	0.96
		Toluene	110.6 °C	2.50	2.40
		n - Butanol	117.7 °C	1.50	1.44
64	Teneligliptin HBr	Methylene Dichloride	39.6 °C	3.50	3.36
		Ethyl Acetate	77.1 °C	2.00	1.92
65	Lidocaine base	Diethyl Amine	55.5 °C	2.00	1.92
		Toluene	110.6 °C	2.50	2.40

66	Benzocaine	Toluene	110.6 °C	3.00	2.88
		Methanol	64.7 °C	2.50	2.40
67	Procaine	Toluene	110.6 °C	4.29	4.11
		Ethanol	78.37 °C	1.29	1.23
68	Articaine	Methylene Dichloride	39.6 °C	3.50	3.36
		N - Propylamine	47.8 °C	2.00	1.92
69	Prilocaine hydrochloride	Methylene Dichloride	39.6 °C	1.00	0.96
		N - Propylamine	47.8 °C	1.50	1.44
		Acetone	56 °C	1.30	1.25
70	Prilocaine base	Methylene Dichloride	39.6 °C	1.00	0.96
		N - Propylamine	47.8 °C	1.50	1.44
		Hexane	69 °C	3.00	2.88
71	Bupivacaine hydrochloride	Toluene	110.6 °C	1.00	0.96
		Methylene Dichloride	39.6 °C	2.00	1.92
		Acetone	56 °C	1.50	1.44
72	Ropivacaine hydrochloride	Toluene	110.6 °C	1.50	1.44
		Methylene Dichloride	39.6 °C	2.00	1.92
		Acetone	56 °C	2.00	1.92
73	Tetracaine hydrochloride	Toluene	110.6 °C	1.60	1.54
		Ethanol	78.37 °C	1.17	1.16
		Methylene Dichloride	39.6 °C	2.50	2.40
74	Cinchocaine hydrochloride	Toluene	110.6 °C	1.50	1.44
		Methylene Dichloride	39.6 °C	0.50	0.48
		Isopropyl Alcohol	82.5 °C	3.00	2.88
75	Meloxicam	O - Xylene	144 °C	3.00	2.88
		Isopropyl Alcohol	82.5 °C	0.83	0.80
76	Piroxicam	O - Xylene	144 °C	3.00	2.88
		Isopropyl Alcohol	82.5 °C	0.50	0.48
77	Lornoxicam	O-Xylene	144 °C	3.00	2.93
		Methanol	64.7 °C	3.00	2.88
79	Sodium Picosulphate	Methanol	64.7 °C	3.00	2.88
		Pyridine	115 °C	2.50	2.40
80	Bisacodyl	Methanol	64.7 °C	3.10	3.03
82	Montelukast Sodium	Toluene	110.6 °C	1.50	1.44
		Methanol	64.7 °C	3.00	2.88
83	Desloratidine	Methanol	64.7 °C	6.00	5.76
84	Fusidic Acid	Methanol	64.7 °C	5.00	4.80
		Acetone	56 °C	6.00	5.76

85	Vancomycine	Ethanol	78.37 °C	4.00	3.84
		IPA	82.5 °C	4.00	3.84
87	Seratiopaptidase	IPA	82.5 °C	3.50	3.33
		Acetone	56 °C	2.50	2.38
88	Mycophenolate	Xylene	139 °C	1.00	0.96
		Isobutanol	108 °C	0.50	0.48
		Acetone	56 °C	2.00	1.92
		Isobutyl Acetate	118 °C	1.00	0.96
89	Isobutyl acetophenone	Ethylene Dichloride	83.47 °C	22.20	21.31
90	1-(2,6-Dichlorophenyl)-2-indolinone	Dimethyl Formamide	153 °C	25.93	24.89
91	Try amino pyrimidine sulphate	Methanol	64.7 °C	22.00	21.12
92	Guanine	Formic Acid	100.8 °C	24.00	23.28
93	Adenine	Aniline	184.1 °C	12.00	11.58
		Formamide	210 °C	12.00	11.64
94	(2S)-2-aminobutanamide Hydrochloride	Methanol	64.7 °C	20.00	19.20
95	1,1-Cyclohexane diacetic acid monoamide	Glacial Acetic Acid	118 °C	11.00	10.56
96	3,4-Dimethoxybenzoic acid(Veratric Acid)	Dichloro Methane (MDC)	39.6 °C	22.00	21.12
98	1-(2,2-Dimethoxyethyl)-1,4-dihydro-3-methoxy-4-oxo-2,5-pyridinedi carboxylic acid 2-methyl ester	Methanol	64.7 °C	6.00	5.76
		Ethylacetate	77.1 °C	4.50	4.32
		DMFDMA	104.0°C	4.50	4.32
99	(S)-1-(2-Amino-5-chlorophenyl)-1-(trifluoromethyl)-3-cyclopropyl-2-propyn-1-ol	Tetrahydrofuran	66 °C	1.80	1.73
		Methyl tert-butyl ether	55.2 °C	1.50	1.44
		Toluene	110.6 °C	5.40	5.18
		Heptane	98.42 °C	1.95	1.87
		Methanol	64.7 °C	4.50	4.32
		n-Hexane	69 °C	3.15	3.02
100	(S)-5-Chloro-alpha-(cyclopropylacetenyl)-2-[[[(4-methoxyphenyl)methyl]amino]-alpha-(trifluoromethyl)benzenemethanol	Tetrahydrofuran	66 °C	4.50	4.32
		Methyl tert-butyl ether	55.2 °C	7.50	7.20
		Toluene	110.6 °C	1.50	1.44
		Heptane	98.42 °C	3.00	2.88
101	(1R,2S,5R)-Menthyl-	Cyclohexane	80.75 °C	9.30	8.84

	(2R,5S)-5-(4-amino-2-oxo-2H-pyrimidin-1-yl)-[1,3]oxathiolane-2-carboxylic acid	Toluene	110.6 °C	4.65	4.42
		n-Hexane	69 °C	3.45	3.28
		Ethyl Acetate	77.1 °C	1.80	1.71
		HMDS	127 °C	1.50	1.43
102	2-Amino-3,5-dibromobenzaldehyde	Methanol	64.7 °C	13.50	12.96
103	Trans-4-Aminocyclohexanol	Toluene	110.6 °C	16.50	15.84
104	(3,4-Dimethoxyphenyl) acetonitrile	Chloroform	61.2 °C	12.00	11.52
105	Denatonium Benzoate	Toluene	110.6 °C	12.00	11.40
106	4-(Aminomethyl) Benzoic Acid	Chlorobenzene	132 °C	16.50	15.68
107	1-(3-Chlorophenyl)-4-(3-chloropropyl)piperazine hydrochloride	Xylene	139 °C	1.67	1.58
		Acetone	56 °C	3.33	3.17
		Toluene	110.6 °C	4.17	3.96
108	(R)-(-)-3-(2-Amino-2-oxo ethyl)-5-methyl hexanoic acid	Toluene	110.6 °C	2.00	1.90
		Chloroform	61.2 °C	3.00	2.85
		R(+) Phenyl ethyl amine	85 °C	6.00	5.76
109	2-Chloromethyl-4-methoxy-3,5-dimethylpyridine hydrochloride	Methanol	64.7 °C	4.13	3.93
		Toluene	110.6 °C	4.70	4.47
		Acetone	56 °C	4.00	3.80
111	5-Difluoromethoxy-2-Mercapto Benzimidazole	Acetonitrile	82 °C	5.00	4.75
		Chloroform	61.2 °C	5.00	4.75
112	5-Difluoromethoxy-2-[[3,4-dimethoxy-2-pyridinyl)methyl]thio]-1H-benzimidazole	Acetone	56 °C	2.70	2.57
		Toluene	110.6 °C	1.80	1.71
		Methylenedichloride	39.6 °C	2.60	2.47
		Methanol	64.7 °C	2.90	2.76
		Chloroform	61.2 °C	5.54	5.26
113	2-Chloromethyl 3,4-Dimethoxy Pyridine HCl	Acetone	56 °C	2.30	2.19
		Toluene	110.6 °C	1.20	1.14
		Methylenedichloride	39.6 °C	1.50	1.43
		Methanol	64.7 °C	2.30	2.19
		Chloroform	61.2 °C	6.20	5.89
115	2-Chloromethoxy-4-(3-Methoxy Propoxy)-3-Methyl Pyridine	Toluene	110.6 °C	4.00	3.81
		DMSO	189 °C	3.00	2.85
		MDC	39.6 °C	2.00	1.90
116	2-[[[4-(3-Methoxy Propoxy)-3-Methyl	Toluene	110.6 °C	4.90	4.66
		DMSO	189 °C	2.00	1.90

		Pyridine-2-yl] Methyl] Thio]-1H-Benzimidazole	MDC	39.6 °C	3.50	3.33
118		Methyl 4'-bromomethyl biphenyl-2-carboxylate	Chloroform	61.2 °C	5.00	4.75
			n-Hexane	69 °C	6.00	5.70
119		2-n-propyl-4-methyl-6-(1-methylbenzimidazole-2-yl)benzimidazole	Methanol	64.7 °C	11.50	10.93
120		2n-Butyl-4-chloro-[1-(2'-cyanobiphenyl-4-yl) methyl]-5-(hydroxymethyl)-imidazole	Toluene	110.6 °C	11.00	10.45
121		5-(4'-Bromomethyl-1, 1'-biphenyl-2-yl)-1-triphenylmethyl-1H-tetrazole (TTBB)	Toluene	110.6 °C	1.20	1.14
			MDC	39.6 °C	3.00	2.85
			Methanol	64.7 °C	2.10	2.00
			Ethyl Acetate	77.1 °C	3.00	2.85
122		2-Butyl 4-Chloro 5-Formyl Imidazole(BCFI)	Methanol	64.7 °C	9.00	8.55
123		4-(1-Hydroxy-1-methylethyl)-2-propyl-1-[[2'-[(triphenylmethyl)-1H-tetrazol-5-yl]][1,1'-biphenyl]-4-yl]methyl]-1H-imidazole-5-carboxylic acid ethyl ester)	Diethyl ether	34.6 °C	2.00	1.90
			MCI	39.6 °C	1.00	0.95
			Toluene	110.6 °C	7.09	6.74
			Ethyl acetate	77.1 °C	3.55	3.37
124		5-Methoxy – 2-oxo-1,3-dioxol - 4 - yl) methyl - 4 - (1-hydroxy -1 - methylethyl -2 propyl-1- (2 –(2-triphenylmethyl) -2H – tetrazole -5 – yl) biphenyl -4-yl) methyl) -1H-imidazole – 5 – carboxylate	Diethyl ether	34.6 °C	1.00	0.95
			MCI	39.6 °C	1.20	1.14
			Toluene	110.6 °C	3.40	3.23
			Ethyl acetate	77.1 °C	1.30	1.23
			DMAC	165 °C	6.35	6.03
125		Methyl 1-[(2'-cyanobiphenyl-4-yl)methyl]-2-ethoxy-1H-benzimidazole-7-carboxylate	Methylene Dichloride	39.6 °C	6.00	5.70
127		N-[(2'-Cyanobiphenyl-4-methyl)-(L)-Valine	Toluene	110.6 °C	6.00	5.70
			Methanol	64.7 °C	3.00	2.85

		methyl ester Hydrochloride				
128		4'-[(2-Butyl-4-oxo-1,3-diazaspiro[4.4]non-1-en-3-yl)methyl]biphenyl-2-carbonitrile	DMF	153 °C	12.00	11.40
129		tert-Butyl (4R,6R)-2-[[[6-(2-4-fluorophenyl)-5-isopropyl-3-phenyl-4-(phenylcarbamoyl)pyrrol-1-yl]ethyl]-2,2-dimethyl-1,3-dioxan-4-yl]acetate	Methanol	64.7 °C	2.30	2.19
			Acetone	56 °C	1.30	1.24
			Toluene	110.6 °C	4.10	3.90
			IPA	82.5 °C	2.40	2.28
130		(4R,6R)-tert-Butyl-6-(2-aminoethyl)-2,2-dimethyl-1,3-dioxane-4-acetate	Methanol	64.7 °C	11.00	10.45
131		Methyl 4-(4-fluorophenyl)-6-isopropyl-2-[(N-methyl-N-methylsulfonyl)amino]pyrimidine-5-carboxylate	Methanol	64.7 °C	1.40	1.32
			MDC	39.6 °C	1.60	1.52
			HMPA	233 °C	1.50	1.43
			Ethanol	78.37 °C	2.40	2.28
			Di methoxy ethane	85 °C	1.30	1.24
			Toluene	110.6 °C	2.00	1.90
132		tert-Butyl 6-[(1E)-2-[4-(4-fluorophenyl)-6-(1-methyl ethyl) -2-[methyl (methylsulfonyl)amino]-5-pyrimidinyl]ethenyl]-2,2-dimethyl-1,3-dioxane-4-acetate	Methanol	64.7 °C	3.20	3.04
			MDC	39.6 °C	1.80	1.71
			HMPA	233 °C	1.60	1.52
			Meta chloro peroxy benzoic acid	305.5 °C	1.70	1.63
			Ethanol	78.37 °C	2.00	1.90
			Di methoxy ethane	85 °C	1.00	0.95
			Toluene	110.6 °C	1.20	1.14
133		1-[Cyano-(p-methoxyphenyl)methyl]cyclohexanol	Toluene	110.6 °C	11.01	10.34
134		1-[2-Amino-1-(4-methoxy phenyl)ethyl]cyclohexanol	Toluene	110.6 °C	3.00	2.85
			Methanol	64.7 °C	6.00	5.64
135		2,3-Dichlorobenzoylcyanide	Toluene	110.6 °C	5.00	4.70
			Hexane	69 °C	6.00	5.64
136		5-Chloroacetylsalicylamide	Dichloromethane (MDC)	39.6 °C	6.00	5.70
			Acetone	56 °C	3.40	3.23

		Nitrobenzene	210.9 °C	2.00	1.88
137	1-(4-Chlorobenzhydryl)pi perazine	Toluene	110.6 °C	11.00	10.45
138	2-Amino, 5-methyl thiazole	Toluene	110.6 °C	9.85	9.36
139	4-Hydroxy, 2-methyl, 2h,1,2-benzothiazine carboxylic acid isopropyl ester-1,1-dioxide	Dimethyl Formamide	153 °C	2.50	2.38
		Isopropyl Alcohol (IPA)	82.5 °C	7.00	6.65
140	4-Hydroxy, 2-methyl, 2h,1,2-benzothiazine carboxylic acid methyl ester-1,1-dioxide	Dimethyl Formamide(DMF)	153 °C	3.56	3.38
		Methanol	64.7 °C	2.00	1.92
		MDC	39.6 °C	3.00	2.85
141	Chloro acetyl Xylidine	Toluene	110.6 °C	11.00	10.45
142	2-(2-(3-(S)-(3-(2-(7-Chloro-2-quinolinyl)-ethenyl)phenyl)-3-methanesulphonylox ypropyl)pehenyl)-2-propanol	Methylene Dichloride	39.6 °C	11.00	10.45
143	1-(Mercaptomethyl)-cyclopropane acetic acid	Dimethyl Formamide	153 °C	14.29	13.58
144	Denatonium Saccharate	Toluene	110.6 °C	11.00	10.45
145	3-Morpholino-1-(4-(2-oxopiperidin-1-yl)5,6-dihydropyridin-2(1h)-one	Dichloromethan (MDC)	39.6 °C	1.50	1.43
		Toluene	110.6 °C	1.60	1.51
		Hexane	69 °C	1.10	1.05
		Dimethyl Formamide	153 °C	0.50	0.48
146	z-Ethyl-2-chloro-2-(2-(4-methoxyphenyl)hydr azono)acetate	Methanol	64.7 °C	1.50	1.43
		Isopropyl Alcohol (IPA)	82.5 °C	2.50	2.38
147	4-Chloro-7-tosyl-7h-pyrrolo[2,3-d]pyrimidine	Acetone	56 °C	1.20	1.14
		Toluene	110.6 °C	0.50	0.48
		Hexane	69 °C	0.60	0.57
		Methanol	64.7 °C	2.75	2.61
148	Bis (3R, 4R) - (1-benzyl - 4 methyl - pipeidine - 3yl) methylamine di - toluoyl - L - tartaric acid	Acetone	56 °C	4.50	4.28

149	[(2S)-1-tert-butoxycarbonyl-4-oxo-2-pyrrolidinylcarbonyl]-1,3-thiazolidine	Methylene Dichloride	39.6 °C	5.08	4.83
150	1-(3-methyl-1-phenyl-5-pyrazolyl)-piperazine)	Dimethyl Formamide	153 °C	0.80	0.76
		Ethyl Acetate	77.1 °C	0.63	0.59
		Pyridine	115 °C	1.25	1.19
151	6-Chloro 4-Hydroxy 2-Methyl 2H-thieno[2,3,e][1,2]thiazine-3-Carboxylate 1,1-dioxide	Methanol	64.7 °C	1.50	1.43
		Toluene	110.6 °C	2.00	1.90
152	4,4'-(2-Pyridinylmethylene)bisphenol	Ethyl Acetate	77.1 °C	5.50	5.23
153	3-Amino-4-methyl-2-thiophenecarboxylic acid methyl ester	Methylene Dichloride	39.6 °C	4.00	3.80

F-2 VOC emission sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

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

F-3 LDAR proposed:

Leak Definition

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

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

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

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/Annunum)	Management of HW
1.	Empty barrels/containers/liners contaminated with hazardous chemicals/wastes	Raw Material and Packaging	33.1	100	Collection, Storage, Transportation, reuse or send back to supplier or sell to authorize end users registered under rule-9.
2.	Used or Spent Oil	From Machinery	5.1	1.0	Collection, Storage, Transportation and sold to authorized Recyclers.
3.	ETP	ETP	35.3	324	Collection, Storage, Transportation and sent to Common TSDF site. (Through GPS mounted vehicle)
4.	MEE Salt	MEE	35.3	698.4	
5.	Sodium Phosphate	From Product 53	--	40.0	
6.	Distillation Residue	From Product 2-6,8-18,20,22-25, 27-43, 45-53,55-60, 62-67, 69-77, 79, 80, 82, 84-	20.3	144	Collection, Storage, transportation and sent for co-processing in cement industries disposal at CHWIF. (Through GPS mounted

		90,93,98-109, 112,113,115- 127, 129- 148,150,152,15 3 Max.:- 3,10,37, 63, 86, 93, 102, 124,147			vehicle)
7.	Spent Carbon	From Product 1,2,6- 8,11,13,17,19,2 3-25, 29,34-37,39- 41,48, 49, 51,52,54,59, 60, 63,65,66,69,71, 72, 75-77, 79- 81,88 , 92, 93,96- 97,99, 100,103,108,11 0,111, 114,117,119 Max.:- 1,11,35,72, 88, 97, 99/100/103, 117	28.3	46	
8.	Spent Catalyst	From Product 31,51,91,129,1 30, 134,145 Max.:- 31,51,91,134, 145	28.2	20.0	
9.	HCl Sol. [28-33%]	Scrubber & Product 18,20,50,62,63, 81,96, 106,131,132,13 6,137, 143,145,147,15 3 Max.:- 20,81,96,106, 136,153	--	603.0	Collection, Storage, and Reuse as raw material in manufacturing activities. Or Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
10.	Acetic Acid [30-40%]	From Product 10	--	147.0	
11.	Ammonium Sulphate [30-40%]	From Product No. 20	---	305.0	Collection, Storage, Transportation and sell to authorized end users registered under rule-9.

12.	Hydro bromic acid [45-47 %]	From Product 54,61,143 Max.:-61,143	--	123.5	
13.	Sodium Bisulfite Sol. [NaHSO ₃ Sol.] [30-35%]	From Product	---	110	
14.	Spent Solvent	From Product 2-6,8-18,20,22-25, 27-43, 45-53,55-60, 62-67, 69-77, 79, 80, 82, 84-90,93,98-109, 112,113,115-127, 129-148,150,152,153 Max.:- 1/5,13,34,50, 84,90,101,112, 152	20.2	2082.8	Collection, Storage, Recovery and Recycle for manufacturing of product.
15.	Mixed Solvent	Stripper	--	198	Collection, Storage, Recovery and Recycle for manufacturing of product. or Collection, Storage, Transportation and sell to authorized end users registered under rule-9.
16.	Sodium Hypo Chloride	Scrubber	--	30	Collection, Storage and reused in ETP as neutralizing agent.
17.	Off-Specification Products	Process	28.4	10	Collection, Storage, transportation and sent for co-processing in cement industries disposal at CHWIF. (Through GPS mounted vehicle)

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 Not Applicable.
- ✓ STP sludge generation will be Not Applicable.

Comments:

H SAFETY details

H-1 Details regarding storage of Hazardous chemicals

Safety details....

S.N	Name of chemical	Quantity (Nos.)	Total (Nos.)	Total Qty. to be store
Non-PESO solution- Tank				
1	Sulphuric Acid	15 KL	1 Nos.	11.52 KL
2	Nitric Acid	3 KL	1 Nos.	2.51 KL
3	Hydrochloric Acid	10 KL	1 Nos.	8.89 KL
PESO Solution- Drum				
1	Acetone	250 Lit	10 Nos.	2.52 KI
2	Chloroform	250 Lit	20 Nos.	4.85 KI
3	DMF	250 Lit	2 Nos.	0.35 KI
4	EDC	250 Lit	12 Nos.	3.03 KI
5	Ethanol	250 Lit	6 Nos.	1.52 KI
6	Ethyl acetate	250 Lit	15 Nos.	3.85 KI
7	IPA	250 Lit	19 Nos.	4.67 KI
8	MDC	250 Lit	20 Nos.	5.13 KI
PESO Solution- Tank				
9	Acetic acid	10 KL	1 Nos.	7.65 KI
10	Methanol	10 KL	1 Nos.	7.47 KI
11	Toluene	8 KL	1 Nos.	5.36 KI
Set of Cylinders and Bottle				
1	Hydrogen	60 Kg	1 Nos.	0.05 m ³
2	Bromine	3 Kg	500 Nos.	1.5 MT
3	Chlorine	900 Kg	2 Nos.	1.8 m ³
4	Ammonia	50 Kg	46 Nos.	2.33 m ³

Storage of Hazardous chemicals in Tanks

- Proper storage area for tanks and dykes will be provided.
- Pipes and equipment shall be inspected at regular intervals.
- All storage areas are isolated from all sources of open flame and well posted with "Hazardous Chemical Storage", "No Smoking", "Hot Work Restricted" and provided with adequate fire-fighting/extinguishing systems.
- Spark-resistant tools shall be used.
- Combustibles (wood, paper, oil etc.) shall be kept away from spilt material.
- Flame arrestors and breather valve will be provided for solvent storage tanks.
- Dyke wall will be provided to storage tanks.
- Level transmitter will be made available with low level/high level auto cut-off provision.
- Fire hydrant monitor with foam System with Capacity 2000 L will be provided.

Dumping/drain vessel/alternate vessel shall be made available to collect the spillage material inside the dyke wall.

- FLP type pumps shall be provided.
- Flame proof electrical fittings will be provided.
- Double static earthing shall be provided to storage tank, as per the requirement.
- Double jumper clip shall be provided to all solvent handling pipeline flanges.

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

- Store chemicals inside a closeable cabinet or on a sturdy shelf with a front-edge lip to prevent accidents and chemicals spills; a ¾ - inch front edge lip will be followed.
- Secure shelving to the wall or floor will be provided.
- It will be ensured that all storage areas have doors with locks.
- It will be ensured that chemical storage areas off limits to all persons.
- It will be ensured that proper ventilation will be provided to storage area
- It will be ensured that all containers are properly closed.
- After each use, carefully wipe down the outside of the container with a paper towel before returning it to the storage area. Properly dispose of the paper towel after use.-

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 will be stored under adequate safe condition. • The storage of corrosive and toxic chemicals will be segregated from each other. • The piping will be examined thoroughly every year for finding out any defects; and a defect will be removed forthwith. The record of such examination will be maintained. • Smoking is prohibited inside the factory and same practice will be continued after proposed expansion also.

	<ul style="list-style-type: none"> • 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. • Dyke wall will be provided to the hazardous chemicals storage area. • Spare barrels of sufficient quantity will be kept ready for any emergency spillage or leakage. • Drum trolley will be used for the movement of drums of hazardous chemicals. • Liquid chemicals will be transferred by mechanical seal pump through closed pipeline. 	
<p>➤ Applicability of PESO: Yes. Unit will obtain PESO License for storage of chemicals.</p> <p>Comments:</p> <p>➤ Committee was of the opinion that the provisions of PESO, licensing, condition compliance, monitoring, fall within the preview of The Petroleum and Explosives Safety Organization (PESO) and SEAC has very limited role in this. Nevertheless SEAC has examined it. The PP has submitted that the list of raw materials/products proposed to be produced along with the quantity, attract the provisions of PESO and they will abide by the requisite legal compliances with reference to storage and safety. SEAC has taken note of it.</p>		
H-2	Types of hazardous Processes involved and its safety measures:	
Type of Process	Safety measures including Automation	
Hydrogenation process: -A	<p>For hydrogenation process, hydrogen gas will be used. Unit will allot separate storage area for hydrogen gas cylinder. Hydrogen is a colorless, odorless, tasteless, flammable nontoxic gas which is flammable over a wide range of concentrations.</p> <ul style="list-style-type: none"> ✓ Standard Operating procedure shall be made for before Hydrogen Gas charging into reactor and after completion of reaction Nitrogen flushing will be done. ✓ SOP will be prepared and operators will be trained for the same. ✓ Nitrogen blanketing will be done in Hydrogenation reactor. Safety valve and Rupture disc will be provided on reactor. ✓ Safe Catalyst charging method will be adopted. ✓ Flame arrestor will be provided on vent line of reactor and it will be extended above the roof level. ✓ Static earthing and electric earthing (Double) will be provided. ✓ Hydrogen gas detector will be installed for early detection of gas leak. 	

		<ul style="list-style-type: none"> ✓ One RCC wall having thickness 20 cm will be provided on all side of hydrogenation reactor to protect surrounding and other infrastructure during worst case scenario.
	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. <p>Only trained employees handled bromine charging. Training will be given to employees for bromine handling and charging.</p>
	Chlorination	<ul style="list-style-type: none"> ➤ Chlorine Emergency Kit will be procured and kept ready at process site. ➤ Chlorine Hood with blower will be provided with scrubbing arrangement. ➤ SCBA sets will be kept ready at site. ➤ Safety Shower and eye wash will be provided in process area. ➤ Chlorine absorption system will be provided. In case of chlorine leakage in chlorine shed it will be suck through blower and it will be scrubbed in Caustic scrubber. ➤ Emergency siren and windsock 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

	<p>team, Communication and general administration team, medical team etc.</p> <ul style="list-style-type: none"> ➤ Evacuate the area in down wind direction ➤ For Chlorine evacuate area in down wind direction up to 0.45 km (450 meter) in small spillage and in case of large spillage, evacuate the area in down wind direction 3.8 kms (3800 meters). Approx. manpower affected by the time of spillage or catastrophic failure will be Approx. 40-45 nos. considering surrounding area population. 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. <p>Chlorine Gas detectors will be provided in process area.</p>																		
H-3	Details of Fire Load Calculation																		
<table border="1"> <tr> <td>Total Plot Area:</td> <td>2155.07 M²</td> </tr> <tr> <td>Area utilized for plant activity:</td> <td>725.0 M²</td> </tr> <tr> <td>Area utilized for Hazardous Chemicals Storage:</td> <td>515.00 M²</td> </tr> <tr> <td>Number of Floors:</td> <td>G+2</td> </tr> <tr> <td>Water requirement for firefighting in KLD:</td> <td>3600 Lit.</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>20</td> </tr> <tr> <td>Nearest Fire Station :</td> <td>4-5 Km</td> </tr> <tr> <td>Applicability of Off Site Emergency Plan:</td> <td>Yes</td> </tr> </table>		Total Plot Area:	2155.07 M ²	Area utilized for plant activity:	725.0 M ²	Area utilized for Hazardous Chemicals Storage:	515.00 M ²	Number of Floors:	G+2	Water requirement for firefighting in KLD:	3600 Lit.	Water storage tank provided for firefighting in KLD:	200 KL	Details of Hydrant Pumps:	20	Nearest Fire Station :	4-5 Km	Applicability of Off Site Emergency Plan:	Yes
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Nearest Fire Station :	4-5 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):																		
-																			
<table border="1"> <tr> <td>Number of permanent Employee:</td> <td>50</td> </tr> <tr> <td>Number of Contractual person/Labour:</td> <td>10</td> </tr> <tr> <td>Area provided for OHC:</td> <td>30 m²</td> </tr> <tr> <td>Number of First Aid Boxes:</td> <td>10 nos</td> </tr> <tr> <td>Nearest General Hospital:</td> <td>5 km</td> </tr> <tr> <td>Name of Antidotes to be store in plant:</td> <td>---</td> </tr> </table>		Number of permanent Employee:	50	Number of Contractual person/Labour:	10	Area provided for OHC:	30 m ²	Number of First Aid Boxes:	10 nos	Nearest General Hospital:	5 km	Name of Antidotes to be store in plant:	---						
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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	Wastewater	Construction cost of ETP [2 Nos.], Installation cost of Stripper, RO and MEE + Treatment cost of ETP, Stripper, MEE and RO + Maintenance cost of ETP, Stripper, MEE and RO	1.0	4.20	
2	Air	Installation Cost of Boiler (1 nos.) + THF (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	Proper collection, Safe Handling, Storage within premises and disposal of waste at approved TSDF, re-cyclers, re-processors --	0.27	2.78	
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 process, Bromination and Distillation Process. Monitoring cost of 3rd party Risk assessment, safety audit Installation cost of Fire Extinguisher, Fire hydrant line, alarm system in plant area [i.e., Cost of fire extinguishers (60-65),	1.0	0.4	

		Cost of installation of Fire hydrant line, Fire proximity suit (3 Nos.), Fire trolley (5 Nos) electric siren, Electric Bell]		
5	Green Belt Development	33% of the plant area will be developed as greenbelt.	0.05	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/-	0.08	0.10
7	Noise Control	Regular monitoring of various environmental parameters will be carried out to check the effectiveness of the control system.	0.4	0.15
8	CER Funds	Carried CER activities in nearby villages	---	0.16
9	Rainwater harvesting system	Rainwater harvesting system	0.05	0.01
Total			3.2	8.01

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) 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
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 exothermic reaction vessel safety.

WATER

10. Total water requirement for the project shall not exceed 62.0 KLD. Unit shall recycle/reuse 45.0 KLD of treated industrial effluent within premises. Hence, freshwater requirement shall not exceed 17.0 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.

11. The industrial effluent generation from the project shall not exceed 36.0 KLD.

12. Management of Industrial effluent shall be as under:

- ✓ Low COD Effluent generated from Process, Utilities and Washing section shall be mixed with effluent generated from Domestic and treated into ETP [Primary + Secondary] treatment

plant and after treatment effluent send to RO Treatment and after adequate treatment RO permeate [i.e. 16.60 KLD] shall be recycle within plant premises and RO Reject [5.51 KLD] shall be treated into MEE-system and MEE condensate shall be recycle within plant premises and MEE salt shall be send to TSDF site.

13. In case of maintenance of in-house MEE, unit shall send their waste water to CMEE of BEIL.
14. Unit shall send waste water to in-house MEE/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.
15. Domestic wastewater generation shall not exceed 1.5 KL/Day for proposed project, and it shall be treated in ETP. It shall not be disposed off through soak pit/ septic tank.
16. Unit shall provide ETP with adequate capacity.
17. The PP shall ensure to dispose of Wastewater to the Common Facilities having valid CTO of GPCB.
18. The unit shall provide metering facility at the inlet and outlet of ETP, Stripper, MEE & RO and maintain records for the same.
19. Proper logbooks of ETP, Stripper, MEE & RO; reuse/ recycle of treated/ untreated effluent; chemical consumption in effluent treatment; quantity & quality of treated effluent; power consumption etc. shall be maintained and shall be furnished to the GPCB from time to time.

AIR:

20. Unit shall not exceed fuel consumption for Boiler, TFH and D G Set as per the point no. E-2 as mentioned above.
21. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
22. Unit shall provide adequate APCM with process gas generation sources as the point no. **E-3** as mentioned above.
23. The fugitive emission in the workzone 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.
24. Regular monitoring of Volatile Organic Compounds (VOCs) shall be carried out in the work zone area and ambient air.
25. For control of fugitive emission, VOCs, following steps shall be followed :

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

26. Solvent management shall be carried out as follows:

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

27. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, HCl, Br₂, 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:

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

31. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
32. 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 [711.17 m² (33%) inside plant premises]** as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

OTHERS:

34. The project proponent shall carry out the entire activities [Solid waste facility at village, Rainwater harvesting system at Gram panchayat, Installation of solar streetlight in the streets of 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.
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 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.
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

03	SIA/GJ/IND3/247609/2021	M/s. Arizon Pharma Plot no. 1/18/C, GIDC Ind. Estate, Kalol, Dist. : Gandhinagar 382721	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/IND3/247609/2021
1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	31.12.2021
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.Akshar Consultants, Ahmedabad
1.8. SEAC Meeting No. and Date:	389 th meeting dated 28.03.2022
1.9. Compliance of Existing EC & CCA	No earlier EC and CCA.

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

Product Table

Sr. No.	Product	API OR Intermediate	CAS No.	Proposed Quantity MT/Month	End use
1.	Rosuvastatin	API	147098-20-2	21.00	HMA-CoA reductase

	Calcium				inhibitors
2.	Famotidine	API	76824-35-6		Antacids
3.	Levamlodipinebesylate	API	88150-42-9		Calcium Channel blockers
4.	Solifenacin succinate	API	242478-38-2		Anti muscarinics
5.	Lamotrigine	API	84057-84-1		Antiepileptic
6.	Venlafaxine HCl	API	99300-78-4		Anti depressant
7.	Des venlafaxine succinate	API	386750-22-7		Anti depressant
8.	Paliperidone	API	144598-75-4		Antipsychotics
9.	Febuxostat	API	144060-53-7		Hyperuricemia
10.	Duloxetine HCl	API	136434-34-9		Anti depressant
11.	VilazodoneHCl	API	163521-08-2		Anti depressant
12.	Safinamide methane sulfonate	API	202825-46-5		Parkinson's disease
13.	Sertraline HCl	API	79617-96-2		Anti depressant
14.	BenserazideHCl	API	14919-77-8		Dopa decarboxylase inhibitors
15.	Dimethyl fumarate	API	624-49-7		Nrf2 activators, multiple sclerosis
16.	Prucalopride succinate	API	179474-85-2		Chronic constipation
17.	Pantoprazole sodium sesquihydrate	API	164579-32-2		inflammation or gastroesophageal reflux disease
18.	Telmisartan	API	144701-48-4		Anti Hypertensive
19.	Amlodipine Besylate	API	88150-42-9		Calcium Channel blockers
20.	Pregabalin	API	148553-50-8		Anxiety disorder
21.	Molnupiravir	API	2349386-89-4		Anti viral
22.	Pioglitazone HCl	API	112529-15-4		Anti Diabetic
23.	Rabeprazole sodium	API	117976-90-6		gastroesophageal reflux disease
24.	AnagrelideHCl	API	823178-43-4		Treat essential Thrombocytosis

- 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 28.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) Committee asked to submit the following:
 - ✓ To submit plot plan with clear dimensions and showing location of OHC in it.
 - ✓ To include RO water purchased from market in process water requirement in the table of water

consumption instead of showing it separately.

- ✓ To submit lease agreement with 7 years validity instead of 5 years.
- ✓ To submit letter from GIDC, Kalol for supply of water requirement.
- ✓ To review CER activities and make them relevant with local needs.
- ✓ To increase fire water reservoir capacity to 100 KL instead of 50 KL.
- ✓ To provide details of fire hydrant, foam trolley etc.
- ✓ To provide list of all solvents / raw materials to be stored in drums with capacity alongwith compatibility chart.

- 8) PP submitted an undertaking ensuring proposed product profile is in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as category B2 projects. Undertaking as proposal of said product are eligible to consider under B2 category as per the notification of MoEF&CC dated 27.03.2020
- 9) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 1223(E) dated 27.03.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.
- 10) PP presented salient features of the project including Water, Air and Hazardous waste management are as under:

Sr. no.	Particulars	Details														
A-1	Project cost															
Total cost of Proposed Project (Rs. in Crores):																
<table border="1" style="width: 100%;"> <tr> <td style="width: 80%;">Total Project</td> <td></td> </tr> <tr> <td>Rs. 5Crores</td> <td></td> </tr> </table>			Total Project		Rs. 5Crores											
Total Project																
Rs. 5Crores																
Break-up of proposed project Cost:																
<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: center;">Details</th> <th style="text-align: center;">Project Cost (Rs. In Crores)</th> </tr> </thead> <tbody> <tr> <td>Land</td> <td style="text-align: center;">0.00 (On lease)</td> </tr> <tr> <td>Building</td> <td style="text-align: center;">1.50</td> </tr> <tr> <td>Machinery</td> <td style="text-align: center;">2.00</td> </tr> <tr> <td>Env. & Safety</td> <td style="text-align: center;">1.50</td> </tr> <tr> <td>Miscellaneous</td> <td style="text-align: center;">0.00</td> </tr> <tr> <td>Total</td> <td style="text-align: center;">5.00</td> </tr> </tbody> </table>			Details	Project Cost (Rs. In Crores)	Land	0.00 (On lease)	Building	1.50	Machinery	2.00	Env. & Safety	1.50	Miscellaneous	0.00	Total	5.00
Details	Project Cost (Rs. In Crores)															
Land	0.00 (On lease)															
Building	1.50															
Machinery	2.00															
Env. & Safety	1.50															
Miscellaneous	0.00															
Total	5.00															
-																
A-2	Details of CER -															
PP shall carry out CER activities as below:																
<ul style="list-style-type: none"> ✓ Health & family welfare (General Medical health checkup camp in every three months, Specialist medical health checkup camp every six months, Contribution towards primary health services depending on local needs) ✓ Sustainable Development (Rain water recharge system by deepening village Pond, Tree plantation) 																

B Land / Plot ownership details:

Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/MEH/TRF/FTO/KAL1/34 dated 29/04/2021 in the name of Supra Colour Chem. ArizonPharma has taken the plot on lease from Supra Colour Chem.

B-1 Plot area

Total Plot area
2081.12 Sq. m.

-

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

Sr. No.	Location	Equipments to be installed	Approx. Area in sq. mtr.
1	Manufacturing area consisting of ground floor, first floor and second floor	11 nos. of reactors of max. capacity 7.5 KL each, 4 nos. of centrifuges, drying and powder processing	320.00
2	Raw material Storage	--	160.00
3	Finished goods storage	--	60.00
4	Utility and boiler area	--	120.00
5	ETP	--	130.00
6	Hazardous Waste storage area	--	76.00
7	Q.C. & R&D Laboratory	--	40.00
8	Green-belt	--	775.00
9	Open area and internal roads	--	400.00
Total :-			2081.00

➤ 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	776 inside
% of total area	37% Inside

Comments:

The condition shall be given that -

- The PP shall develop green belt (776 Sq. m i.e. 37 % of the total plot area) as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

C Employment**Employment generation**

	Total
	50

-

D WATER**D-1 Source of Water Supply**

- Kalol GIDC Water supply.

Comments:

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

D-2 Water consumption (KLD)

-

Category	Fresh Water Qty., KLD	Reuse Water Qty., KLD	Total Water Qty., KLD
(A) Domestic	4.0	0.0	4.0
(B) Gardening	2.5	0.00	2.5
(C) Industrial			
Process & Washing	43.0	0	43.0
Boiler	10.0	35.0	45.0
Cooling	5.0	10.0	15.0
Others (Scrubber)	0.5	0.0	0.5
RO Water purchased	41.0	0.0	41.0
Industrial Total	99.5	45.0	144.5
Grand Total (A + B + C)	106.0	45.0	151.0

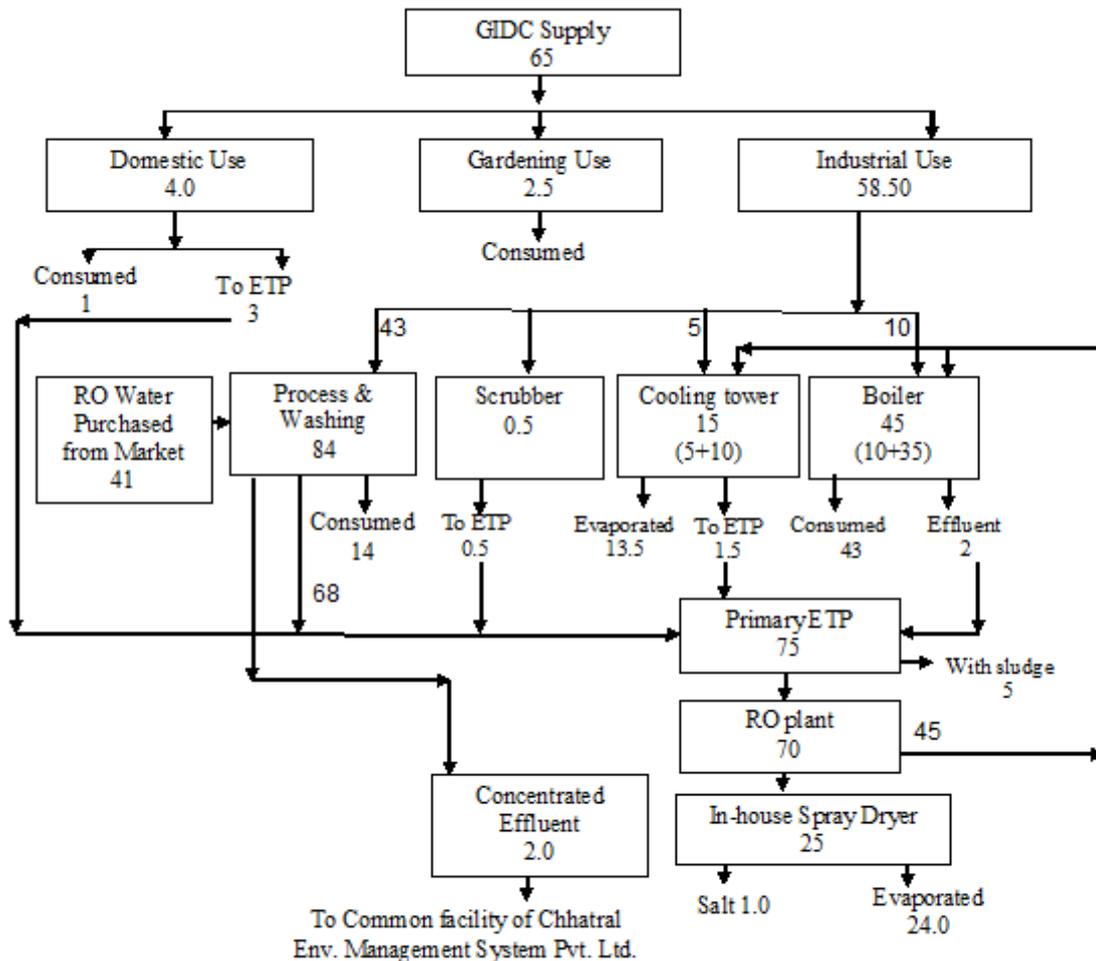
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Comments:

- 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)																			
-																				
<table border="1"> <thead> <tr> <th data-bbox="360 277 978 344">Category</th> <th data-bbox="978 277 1182 344">Waste water KLD</th> </tr> </thead> <tbody> <tr> <td data-bbox="360 344 978 383">3. Domestic</td> <td data-bbox="978 344 1182 383">3.00</td> </tr> <tr> <td data-bbox="360 383 978 421">4. Industrial</td> <td data-bbox="978 383 1182 421"></td> </tr> <tr> <td data-bbox="360 421 978 459">Process & Washing</td> <td data-bbox="978 421 1182 459">70.00</td> </tr> <tr> <td data-bbox="360 459 978 497">Boiler</td> <td data-bbox="978 459 1182 497">2.00</td> </tr> <tr> <td data-bbox="360 497 978 535">Cooling</td> <td data-bbox="978 497 1182 535">1.50</td> </tr> <tr> <td data-bbox="360 535 978 573">Others (scrubber effluent)</td> <td data-bbox="978 535 1182 573">0.50</td> </tr> <tr> <td data-bbox="360 573 978 611">Total Industrial waste water</td> <td data-bbox="978 573 1182 611">74.00</td> </tr> <tr> <td data-bbox="360 611 978 629">Total [A + B]</td> <td data-bbox="978 611 1182 629">77.00</td> </tr> </tbody> </table>			Category	Waste water KLD	3. Domestic	3.00	4. Industrial		Process & Washing	70.00	Boiler	2.00	Cooling	1.50	Others (scrubber effluent)	0.50	Total Industrial waste water	74.00	Total [A + B]	77.00
Category	Waste water KLD																			
3. Domestic	3.00																			
4. Industrial																				
Process & Washing	70.00																			
Boiler	2.00																			
Cooling	1.50																			
Others (scrubber effluent)	0.50																			
Total Industrial waste water	74.00																			
Total [A + B]	77.00																			
-																				
Comments:																				
<ul style="list-style-type: none"> ➤ The waste water generation above is found to be calculated considering the worst case scenario and in any case the waste water generation shall not exceed the same. 																				
D-4	Break-up of waste water disposal & facility (For Domestic)																			
<p>3 KLD Domestic Waste Water will be treated in ETP & treated wastewater will be sent to in-house RO and Spray dryer.</p>																				
Comments:																				
<ul style="list-style-type: none"> ➤ Domestic wastewater generation shall not exceed 3 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)																			
	<table border="1"> <thead> <tr> <th data-bbox="268 1397 389 1464">Sr. no.</th> <th data-bbox="389 1397 616 1464">Quantity KLD</th> <th data-bbox="616 1397 1374 1464">Facility</th> </tr> </thead> <tbody> <tr> <td data-bbox="268 1464 389 1532">1</td> <td data-bbox="389 1464 616 1532">72.00</td> <td data-bbox="616 1464 1374 1532">in-house primary ETP followed by in-house RO & spray dryer</td> </tr> <tr> <td data-bbox="268 1532 389 1599">2</td> <td data-bbox="389 1532 616 1599">2.00</td> <td data-bbox="616 1532 1374 1599">to common facility of Chhatral Env. Management System Pvt. Ltd.</td> </tr> <tr> <td data-bbox="268 1599 389 1637">Total</td> <td data-bbox="389 1599 616 1637">74.00</td> <td data-bbox="616 1599 1374 1637"></td> </tr> </tbody> </table>	Sr. no.	Quantity KLD	Facility	1	72.00	in-house primary ETP followed by in-house RO & spray dryer	2	2.00	to common facility of Chhatral Env. Management System Pvt. Ltd.	Total	74.00		<p>Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)</p> <p>Membership certificate of M/s:Chhatral Env. Management System Pvt. Ltd. vide no. Nil dated 08.02.2022.</p>						
Sr. no.	Quantity KLD	Facility																		
1	72.00	in-house primary ETP followed by in-house RO & spray dryer																		
2	2.00	to common facility of Chhatral Env. Management System Pvt. Ltd.																		
Total	74.00																			
D-5b	Simplified water balance diagram																			
--																				

TYPICAL WATER BALANCE DIAGRAM FOR PROPOSED PROJECT

**Note:**

- First figure in bracket denotes fresh water use and second figure denotes proposed effluent reuse.
- All figures are in KL/day.

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D-5c	Summary		
	Summary of water requirement	Quantity KLD	Remarks
	Total water requirement for the project (A)	151.00	
	Quantity to be recycled (B)	45.00	
	Total fresh water requirement (C)	106.00	
	Ensure Total water requirement = Recycled water + Fresh water i.e. A = B + C		

Comments:

1. Total water requirement for the project shall not exceed 151 KLD. Unit shall reuse 45KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 106 KLD and it shall be met through GIDC water supply (65 KLD) and

RO water purchased from market (41 KLD) only. Prior permission from concerned authority for withdrawal of water shall be obtained.

2. Management of Industrial effluent shall be as under:

- ✓ 72 KLD in primary ETP followed by RO and spray dryer to achieve zero liquid discharge (capacity 75 KL/day for primary ETP, 70 KL/day for RO plant and 25 KL/day for spray dryer)
- ✓ 2 KL / day concentrated effluent shall be sent to common facility of M/s:Chhatral Env. Management System Pvt. Ltd.

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	2 TPH steam boiler	15.00	Agro Waste (Briquettes) / Bio - coal	10.00	PM, SO ₂ & NO _x	Cyclone Separator followed by Bag Filter

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	Reactor	NH ₃	11.00	Two Stage Water Scrubber
2	Reaction	HCl	11.00	Alkali Scrubber
3	Reactor	SO ₂	11.00	Alkali Scrubber
4	Common stack of Reactor & Condensers	SO ₂ VOC	11.00	Two Stage Alkali Scrubber
5	Spray Dryer with hot air generator	PM	30.00	Inbuilt Cyclone Separator & two stage

water scrubber

E-4 Fugitive emission details with its mitigation measures.**Following measures will be adopted to prevent and control fugitive emission.**

- Airborne dust at all transfer operations / points will be controlled by spraying water or providing enclosures.
- Raw materials loading and unloading will be done in covered area.
- Regular maintenance of valves, pumps, flanges, joints and other equipment will be done to prevent leakages and thus minimizing the fugitive emission of VOCs.
- Entire process will be carried out in the closed reactors with proper maintenance of pressure and temperature.
- Periodic monitoring of work area will be carried out to check the fugitive emission.
- Minimum number of flanges, joints and valves will be provided in pipelines.
- Adequate ventilation will be provided.
- To control fugitive emission from process / reaction, all reactor condensers shall be connected to a scrubber to minimize loss of solvents / fugitive emission in to the atmosphere.

Comments for E2, E3 & E4:

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

F Solvent management, VOC emissions etc.

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

Solvent Recovery Table

Name of Solvent	Consumption MT / Month	Recovery MT/Month	Recovery %	Loss %
Methanol	870	850	97.70	2.30
MDC	690	670	97.10	2.90
Acetone	330	322	97.57	2.43
IPA	360	352	97.77	2.23

F-2 VOC emission sources and its mitigation measures

- Sources of fugitive emissions from the proposed project will be :
- Storage area of raw materials and finished goods.
 - Manufacturing process

List of the sources of probable leakage is as follows :

- Valves / Flanges
- Pump glands handling above chemicals
- Pump seals / Compressor seals
- Pressure relief devices
- Process drains
- LPDs (Low Point Drains)
- HPVs (High Point Vents)

Measures for achieving maximum solvent recovery and minimize VOC generation:

- The entire manufacturing activities & distillation process will be carried out in a totally closed system.
- 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.
- VOC detectors will be installed at various places to identify any fugitive emissions.

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.

F-3 | LDAR proposed:

Methodology to be adopted during LDAR study :

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

Sources of Leakages & VOC Generation :

- Connectors such as flanges and fittings are components used to join piping and process equipments together. Gaskets and blinds are usually installed between flanges.
- Sampling connections are utilized to obtain samples from within a process.
- Compressors are designed to increase the pressure of a fluid and provide motive force. They can have rotary or reciprocating designs.
- Pressure relief devices are safety devices designed to protect equipment from exceeding the maximum allowable working pressure. Pressure relief valves and rupture disks are examples of pressure relief devices.
- Leaks from pumps typically occur at the seal.
- Leaks from valves usually occur at the stem or gland area of the valve body and are commonly caused by a failure of the valve packing or O-ring.
- Leaks from connectors are commonly caused from gasket failure and improper bolts on flanges.
- Leaks from sampling connections usually occur at the outlet of the sampling valve when the sampling line is purged to obtain the sample.
- Leaks from compressors most often occur from the seals.
- Leaks from pressure relief valves can occur if the valve is not seated properly, operating too close to the set point, or if the seal is worn or damaged. Leaks from rupture disks can occur around the disk gasket if not properly installed.
- Leaks from open-ended lines occur at the point of the line open to the atmosphere and are usually controlled by using caps, plugs, and flanges. Leaks can also be caused by the incorrect implementation of the block and bleed procedure.

Frequency of monitoring of leaks

Sr. No.	Component	Frequency of Monitoring	Repair Schedule
1	Valves / Flanges	Quarterly (semi-annual after two consecutive periods with < 2 % leaks and annual after 5 periods with < 2 % leaks)	Repair will be started within 5 working days and shall be completed within 15 working days after detection of leak for general hydrocarbons.
2	Pump seals	Quarterly	
3	Compressor seals	Quarterly	
4	Pressure relief devices	Weekly	
5	Pressure relief devices (after venting)	Within 24 hours	
6	Process drains	Quarterly	
7	Components that are difficult to monitor	Annually	
8	Pump seals with visible liquid dripping	Weekly	Immediately
9	Any component with visible leaks	Weekly	Immediately
10	Any component after repair / replacement	Within a week	--

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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**

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	ETPsludge	ETP	35.3	120 MT (on wet basis)	Collection, storage, transport and disposal to GPCB registered TSDF.
2	Spray Dryer Salt	ZLD Plant	35.3	360 MT	Collection, storage, transport and disposal to GPCB registered TSDF.
3	Discarded empty containers	RM Storage / Handling	33.1	6000 Nos.	Collection, storage and disposal by sell to authorized vendor / common decontamination facility
4	Used oil	Plant machinery	5.1	0.5 MT	Collection, storage, transport and disposal by sell to registered reprocess.
5	Scrub Liquor	Scrubber	35.1	180 MT	Collection & treatment in in-house ZLD plant.
6	Spent Solvent	Mfg. process	28.6	27000 MT	Collection, Storage, distillation and reuse in plant premises.
7	Spent Solvent Residue / Distillation Residue	Mfg. process	36.1	675 MT	Collection, storage, transportation and disposal for co-processing / CHWIF.
8	Spent Carbon & Hyflow	Mfg. process	28.3	210 MT	Collection, Storage, Transportati

					onand disposalforco-processing / CHWIF.
9	Process waste	Mfg. process	28.1	260 MT	Collection, Storage, Transportati onand disposalforco-processing / CHWIF.
-					
<p>Comments:</p> <ul style="list-style-type: none"> ➤ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement. ➤ The project proponent has to obtain membership of TSDf site & CHWIF before obtaining CTO of GPCB. 					
G-2	Non- Hazardous waste management matrix				
<p style="text-align: center;">✓ Fly Ash generation will be 50 MTPA.</p> <p>Comments:</p> <ul style="list-style-type: none"> ➤ Management of fly ash shall be as per the Fly ash Notification 2009 & its amendment time to time and it shall be ensured that there is 100% utilization of fly ash to be generated from the unit. 					
H	SAFETY details				
H-1	Details regarding storage of Hazardous chemicals				
-					
<p><u>Brief note on storage of Hazardous chemicals in Tanks</u> Not Applicable</p> <p><u>Brief note on storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.</u></p> <ul style="list-style-type: none"> ➤ Storage : Keep in a cool, dry, dark location in a tightly sealed container. Keep away from incompatible materials, ignition sources and untrained individuals. Secure and label area. Protect containers / cylinders from physical damage. ➤ Handling : Avoid direct physical contact. Use appropriate, approved safety equipment. Untrained individuals should not handle such chemicals or their container. ➤ Transfer : Solvent dispensing will be carried out with closed loop system and earthing precautions. ➤ Protection : Wear appropriate protective gloves, clothing and goggles. ➤ Small spill / leaks : Keep material out of water sources and sewer. Attempt to stop leak if without undue personnel hazard. Use water spray to knock-down vapors. Vapour knockdown water is corrosive or toxic and should be dyked for 					

containment. Land spill : Dig a pit, pond, lagoon, holding area to contain liquid or solid material. Dike surface flow using soil, sand bags, foamed polyurethane, or foamed concrete. Absorb bulk liquid with fly ash or cement powder. Neutralize with vinegar or other dilute acid. Water Spill : Neutralize with dilute acid. Use mechanical dredges or lifts to remove immobilized masses of pollutants and precipitates.

- **Firefighting** : Wear positive pressure breathing apparatus and full protective clothing. Small fires : use dry chemical or carbon dioxide. Large fires : water spray, fog or foam. Apply water gently to the surface. Do not get water inside container. Move container from fire area if you can do it without risk. Stay away from ends of tanks. Cool containers that are exposed to flames with water from the side until well after the fire is out. Isolate area until gas has dispersed.

-
Safety details....

Type of Hazardous Chemicals	Safety measures
Flammable	Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges. Containers will be kept in tightly closed dry, cool and well-ventilated place and kept away from heat and sources of ignition.
Toxic & Corrosive	Wear personal protective equipment / face protection. Do not get in eyes, on skin, or on clothing. Do not breathe dust. Do not ingest. If swallowed, then seek immediate medical assistance. Do not allow contact with water. Handle under an inert atmosphere. Containers will be kept in tightly closed dry, cool and well-ventilated place. They will not be stored in metal containers.

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

Comments:

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

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

--	
Type of Process	Safety measures including Automation
Hydrogenation	Safety Precaution of Hydrogen:- <ul style="list-style-type: none"> ➤ FL P type area will be provided. ➤ Total enclosed process system. ➤ Instrument & Plant Air System. ➤ Nitrogen blanketing in Hydrogenation reactor. ➤ Safety valve and Ruptured disc provided on reactor. ➤ Cooling Chilling and power alternative arrangement have been made on reactor. ➤ Hydrogen and Nitrogen Cylinder bank away from the autoclave reactor. ➤ PRV station with shutoff valve, safety valve provision will be made for hydrogenation reactions safety. ➤ Before Hydrogen Gas charging into 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 roof will be provided to 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.
--	
H-3	Details of Fire Load Calculation
Total Plot Area:	2081.12 m ²
Area utilized for plant activity:	776 m ²
Area utilized for Hazardous Chemicals Storage:	220 m ²
Number of Floors:	G+2 Floors in production Building
Water requirement for firefighting in KLD:	4980 L
Water storage tank provided for firefighting in KLD:	50 KL
Details of Hydrant Pumps:	Main Pump: 137KL/hr. Jockey Pump: 100 L/min. ???
Nearest Fire Station :	ONGC Fire station, Saij / Kalol Town Fire station
Applicability of Off Site Emergency Plan:	Not Applicable
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 50 KL. SEAC found it as per the requirement. 	
H-4	Details of Fire NOC/Certificate:

Shall be obtained after receipt of EC.

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

Number of permanent Employee:	50
Number of Contractual person/Labour:	Nil
Area provided for OHC:	15 m ²
Number of First Aid Boxes:	1 no. in each department
Nearest General Hospital:	Kalol Civil Hospital
Name of Antidotes to be store in plant:	Adequate antidotes will be stored within premises

Comments

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

Details of Environmental Management Plan (EMP)

As below:

Sr. No	Unit	Details	Capital Cost (Rs. In Crores)	Total Recurring Cost (Rs. In Crores)
1	Waste Water	ETP + RO Plant + Spray Dryer	0.95	0.735
2	Air	Scrubbers attached to process vent + Cyclone & Bag filter of boiler	0.20	0.08
3	Hazardous Management	TSDF disposal	0.00	0.10
		CHWIF disposal	0.00	0.00
		Co-processing disposal	0.00	0.10
4	Fire & Safety	Installation of fire system and other safety measures	0.20	0.03
5	Green Belt Development	33 % of plot area will be allocated	0.10	0.01
6	Occupational Health	Occupational health and mitigation measure	0.05	0.005
7	Noise Control	--	0.00	0.00
8	CER Funds	Health care & sustainable develop	0.10	0.00
9	AWH Monitoring	Monitoring of air, water & wastewater, soil, hazardous waste etc.	0.00	0.04

		Total	1.60	1.10											
<u>Comments:</u>															
<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>															
<p>11) <u>After detail deliberation, Committee decided to consider the proposal only after satisfactory submission of the following details.</u></p>															
<p>1) Revised Layout plan with clear dimensions and showing location of OHC in it.</p> <p>2) Inclusion of RO water purchased from market in process water requirement in the table of water consumption instead of showing it separately.</p> <p>3) Lease agreement with 7 years validity instead of 5 years.</p> <p>4) Letter from GIDC, Kalol for supply of water requirement.</p> <p>5) Revised CER activities and make them relevant with local needs.</p> <p>6) Revised fire water reservoir capacity to 100 KL instead of 50 KL.</p> <p>7) Details of fire hydrant, foam trolley etc.</p> <p>8) List of all solvents / raw materials to be stored in drums with capacity along with compatibility chart.</p>															
04	SIA/GJ/IND3/248850/2021	M/s. Vaikunth Developers Survey no. 1808, Pamol Kharod Road, Sim – Kharod, Vijapur Mehsana , Gujarat Pin – 382870			EC										
<p>Category of the unit: 5 (f)</p> <p>Project status: New</p> <p>1) Details of Application:</p> <table border="1"> <tr> <td>1.1. Type of application:</td> <td>EC-NEW</td> </tr> <tr> <td>1.2. Proposal no.</td> <td>SIA/GJ/IND3/248850/2021</td> </tr> <tr> <td>1.3. Category of Project :</td> <td>5 (f) – B2</td> </tr> <tr> <td>1.4. Date of application :</td> <td>24.02.2021</td> </tr> <tr> <td>1.5. Documents Submitted by Project Proponent(PP)</td> <td>Form -1, Pre-feasibility Report, EMP</td> </tr> </table>						1.1. Type of application:	EC-NEW	1.2. Proposal no.	SIA/GJ/IND3/248850/2021	1.3. Category of Project :	5 (f) – B2	1.4. Date of application :	24.02.2021	1.5. Documents Submitted by Project Proponent(PP)	Form -1, Pre-feasibility Report, EMP
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1.4. Date of application :	24.02.2021														
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 Vaikunth Developers
1.8. SEAC Meeting No. and Date:	389 th meeting dated 28.03.2022
1.9. Compliance of Existing EC & CCA	Not Applicable (if New)

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

Product Table

Sr. No.	Name of the Products	CAS no.	Quantity MT/Month	*End-use of products
1	Nicotine Sulphate	65-30-5	7.8	Used in manufacturing of Chewing gum.

- 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 28.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) PP submitted satellite map showing that there is no any water bodies, villages, School, monuments etc. within 500 m radius of the project site. Aerial distance of nearest habitat of village Kharod is @ 1.36 Km. PP also submitted that there are no Eco sensitive zones, wild life sanctuaries within the 10 km area from the boundary of the project site.
- 8) Committee found presentation and submission of project proponent satisfactory.
- 9) PP submitted an undertaking ensuring proposed product profile is in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API) as category B2 projects. Undertaking as proposal of said product are eligible to consider under B2 category as per the notification of MoEF&CC dated 27.03.2020
- 10) Since, the unit falls in B2 category as per the MoEF&CC's amended EIA Notification vide S.O. 1223(E) dated 27.03.2020, the public consultation is not applicable as per paragraph 7(i) III (i) (e) of the Environment Impact Assessment Notification-2006.

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

Sr. no.	Particulars	Details														
A-1	Project cost															
Total cost of Proposed Project (Rs. in Crores):																
<table border="1"> <tr> <td>Total Project</td> </tr> <tr> <td>Rs. 0.9 Crores</td> </tr> </table>			Total Project	Rs. 0.9 Crores												
Total Project																
Rs. 0.9 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>2.45</td> </tr> <tr> <td>Building</td> <td>3.00</td> </tr> <tr> <td>Machinery</td> <td>3.66</td> </tr> <tr> <td>Env. & Safety</td> <td>0</td> </tr> <tr> <td>Miscellaneous</td> <td>0</td> </tr> <tr> <td>Total</td> <td>9.11</td> </tr> </tbody> </table>			Details	Project Cost (Rs. In Crores)	Land	2.45	Building	3.00	Machinery	3.66	Env. & Safety	0	Miscellaneous	0	Total	9.11
Details	Project Cost (Rs. In Crores)															
Land	2.45															
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Env. & Safety	0															
Miscellaneous	0															
Total	9.11															
-																
A-2	Details of CER -															
PP shall carry out CER activities as below: ✓ Drinking water facility (RO system) in Kharod Village.																
B	Land / Plot ownership details:															
For Land Possession Documents, They have submitted following documents: 1) Copy of 7-12 2) Copy of NA permission 3) Copy of sale deed 4) Copy of Partnership Deed																
Here, They have enclosed copy above mentioned documents for Survey no. 1808, Pamol Kharod Road, Sim – Kharod, Vijapur Mehsana , Gujarat Pin – 382870. in Annexure-1.																
B-1	Plot area															
<table border="1"> <tr> <td>Total Plot area</td> </tr> <tr> <td>5415.0 Sq. m.</td> </tr> </table>			Total Plot area	5415.0 Sq. m.												
Total Plot area																
5415.0 Sq. m.																
-																
B-2	Area adequacy															
Area Adequacy table:																
Sr. No.	Area name	Area in Sq. M. Ground Floor	Percentage %													
1	Production Area	449.01	8.29													
2	Finish Good Storage Area	135	2.49													
3	Solid Raw Material Storage Area	268.56	4.96													

4	UG Nicotine Storage Area	169.30	3.13
5	Solvent Storage Area	70.56	1.30
6	Solid Waste Storage Area	69.06	1.28
7	Office & Lab	212.43	3.92
8	Occupational Health Centre (OHC)	15	0.28
9	Security Cabin	10.04	0.19
10	Greenbelt area	2000	36.93
11	Road	1889.35	34.89
TOTAL		5415	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	2000 inside premises
% of total area	36.93%

Comments:

The condition shall be given that -

- The PP shall develop green belt (2000 Sq. m i.e. 36.93 % of the total plot area) as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

C Employment

Employment generation

	Total
	10

-

D WATER

D-1 Source of Water Supply

- Source of water supply shall be Tanker Water supply.

Comments:

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

D-2 Water consumption (KLD)

-

Category	Quantity KLD
(D) Domestic	1.0
(E) Gardening	1.0
(F) Industrial	
Process	2.5
Washing	0
Boiler	0
Cooling	0
Others (Scrubber)	0
Industrial Total	2.5
Grand Total (A+B+C)	4.5

-

Comments:

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

D-3 Waste water generation (KLD)

-

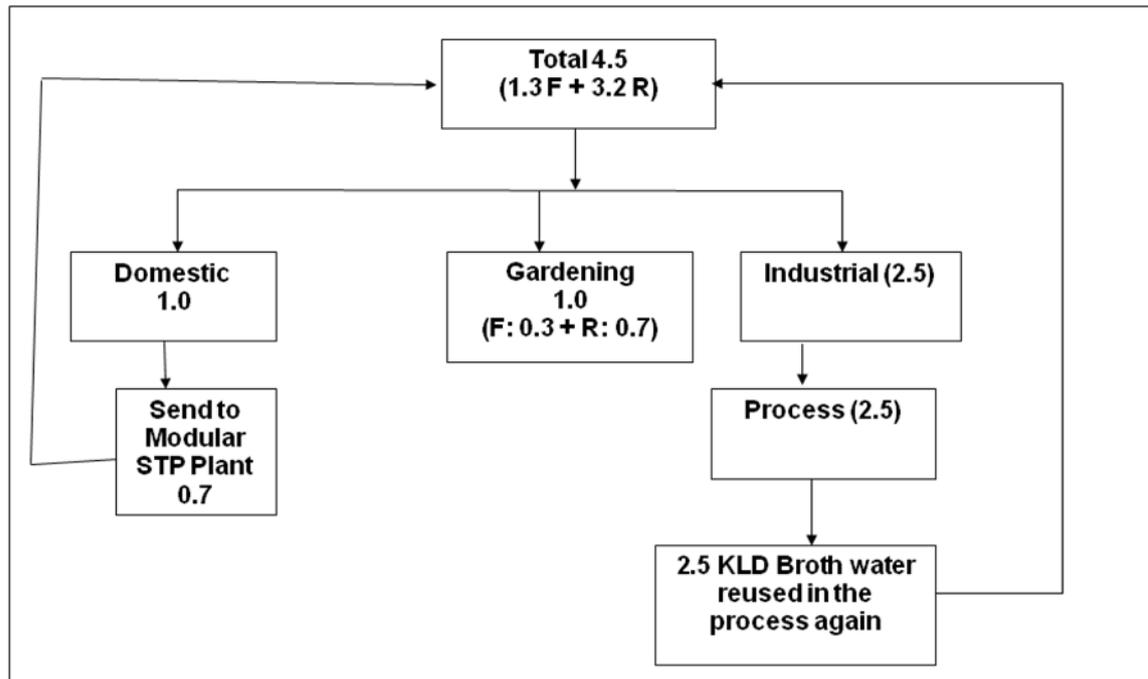
Category	Waste water KLD
5. Domestic	0.7
6. Industrial	
Process	2.5
Washing	0
Boiler	0
Cooling	0
Others (Scrubber)	0
Total Industrial waste water	2.5

-

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)		
<p>0.7 KLD Domestic Waste Water will be treated in STP & treated wastewater will 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 0.7 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	2.5	2.5 KLD process effluent shall be directly reused in next batch of product manufacturing.
	2	-	-
	Total	2.5	2.5 KLD process effluent shall be directly reused in next batch of product manufacturing.
	<p>Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)</p> <p>They are directly reuse process wastewater in next batch of product manufacturing.</p>		
D-5b	Simplified water balance diagram		



D-5c		Summary	
	Summary of water requirement	Quantity KLD	Remarks
	Total water requirement for the project (A)	4.5	
	Quantity to be recycled (B)	3.2	
	Total fresh water requirement (C)	1.3	
	Ensure Total water requirement = Recycled water + Fresh water i.e. A = B + C		

Comments:

- Total water requirement for the project shall not exceed 2.5 KLD. Unit shall reuse 2.5 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 1.3 KLD and it shall be met through Tanker water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
- Management of Industrial effluent shall be as under:
 - ✓ 2.5 KLD process effluent shall be directly reused in next batch of product manufacturing.
 - ✓ Complete Zero Liquid Discharge [ZLD] status shall be maintained all the time and there shall be no drainage connection from the premises.
- Unit shall provide 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 :200 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)
8.	NA	NA	NA	NA	PM, SO ₂ , NO _x	NA

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	NA	NA	NA	NA

E-4 Fugitive emission details with its mitigation measures.

- Not Applicable

Comments for E2, E3 & E4:

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

F Solvent management, VOC emissions etc.

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

Solvent Recovery Table

Sr. No.	Product Name	Production MT/mon	Solvent Name	Quantity MT/MT					Solvent Recover %
				Solvent Consumption	Spent Solvent	Recovery	Loss	Distillation Residue	

		th		n					
1.	Nicotine Sulphate	7.8	Kerosene	2.32	2.27	2.27	0.05	---	97.8
F-2 VOC emission sources and its mitigation measures									
Measures for achieving maximum solvent recovery and minimize VOC generation:									
<ul style="list-style-type: none"> • The entire manufacturing activities & distillation process will be carried out in a totally closed system. • Maintenance of the pipeline and valves & fittings will be carried out regularly to avoid any leakages. • Reactor will be connected with three numbers of condensers where in the first condenser chilled water will be used whereas in second and third condenser brine solution will be used as media and it will be also equipped with vacuum system as per requirement. • The condenser will be provided with sufficient HTA and residence time to achieve more than 90% recovery. • All the Flange joints of the pipe lines which carry solvents will be covered with flange guards. • VOC detectors will be installed at various places to identify any fugitive emissions. • Minimum number of flanges, joints and valves in pipelines shall be provided. 									
F-3 LDAR proposed:									
<p>Leak Definition</p> <ul style="list-style-type: none"> • A leak is detected whenever the measured concentration exceeds the threshold standard (i.e., leak definition) for the applicable regulation. • Leak definitions vary by regulation, component type, service (e.g., light liquid, heavy liquid, gas/vapor), and monitoring interval. • Many equipment leak regulations also define a leak based on visual inspections and observations (such as fluids dripping, spraying, misting or clouding from or around components), sound (such as hissing), and smell. <p>Following steps shall be followed for effective implementation of LDAR Program:</p> <ol style="list-style-type: none"> 8. Process Controls 9. Emissions control program 10. Selection of appropriate method for leak detection 11. Scheduling and checklist for Leak Detection 12. Methods for rectification of identified leaks 13. Frequency of Monitoring 14. Record keeping of LDAR Program 									
Comments:									
➤ 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
20.	Used Oil	Lubrication of Plant Machinery	5.1	5.0 Lit/ Year	Collection, Storage, Transportation, disposal by selling to registered refiners/ used as lubricants in plant & machineries.
21.	Discarded containers (Bag, Barrel, Drum)	Production/ Raw Material Section	33.1	1.0 MT/yr	Collection, storage, decontamination. Transportation & disposal by selling to authorized recycler.
22.	Process Waste (Organic Manure)	From Manufacturing of Nicotine Sulphate	4.1	2106 MT/yr	Collection, Storage, Transportation, and selling to the agro-chemical manufacturing industries or farmers.

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
<p style="text-align: center;">✓ STP sludge generation will be 2.0 MTPA</p> <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><u>Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.</u></p> <ul style="list-style-type: none"> ➤ Drums will be stored at designated location or secured in a safety storage cabinet. ➤ Proper ventilation will be provided in Godown. ➤ Proper label and identification board /stickers will be provided in the storage area. ➤ Drum handling trolley / stackers/fork lift will be used for drum handling. ➤ Separate dispensing room with local exhaust and static earthing provision will be made. ➤ Materials will be transferred by pumping through pipeline or by vacuum, from drums. ➤ Drums for flammable liquids will have proper closures that can withstand the expected handling conditions without leaking. ➤ FLP type light fittings will be provided. <p>Safety details of Hazardous Chemicals:</p>	
Type of Hazardous Chemicals	Safety measures
Corrosive	<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.
Flammable	<ul style="list-style-type: none"> - Materials will be stored as per its compatibility study and separate area will be available for flammable, corrosive and toxic chemical drums storage. - Smoking and other spark, flame generating item will be banned from this area. - NFPA labels will be provided on drums for hazard identification of the chemicals - Safety shower and eyewash shower will be provided near storage area and plant area. - Flame proof electrical equipment's provided in process and storage area.

- Onsite emergency will be prepared as per GJR 68 J (9) and train all team members for emergency situation as per risk assessment scenarios outcome.

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 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:

NA

H-3 | Details of Fire Load Calculation

Total Plot Area:	5415 m2
Area utilized for plant activity:	449.01 m2
Area utilized for Hazardous Chemicals Storage:	508.42 m2
Number of Floors:	G+1
Water requirement for firefighting in KLD:	50
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 :	Mehsana
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:

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:	0
Area provided for OHC:	15 m ²
Number of First Aid Boxes:	5 nos
Nearest General Hospital:	Mehsana
Name of Antidotes to be store in plant:	NA

Comments

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

Details of Environmental Management Plan (EMP)

As below:

S r. No	Unit	Detail	Capital Cost (Rs. In Lacs)	Operating Cost (Rs. In Lacs)	Maintenace Cost (Rs. In Lacs)	Total Recurring Cost (Rs. In Lacs)
1	Waste Water	Installation of Storage tank for Wastewater	1.0	0.0	0.0	0.0
2	Hazardous Management	Storage area	1.0	0.0	0.0	0.0
3	Fire & Safety	Fire Hydrant System & Fire Extinguishers	8.0	0	0.25	0.5
		Provision of safety equipment	2.0	0	0.25	
4	AWH Monitoring	Monitoring by authorized agency	2.0	0.5	0.5	1.0
5	Green Belt Development	For develop gardening area & trees planted	5.0	1.0	1.0	1.0
6	Occupational Health	OHC & health checkup of workers	3.0	0.5	0.5	1.0
7	CER Activity	CER Activity will do in Kharod Villages.	0.0	0.0	1.82	1.82
TOTAL			22	2.0	4.32	6.32

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

6. Safety & Health:

- a) Unit shall obtain all required permissions from the Narcotics Control Bureau for manufacturing, storage and handling of Acetic Anhydride & any such chemicals
- b) PP shall obtain PESO permission for the storage and handling of hazardous chemicals.
- c) PP shall provide Occupational Health Centre (OHC) as per the provisions under the Gujarat Factories Rule 68-U.
- d) PP shall obtain fire safety certificate / Fire No-Objection certificate (NOC) from the concern authority as per the prevailing Rules / Gujarat Fire Prevention and Life Safety Measures Act, 2016.
- e) Unit shall adopt functional operations/process automation system including emergency response to eliminate risk associated with the hazardous processes.
- f) PP shall carry out mock drill within the premises as per the prevailing guidelines of safety and display proper evacuation plan in the manufacturing area in case of any emergency or accident.

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

WATER

7. Total water requirement for the project shall not exceed 4.5 KLD. Unit shall reuse 3.2 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 1.3 KLD and it shall be met through Tanker water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.
8. The industrial effluent generation from the project shall not exceed 2.5 KLD.
9. Management of Industrial effluent shall be as under:
 - ✓ 2.5 KLD process effluent shall be directly reused in next batch of product manufacturing.
 - ✓ Complete Zero Liquid Discharge [ZLD] status shall be maintained all the time and there shall be no drainage connection from the premises.
10. Domestic wastewater generation shall not exceed 0.7 KL/day for proposed project and it shall be treated in STP. It shall not be disposed off into soak pit. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
11. During monsoon season when treated sewage may not be required for the plantation / Gardening / Green belt purpose, it shall be stored within premises. There shall be no discharge of waste water outside the premises in any case.
12. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water

during rainy days.

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

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

AIR:

15. There shall be no use of any fuel for the proposed project.

16. There shall be no process gas emission from the proposed manufacturing activities.

17. 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.

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. 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.

21. 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:

22. All the hazardous/ solid waste management shall be taken care as per the point no. F-1 as mentioned above.
23. 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.
24. 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.
25. The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.
26. STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.
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 [2000 m² i.e. 36.93 % 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 entire activities [Drinking water facility in Kharod 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.

30. 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:

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 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.
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

05	SIA/GJ/IND3/249149/2021	M/s. Nuevo Finechem Plot No. 3534, Phase-IV, GIDC Chhatral, Ta. Kalol, Dist. Gandhinagar, Gujarat-382729.	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/IND3/249149/2021
1.3. Category of Project :	5 (f) – B2
1.4. Date of application :	24.02.2021
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 Nuevo Finechem
1.8. SEAC Meeting No. and Date:	389 th meeting dated 28.03.2022
1.9. Compliance of Existing EC & CCA	Not Applicable (if New)

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

Product Table

Sr. No.	Name of the Products	CAS no.	Quantity MT/Month	*End-use of products
1.	N – Propyl Bromide	106-94-5	100	API - Valproic Acid, Ropivacaine hydrochloride Anti epilepsy Local Anesthetic
2.	N – Butyl Bromide	109-65-9		API - Butylscopolammonium Bromide, Bupivacaine Antispasmodic drug Local Anesthetic
3.	ISO Propyl Bromide	75-26-3		API – Cyclopentolate, lpriflavone Antispasmodic, Inhibit Bone Resorption
4.	ISO Butyl Bromide	78-77-3		API – Terbinafine Anti Fungal
5.	Ethyl Bromide	74-96-4	15	API – Barbitol, Norfloxacin Hypnotic, Antibiotic
6.	Ethylene Di Bromide	106-93-4	100	API – Tamsulosin Improve urinate in Men with enlarged prostate
7.	Bromo Benzene	108-86-1	150	API – Pridinol, Azacyclonol Anti parkinsonian,

				Anxiolytic
8.	1,4 Di Bromo Benzene	106-37-6	10	Hypnotic
9.	2,3-Dichloro-1,4-naphthoquinone (DICHLONE)	117-80-6	50	API – Atovaquone, Phenyl Butazone Antimicrobial, Non-steroidal anti-inflammatory drug
10.	Chloranil	118-75-2	40	Treatment of arthritis and asthma
Total			465	

- 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 28.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) Committee deliberated on Product profile and found that the proposed products are Excipients and not in the line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 in respect of Active Pharmaceutical Ingredients (API).
- 8) Upon asking, PP as well as their technical expert could not reply satisfactorily. Committee asked to submit clarification in this regard. However, PP has not submitted any clarification.
- 9) Committee noted that the proposed products are not in line with MoEF&CC's Notification vide S.O. 1223 (E) dated 27/03/2020 and reply is not submitted through email.

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/IND3/64574/2018	M/s. Grasim Industries Ltd. (Chemical Division) Epoxy Plant Plot No.-1, GIDC-Vilayat, Taluka-Vagra, District: Bharuch, State: Gujarat Pincode: 392 140--	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/IND3/64574/2018
1.3. Category of Project :	5 (f) – B1
1.4. Date of application :	11.02.2022
1.5. Documents Submitted by Project Proponent(PP)	EIA report, Form-2, EMP
1.6. TOR No. & Date :	SIA/GJ/160109/2021, Date: 03 September 2021.
1.7. Date of Public hearing	Not Applicable as the project is with GIDC.
1.8. Technical expert / Environmental Consultant :	M/s.Anand Environmental Consultants Pvt. Ltd.
1.9. SEAC Meeting No. and Date:	389 th meeting dated 28.03.2022
1.10. Compliance of Existing EC & CCA	<p>Environmental Clearance granted vide letter nos.</p> <ol style="list-style-type: none"> 1. SEIAA/GUJ/EC/5(f)/93/2012, dated: 22/03/2012. 2. SEIAA/GUJ/EC/5(f)/42152/2012, dated: 19/08/2020. <p>Certified Compliance Report has been obtained vide letter no. J-11/37-2021-IROG NR, dated: 19/01/2022.</p> <p>Consent order no.: AWH-98131, Date of Validity: 01/12/2023 Existing Inorganic Products which will be dropped with this EC.</p> <p>Self-compliance report submitted with application. Not Applicable (if New)</p>

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	Quantity (MT/Month)			CAS No.	End-use of the products
		Existing	Proposed	Total		
Proposed Products						
1.	Polyamide Resin	--	1666.67	1666.67	63428-84-2	clothing and carpets, fishing line, electrical connectors, gears, guitar picks and strings and medical implants
2.	Polyester Resin	--	2500	2500	113669-95-7	Homebuilding or construction materials, Used in aircraft, vehicles, and the marine industry, Packaging material, Used in appliances, In the manufacture of furniture, especially outdoor items, Composite materials, for example, fiberglass resin
Existing Products						
Epichlorohydrin (ECH)						
3.	Epichlorohydrin	8333.33	--	8333.33	78-93-3	Epoxy Resins, Synthetic Glycerine Water Treatment Chemicals, Pharmaceuticals
4.	Refined Glycerin (75%)	3333.33	--	3333.33	56-81-5	Glycerine is being used in Pharmaceuticals applications
Chlorinated Poly Vinyl Chloride (CPVC)						
5.	CPVC	8333.33	--	8333.33	68648-82-8	Hydronic piping and distribution (radiators, fan coils, etc.)
Epoxy Plant						
6.	Liquid Epoxy Resin	16812.25	--	16812.25	25068-38-6	High solids and solvent free coatings, Adhesives, Civil engineering and construction industry, Automotive coatings, Intermediate for can & coil coatings, Marine and Industrial protective coatings, Tooling, potting, casting and moulding compounds, Composites Stabilizer in PVC
7.	Formulated Resin				25068-38-6	
8.	Power Coating				25036-25-3	
9.	Can Coating Resin				25036-25-3	
10.	Solution Cut Resins				1330-20-7	

11.	Hardeners	2000	--	2000	2855-13-2	High Chemical resistance flooring/grouting In adhesive,Laminations, Marine Coating, Patch repair, Off shore primers/top coatings. Chemical resistance mortar,Concrete Impregnation,Crack injection system
12.	Reactive diluents	1029.16	--	1029.16	2425-79-8	Filament winding, laminating, Vacuum pressure impregnation,Civil engineering Electronic encapsulations
TOTAL		39841.4	4166.67	44008.07	---	

- 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 28.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) 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 January-2019 to March-2019. Ambient Air Quality monitoring was carried out PM10, PM2.5, SOx, NOx, HCl, NH3 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 will remain within the National Ambient Air Quality Standards (NAAQS).
- 8) Risk assessment including prediction of the worst-case scenario and maximum credible accident scenarios has been carried out. The detailed proposed safeguard measures including On-Site / Off-Site Emergency Plan has been covered in the RA report.
- 9) Earlier PP obtained EC vide letter no. .SEIAA/GUJ/EC/5(f)/93/2012, dated: 22/03/2012 and

SEIAA/GUJ/EC/5(f)/42152/2019, dated: 19/08/2020. 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.

10) Committee noted the following:

- ✓ The proposed expansion project is to be set up within the existing industrial premises.
- ✓ the company is proposes to add two new products namely Polyamide Resin and Polyester Resin
- ✓ They have been granted 02 Environmental Clearance (EC) by SEIAA vide letter no.SIA/GUJ/EC/5(f)/93/2012, dated: 22/03/2012 and SEIAA/GUJ/EC/5(f)/42152/2012, dated: 19/08/2020.
- ✓ Certified Compliance Report has been obtained vide letter no.J-11/37-2021-IROG NR, dated: 19/01/2022 for the EC issued vide letter no.: SEIAA/GUJ/EC/5(f)/42152/2012, dated: 19/08/2020.
- ✓ Half yearly compliance report has been submitted to the concerned authority on 01.12.2021
- ✓ They have a valid CC&A AWH-98131, dated: 25/12/2018 issued vide letter no.: GPCB/BRCH-B/CCA-98(3)/ID-38506/429676, dated: 29/01/2019.
- ✓ PP represented their submission to partly complied condition as below:

Sr. no.	EC Condition no.	Description	MoEF&CC Comments	Action Plan/Compliance Comments
1.	21	Regular monitoring of ground level concentration of HCL, SO ₂ , NO _x , ECH, Toluene, Xylene, PM ₁₀ , and Pm _{2.5} 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 Gujarat pollution control board. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with GPCB.	In view of the information furnished by the PP and the monitoring results showing that all the parameters are well within the stipulated norms, the stipulated condition is considered partly complied w.r.t. said site visit till submission of test reports related to Xylene and toluene. PARTLY COMPLIED	Previously the monitoring of Toluene, Xylene and other VOCs was being carried out by VOC portable Gas detector internally at workplaces and ambient locations. Now we have added Toluene and Xylene as 2 additional parameters in the prescribed parameters for AAQM and getting these tested by NABL approved and GPCB approved Third Party Agency. All the results are found within prescribed limit. We have submitted our Compliance comments and Test Reports to MoEF Office also. Last 2 Test Reports showing results are attached for reference please.

The proposed expansion would be carried out in the existing open area which is already been included of 178511 m². The total area of proposed expansion will be 3536.7m².

B-2 Area adequacy

Area Adequacy table:

Description	Proposed Polyamide Resin and Polyester Resin Plant Area (m ²)				
	Ground Floor Area	First Floor Area	Second Floor Area	Third Floor Area	Fourth Floor Area
Manufacturing Process Area	648	648	648	648	648
Storage for Raw Materials	752.7	--	--	--	--
Storage for Products	441	--	--	--	--
Storage for Fuel	Nil	--	--	--	--
Storage for Water	Nil	--	--	--	--
Storage for Hazardous/Solid Waste	815	--	--	--	--
Storage for Hazardous Chemical	475	--	--	--	--
Effluent Treatment Plant	Nil	--	--	--	--
Utilities	405	--	--	--	--
Approach Road(s)	Nil	--	--	--	--
Other (Substation & Pipe Rack)	Nil	--	--	--	--
a) Office	Nil	--	--	--	--
[Administration + Security]		--	--	--	--
b) Parking	Nil	--	--	--	--
c) Canteen	Nil	--	--	--	--
d) Open land area	Nil	--	--	--	--
Greenbelt (33% of the total plot area)	33% of the total plant area of 1,78,511 m ² i.e. 58,908.63 m ² will be used for green belt development				
Total Area (m²)	3,536.7	648	648	648	648

- The said plot area of 3536.7 sq.m. is adequate for proposed manufacturing activities including storage of raw materials & products as well as for utilities and other on-site facilities as shown in the layout plan

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	58,908.63	0.0	58,908.63
% of total area	33	0	33

Comments:

The condition shall be given that -

- The PP shall develop green belt (58908.63 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
730	09	739

-

D WATER**D-1 Source of Water Supply**

- Bharuch GIDC Water supply

Comments:

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

D-2 Water consumption (KLD)

-

Sr. No	Description	Water Consumption Quantity (kl/day)		
		Existing as per EC issued vide letter no.: SEIAA/GUJ/EC/5(f)/947/2020, dated: 19/08/2020 [a]	Proposed (additional) [b]	Total [c=a+b]
a.	Domestic	127.6	0.45	128.05
b.	Gardening	130	0	130
c.	Industrial			

Process	3516	0	3516
Washing	100	5*	105
Boiler	0	0	0
Cooling (makeup)	1870	10	1880
Sub-total (c)	5486	15	5501
TOTAL (a+b+c)	5743.6	15.45	5759.05

-this is the water which is likely to be used for floor washing and occasional reactor washing.

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 Quantity (kl/day)		
		Existing as per EC issued vide letter no.: SEIAA/GUJ/EC/5(f)/947/2020, dated: 19/08/2020 [a]	Proposed (additional) [b]	Total [c=a+b]
a.	Domestic	109	0.36	109.36
b.	Industrial			
	Process	1213	17.3**	1230.3
	Washing	100	4	105

Boiler (blow-down)	0	0	0
Cooling	734	1	734
Others (reaction water from CPVC & ECH plant)	30	0	30
TOTAL (a+b)	2186	22.66	2208.66

This being the water generated due to the reaction which will be ultimately condensed and allowed to go to the existing ETP

-

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)

0.36 KLD Domestic Waste Water will be treated in STP & treated wastewater will be reused in gardening purpose within premises. (For Proposed Expansion)

Domestic wastewater generation shall not exceed 109 KLD and 105 KLD from Epoxy Plant and shall be treated in ETP.

4 KLD domestic sewage from Epichlorohydrin and CPVC plant shall be treated in STP and will be used in gardening within premises. (For Existing)

Comments:

- Domestic wastewater generation shall not exceed 0.36 KL/day for proposed expansion project and it shall be treated in STP.

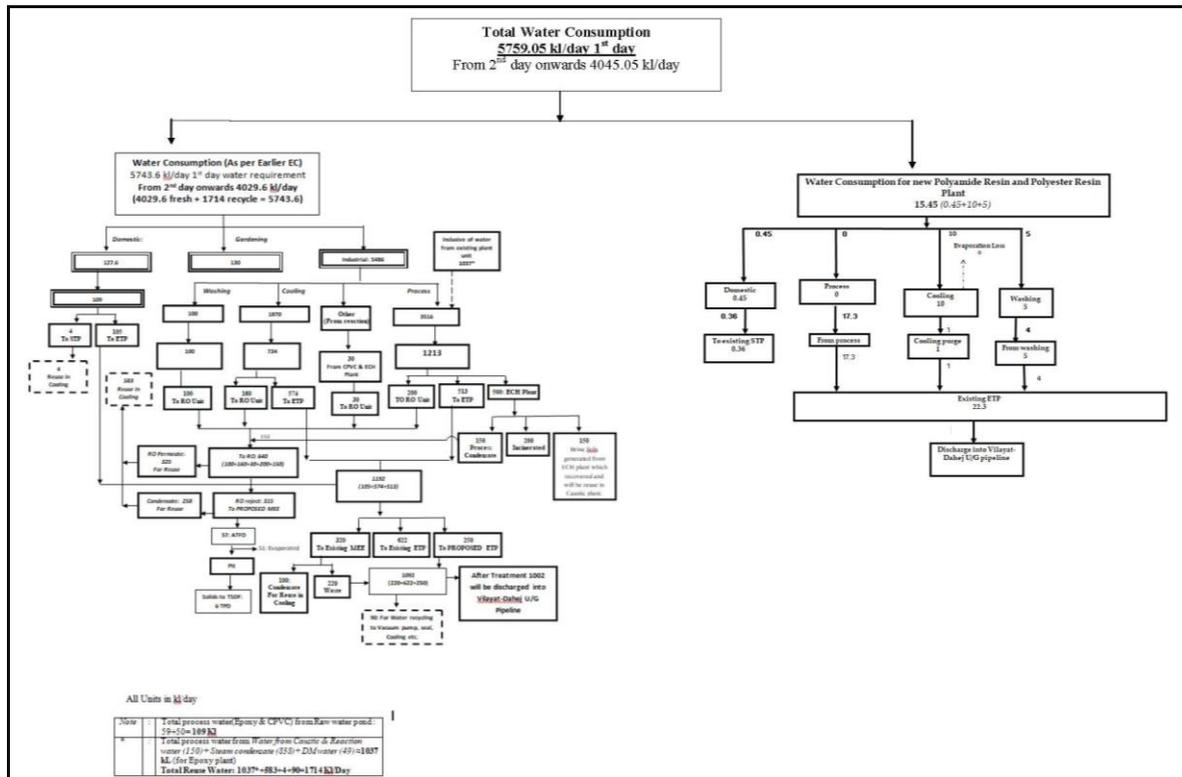
Domestic wastewater generation shall not exceed 109 KLD and 105 KLD from Epoxy Plant and shall be treated in ETP. 4 KLD domestic sewage from Epichlorohydrin and CPVC plant shall be treated in STP and will be used in gardening within premises. (For Existing Scenario)

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	22.3 (For Proposed) (A)	To deep sea through GIDC Pipeline (For Proposed)	
Existing			
1	1213	513:ETP 200:To RO 150:Process 200: Incinerated 150: Reuse	
2	100	To RO	
3	734	160: To RO 574: To ETP	
4	30	To RO	
	2077 (B)		
Total (A+B)	2099.3		
Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)			
Not Applicable			
D-5b Simplified water balance diagram			

Diagram



D-5c Summary

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	5759.05	Required water will be supplied by GIDC
Quantity to be recycled (B)	1714	MEE Condensate + Boiler Condensate+ RO condensate
Total fresh water requirement (C)	4045.05	

Comments:

1. Total water requirement for the project shall not exceed 5759.05 KLD. Unit shall reuse 1714 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 4045.05 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:

- ✓ After proposed expansion, 22.3 kl/day generated from the manufacturing process will be sent to the existing Effluent Treatment Plant, after treatment the said effluent will be disposed off in deep sea through GIDC pipeline.
 - ✓ Industrial Effluent from Epoxy plant, 1192 KLD (1087 KLD Ind.+ 195 KLD Dom.
 - i. Low concentration effluent 872 KLD (767 KLD Ind. and 105 KLD Domestic sewage) shall be treated in adequate ETP-1 consists of primary, secondary and tertiary treatment units along with 220 KLD waste water from MEE of epoxy plant. 1002 KLD treated effluent shall be discharged into Vilayat -Dahej underground Pipeline leading to deep sea. 90 KLD treated effluent from ETP shall be reused back in process for pump, valves and etc,
 - ii, 320 KLD high concentration effluent generated from process shall be evaporated in MEE cum pusher type centrifuge. 100 KLD MEE condensate shall be reused back in cooling Purpose.
 - ✓ Industrial Effluent from Enichlorohydrin and cPVC Plant (990 KLD):
 - i. 640 KLD industrial effluent shall be passed through RO plant. 325 KLD RO permeate shall be reused back in process while 315 KLD RO reject shall be evaporated in in-house MEE cum ATFD. 285 KLD MEE condensate shall be reused back in process.
 - ii. 200 KLD effluent from Epichlorohydrin plant shall be incinerated in own in-house incinerator and: incinerator shall be operated as per CPCB guidelines and printed logbook maintained for record of the same.
 - i ii, 150 KLD effluent mainly brine solution from. Epichlorohydrin plant shall be recovered and directly reuse in Caustic plant.
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 :8.5 MW (7 MW existing + 1.5 MW proposed					
E-2	Flue gas emission details					
-						
Sr. No	Stack Attached to	Stack Height (Meter)	Type & Quantity of Fuel	Air Pollution Control Measure	Pollutant	Permissible Limit
Existing						
1	D.G. Set (2000 kVA)	30	HSD 20 KI/Year	Not Applicable	PM SO ₂ NOx	150 mg/nm ³ 100 ppm 50 ppm

2	Incinerator	36	Hydrogen-200Nm ³ /hr	As per CPCB guidelines	PM SO ₂ NO _x HCl	150 mg/nm ³ 100 ppm 50 ppm
Proposed						
1	D.G. Set (2000 kVA)	30	HSD 20 KI/Year	Not Applicable	PM SO ₂ NO _x	150 mg/nm ³ 100 ppm 50 ppm
2	Thermic Fluid Heater (Capacity - 25 Lakh Kcal)	30	Natural Gas/ HSD NG - 9600 Nm ³ /day HSD – 6.6 KI/day	Not Applicable	PM SO ₂ NO _x	150 mg/nm ³ 100 ppm 50 ppm
TOTAL AFTER PROPOSED EXPANSION						
1	D.G. Set (2000 kVA)	30	HSD 20 KI/Year	Not Applicable	PM SO ₂ NO _x	150 mg/nm ³ 100 ppm 50 ppm
2	Incinerator	36	Hydrogen-200Nm ³ /hr	As per CPCB guidelines	PM SO ₂ NO _x HCl	150 mg/nm ³ 100 ppm 50 ppm
3	D.G. Set (2000 kVA)	30	HSD 20 KI/Year	Not Applicable	PM SO ₂ NO _x	150 mg/nm ³ 100 ppm 50 ppm
4	Thermic Fluid Heater (Capacity - 25 Lakh Kcal)	30	Natural Gas/ HSD NG - 9600 Nm ³ /day HSD – 6.6 KI/day	Not Applicable	PM SO ₂ NO _x	150 mg/nm ³ 100 ppm 50 ppm
E-3 Process gas						
Sr. No. Stack / Vent attached to Height of the Vent (m) Diameter of the Vent (m) Expected Emission Air Pollution Control Measures (APCM) Remarks						
Proposed Process Gas Stacks						
No new process gas stacks are proposed.						
EXISTING						
Epoxy Plant						
1.	ISBL ECH Tank	30	0.15	VOC	Guard Condenser, Scrubber, PRV,	Liquid Epoxy Resin Plant (ECH Vent)

					Flame Arrester	
2.	ISBL Toluene Tank	30	0.15	VOC	Guard Condenser, PVRV, (Integrated Flame Arrester)	Liquid Epoxy Resin Plant (Toluene Vent)
3.	OSBL ECH Tank	10	0.05	VOC	Scrubber, PRV, Flame Arrester	Liquid Epoxy Resin tank (ECH Vent)
4.	PESO Toluene Tank	10	0.05	VOC	Underground tank, PVRV (Integrated flame arrester)	Liquid EPOXY Resin Tank (Toluene Vent)
5.	Toluene Tank	30	0.05	VOC	Guard Condenser, PVRV, (Integrated Flame Arrester)	Reactive Diluents Plant (Toluene)
6.	Reactor	30	0.05	VOC	Guard Condenser, PVRV, (Integrated Flame Arrester)	Solution Cut Plant (Xylene)
7.	Solution Cut Tank	10	0.05	VOC	PVRV, (Integrated Flame Arrester)	Solution Cut Tank Farm (Xylene)
8.	PESO Xylene Tank	10	0.05	VOC	Underground tank, PVRV (Integrated flame arrester)	Xylene Tank (PESO Tank Farm)
ECH Plant						
1.	HCl Vent Scrubber	14	0.15	HCl < 20 mg/Nm ³	Scrubber	Emergency vent Scrubber
CPVC Plant						
1.	HCl synthesis	30	0.15	HCl < 35 mg/Nm ³	Absorption tower using water as an absorption media	--
2.	CPVC Reactor and Degassing Vessel	12	--	Cl ₂ < 9 mg/Nm ³	Alkaline scrubber	--
3.	PVC Conveying to Silo	25	--	PM < 150 mg/Nm ³	Bag filter	--
4.	PVC Conveying to Oxygen	10	--	PM < 150 mg/Nm ³	Bag filter	--
5.	Degassing	35	--	PM < 150 mg/Nm ³	Bag filter	--
6.	Conveying-	25	--	PM	Bag filter	--

	Degassing Vessel to Hopper			<150 mg/Nm ³		
7.	Evacuation of air	10	--	PM <150 mg/Nm ³	Bag filter	--
8.	Conveying CPVC from PVC Reactor	25	--	PM <150 mg/Nm ³	Bag filter	--
-						
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						
No solvent will be used in the proposed expansion						
F-2	VOC emission sources and its mitigation measures					
Measures for achieving maximum solvent recovery and minimize VOC generation:						
No solvent will be used for thr proposed expansion, so no VOC emission would take place.						
F-3	LDAR proposed:					
<p>Unit shall be carrying out LDAR program for the sources of leakages. Steps such as monitoring of solvent losses, preventive maintenance measures, and immediate corrective actions will be followed by the unit.</p> <p>Monitoring of Solvent Losses:</p>						

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

Preventive Maintenance Measures:

In order to prevent leakage from Pump, Seals, Valves etc, preventive maintenance shall be carried out periodically as per plan scheduled. In case of any recurring problem, action plan shall be prepared or frequency shall be revised.-

Comments:

- Measures for achieving minimum VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement.
- There shall be no use of solvents for the manufacturing of proposed products.

G Hazardous waste

G-1 Hazardous waste management matrix

Sr. no.	Type/Name of Hazardous waste	Source	Category	Quantity (MT/Annum)			Disposal Method
				Existing	Proposed (additional)	Total	
1	Waste Residues (Not made with animal or vegetable material)	From Manufacturing Process	I-23.1	1,971	0	1,971	Collection, storage, transportation, disposal at Ambuja Cement Ltd. for pre-processing, co-processing/incineration
2	Chemical Sludge from wastewater treatment	ETP	I-35.3	2,742	2	2,744	Collection, storage, transportation, disposal of landfill waste at TSDF and incinerable waste by pre-

							processing, co-processing/ incineration
3	Discarded containers/ bags/ liners contaminated with hazardous waste/chemicals	From Manufacturing	I-33.1	1,250	5	1,255	Collection, storage, transportation, disposal by selling to authorized vendors.
4	Used or Spent Oil	From Lubrication or D.G.Set	I-5.1	12	0	12	Collection, storage, transportation, disposal by selling to registered recycler
5	Waste residue/ Filter (containing oil)	From lubrication or D.G. Set	I-5.2	2	0.049	2.049	Collection, storage, transportation, disposal by selling to registered recycler
6	Incinerator waste/ residue	Incinerator	I-37.3	8,000	0	8,000	Collection, storage, transportation, disposal of landfill waste at TSDF
7	MEE residue	MEE operation	I-37.3	2,190	0	2,190	Collection, storage, transportation, disposal of landfill waste at TSDF
8.	Hydrochloric Acid(20% Technical grade) as 20%	B-15 of Sch-II [From ECH & Epoxy]	B-15 of Sch-II	1,32,000	0	1,32,000	Collection, storage and utilization within premises.
	Hydrochloric Acid	(From CPVC)		2,76,048	0	2,76,048	Collection, storage and utilization 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, 							

	<p>transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement.</p> <p>➤ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB.</p>																																										
G-2	<p>Non- Hazardous waste management matrix</p> <p>✓ Fly Ash generation will be Nil MTPA. ✓ STP sludge generation will be 10 MTPA</p> <p>Comments:</p> <p>➤ 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.</p> <p>➤ STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling.</p>																																										
H	SAFETY details																																										
H-1	Details regarding storage of Hazardous chemicals																																										
	-																																										
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	<table border="1"> <thead> <tr> <th>Sr. No.</th> <th>Name of Chemicals</th> <th>Physical State</th> <th>Means of Storage</th> <th>Capacity of Storage Tank/ Size of Bags (MT)</th> <th>Nos. of Storage Tanks / Bags</th> <th>Storage Condition i.e.Temp. Pressure</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Diethylene glycol</td> <td>Liquid</td> <td>Tank</td> <td>31</td> <td>1</td> <td>Ambient Temp. & Atm. Pressure</td> </tr> <tr> <td>2.</td> <td>Neopentyl glycol</td> <td>Solid</td> <td>JBS</td> <td>240</td> <td>320</td> <td>Ambient Temp. & Atm. Pressure</td> </tr> <tr> <td>3.</td> <td>Terephthalic acid</td> <td>Solid</td> <td>JBS</td> <td>370</td> <td>494</td> <td>Ambient Temp. & Atm. Pressure</td> </tr> <tr> <td>4.</td> <td>Isophthalic acid</td> <td>Solid</td> <td>Bag</td> <td>41</td> <td>1640</td> <td>Ambient Temp. & 3 kg/cm² Pressure</td> </tr> <tr> <td>5.</td> <td>Dimer Acid</td> <td>Liquid</td> <td>Tank</td> <td>601</td> <td>2</td> <td>Ambient Temp. & Atm. Pressure</td> </tr> </tbody> </table> <p>➤ Applicability of PESO: No Permission or Licences is required from PESO. Hence it is 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</p>	Sr. No.	Name of Chemicals	Physical State	Means of Storage	Capacity of Storage Tank/ Size of Bags (MT)	Nos. of Storage Tanks / Bags	Storage Condition i.e.Temp. Pressure	1.	Diethylene glycol	Liquid	Tank	31	1	Ambient Temp. & Atm. Pressure	2.	Neopentyl glycol	Solid	JBS	240	320	Ambient Temp. & Atm. Pressure	3.	Terephthalic acid	Solid	JBS	370	494	Ambient Temp. & Atm. Pressure	4.	Isophthalic acid	Solid	Bag	41	1640	Ambient Temp. & 3 kg/cm ² Pressure	5.	Dimer Acid	Liquid	Tank	601	2	Ambient Temp. & Atm. Pressure
Sr. No.	Name of Chemicals	Physical State	Means of Storage	Capacity of Storage Tank/ Size of Bags (MT)	Nos. of Storage Tanks / Bags	Storage Condition i.e.Temp. Pressure																																					
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5.	Dimer Acid	Liquid	Tank	601	2	Ambient Temp. & Atm. Pressure																																					

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:

No hazardous process involved

H-3 Details of Fire Load Calculation

Total combustible area	7207 Sq. Mtr
Number of Floors:	4
Water requirement for firefighting:	360.35 lpm
Water requirement for firefighting :	180.17 KL
Water storage tank provided for firefighting :	1230 KL
Provision of Hydrant Pumps:	Electrical Motor Driven Main Pump, Capacity – 273 m3/hr – 1 No. Electrical Motor Driven Jockey Pump, Capacity – 18 m3/hr – 2 No. Diesel Engine driven Pump, Capacity – 273 m3/hr – 2 No.
Provision of Fire Extinguishers	80
Nearest Fire Station :	Bharuch,

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 1230 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:	739
Number of Contractual person/Labour:	50
Area provided for OHC:	100 m ²
Number of First Aid Boxes:	25 nos
Nearest General Hospital:	Prime Multi Specialty Hospital ICU and Trauma Hospital

Name of Antidotes to be store in plant:	Adequate antidotes will be stored within premises
-----------------------------------------	---------------------------------------------------

Comments

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

Details of Environmental Management Plan (EMP)

As below:

S r. N o	Unit	Detail	Capital Cost	Operati ng Cost	Maintenance Cost	Total Recurring Cost	
1	Waste Water	Constructi on of Effluent Treatment Plant	0	1,00,00 0	Maintenance of Effluent Treatment Plant (ETP)	20,000	1,20,000
2	Air	Installation of Air Pollution Control Measures	1,00,00 0	--	Maintenance of Air Pollution Control Devices	1,50,00 0	1,50,000
					Training of workers to operate Air Pollution Control Measures		
					Service of vehicles periodically.		
3	Hazardous Managem ent	Providing for collection, storage area for solid waste as well as its disposal	0	--	Packing & disposal of Hazardous/S olid waste	1,00,00 0	1,00,000
4	Noise Control	Provision of sound enclosure s	2,00,00 0	30,000	Maintenance of noise control facilities such as enclosures, covers as well as machines themselves	20,000	50,000
5	Fire &	Installation	10,00,0	2,40,00	Maintenance	10,000	2,50,000

	Safety	of Fire hydrant ,Sprinkler, Extinguisher, etc. and Includes PLC system/D CS System	00	0	of fire safety equipments.		
6	AWH Monitoring	--	--	2,00,000	Monitoring of Environmental parameter	--	2,00,000
7.	Green Belt Development	Trees to be planted	Not Applicable as it will be part of existing system				
8.	Occupational Health	Provision of OHC , PPE Kit, Pre employment medical examination, etc.	2,00,000	80,000	Maintenance of PPE Periodical medical Examination	20,000	1,00,000
9.	CER Cost	Provision of CER fund as per OM dated 01/05/2018	60,00,000	--	--		--
Total			75,00,000	6,50,000		3,20,000	9,70,000

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

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

SPECIFIC CONDITIONS:

1. Unit shall install CEMS [Continuous Emission Monitoring System] in line to CPCB directions to all SPCB vide letter no. B-29016/04/06PCI-1/5401 dated 05/02/2014 for effluent discharge and air emission as per pollutants discharge/emission from respective project and an arrangement shall also be done for reflecting the online monitoring results on the company's server, which can be assessable by the GPCB/CPCB on real time basis. [For Small/Large/Medium (Red Category) & Whichever (Air emission & Effluent discharge) is applicable].
2. There shall be no use of solvents for the manufacturing of proposed products.
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 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

9. Total water requirement for the project shall not exceed 5759.05 KLD. Unit shall reuse 1714 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 4045.05 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 2099.3 KLD.
11. Management of Industrial effluent shall be as under:
- ✓ Industrial Effluent from Epoxy plant, 1192 KLD (1087 KLD Ind.+ 195 KLD Dom).
 - ✓ Low concentration effluent 872 KLD (767 KLD Ind. and 105 KLD Domestic sewage) shall be treated in adequate ETP-1 consists of primary, secondary and tertiary treatment units along with 220 KLD waste water from MEE of epoxy plant. 1002 KLD treated effluent shall be discharged into Vilayat -Dahej underground Pipeline leading to deep sea. 90 KLD treated effluent from ETP shall be reused back in process for pump, valves and etc,
 - ✓ 320 KLD high concentration effluent generated from process shall be evaporated in MEE cum pusher type centrifuge. 100 KLD MEE condensate shall be reused back in cooling Purpose.
 - ✓ Industrial Effluent from Epichlorohydrin and cPVC Plant (990 KLD):
 - ✓ i. 640 KLD industrial effluent shall be passed through RO plant.325 KLD RO permeate shall be reused back in
 - ✓ Process while 315 KLD RO reject shall be evaporated in in-house MEE cum ATFD. 285 KLD MEE condensate shall be reused back in process.
 - ✓ ii.
 - ✓ 200 KLD effluent from Epichlorohydrin plant shall be incinerated in own in-house incinerator and: incinerator shall be operated as per CPCB guidelines and printed logbook maintained for record of the same.
 - ✓ i ii, 150 KLD effluent mainly brine solution from. Epichlorohydrin plant shall be recovered and directly reuse in Caustic plant.
 - ✓ After proposed expansion, 22.3 kl/day generated from the manufacturing process shall be sent to the existing Effluent Treatment Plant, after treatment the said effluent shall be disposed off in deep sea through GIDC pipeline.
 - ✓ Treated waste water shall be discharge to into Vilayat -Dahej underground Pipeline leading to

deep Sea, Jhagadia pipeline only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.

12. Domestic wastewater generation shall not exceed 109.36 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 Thermic Fluid Heater 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. For control of fugitive emission, VOCs, following steps shall be followed :

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

24. Solvent management shall be carried out as follows:

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

25. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, 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 (58908.63 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 (Provision of roof top solar panel system in the nearby villages. Provision of Organic waste composter in the nearby villages. Promotion of education; including special education and employment enhancing vocation skills especially among children, woman, elderly and the differently abled and livelihood enhancement projects
- Protection of national heritage, art and culture including restoration of buildings and sites of historical importance and works of art; setting up of public libraries; promotion and development of traditional arts and handicrafts, Training to promote rural sports, nationally recognized sports, Paralympic sports and Olympic sports, Tree plantation in the nearby villages.) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
33. All the recommendations, mitigation measures, environmental protection measures and safeguards proposed in the EIA report of the project prepared by M/s. Anand Environmental Consultants Pvt. Ltd. and submitted by the project proponent and commitments made during presentation before SEAC and proposed in the EIA report shall be strictly adhered to in letter and spirit.

COMPLIANCE OF ENVIRONMENT CLEARANCE/REPORTING/ADMINISTRATION/APPEAL:

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

07	SIA/GJ/IND3/66652/2021	M/s. Prashant Industries PLOT NO. C-294, Saykha Industrial Estate Ta: 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/IND3/66652/2021
1.3. Category of Project :	5 (f) – B1
1.4. Date of application :	11-02-2022
1.5. Documents Submitted by Project Proponent(PP)	EIA report, Form-2, EMP
1.6. TOR No. & Date :	SIA/GJ/IND3/66652/2021, Date: 25/08/2021
1.7. Date of Public hearing	--
1.8. Technical expert / Environmental Consultant :	M/s. Satva Environ Consultancy
1.9. SEAC Meeting No. and Date:	389th Meeting Dated 28-03-2022
1.10. Compliance of Existing EC & CCA	Not applicable (New unit)

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

SR NO	PRODUCT NAME	Case No.	Total MT/Month	End Uses
Group-1 Alkylated Anilines			400	Dyestuffs, Rubber, Agriculture, Chemicals and Pharmaceuticals industries.
1.	DMA N,N-Dimethyl Aniline	121-69-7		
2.	DEA N,N-Diethyl Aniline	91-66-7		
3.	EBA N-Ethyl-N-Benzyl Aniline	101-11-1		
4.	MEA N-Ethyl Aniline	103-69-5		
5.	MMA N-Methyl Aniline	100-61-8		
Group-2 Sulfonation			300	Dyes and color intensifiers, pigments, medicinals, pesticides and organic intermediates.
6.	4-Nitro Toluene-2-Sulfonic Acid	121-03-09		
7.	Para Nitro Chlorobenzene Ortho Sulfonic Acid	121-18-6		
8.	Ortho Nitro Chlorobenzene Para Sulfonic Acid	96-73-1		
9.	Sulfo Tobias Acid	81-16-3		
10.	Armstrong Acid	81-04-9		
11.	Aniline 2.4 Disulfonic Acid	137-51-9		
12.	Aniline 2.5 Disulfonic Acid	98-44-2		
13.	Schaeffer's Acid	93-01-6		
14.	Ortho Anisidine 4 Sulfonic Acid	98-42-0		
15.	Para Anisidine 2 Sulfonic Acid	13244-33-2		
16.	Para Anisidine 3 Sulfonic Acid	6470-17-3		
17.	Para Phenylenediamine 2.5 Disulfonic Acid	7139-89-1		
18.	Meta Phenylenediamine 4.6 Disulfonic Acid	1723-44-0		
19.	Para Toluidine 2.5 Disulfonic Acid	98-44-2		
20.	Para Toluidine 2 Sulfonic Acid	88-44-8		
21.	4-Chlorobenzene Sulfonic Acid	98-66-8		
22.	N-Ethyl-N-Benzyl Aniline Sulfonic Acid	92-59-1		
23.	Sulfo OAVS	121-88-0		
24.	Sulfo VS	42986-22-1		
Group-3 Ammonolysis			200	an intermediate in the synthesis of dyes, antioxidants, pharmaceuticals and gasoline, in gum inhibitors, poultry medicines, and as a corrosion inhibitor.
25.	Para Nitro Aniline Ortho Sulfonic Acid	616-84-2		
26.	Ortho Nitro Aniline Para Sulfonic Acid	616-84-2		
27.	Para Nitro Aniline	121-87-9		
28.	Ortho Nitro Aniline	88-74-4		
Group-4 Reduction / Hydrogenation			150	Photographic developing agent and as an intermediate in the manufacture of dyes, antioxidants, and accelerators for rubber vulcanization.
29.	Pera Amino Phenol	123-30-8		
30.	Para Phenylenediamine 2 Sulfonic Acid	88-45-9		
31.	4-Chloro Metanilic Acid	98-36-2		
32.	6-Chloro Metanilic Acid	56057-19-3		
33.	2-Chloro Para Phenylenediamine Sulfate	61702-44-1		
34.	Para Phenylenediamine	106-50-3		
35.	Para Phenylenediamine Sulfate	615-50-9		
36.	2.5-Diamino Toluene Sulfate	615-50-9		
37.	Para Amino Benzoic Acid	150-13-0		
38.	4-Chloro 3-Amino Benzoic Acid	2840-28-0		
Group-5 Diazotization + Coupling + Hydrolysis			100	Intermediate in making herbicides,
39.	2,5-Dichloro Phenol 2,3-Dichloro Phenol	583-78-8		

40.	4-Amino Azobenzene-4-Sulfonic Acid	104-23-4		preservatives and disinfectants.
Group-6 Sulfonation + Hydrogenation			200	Manufacture of azo dyes and in synthesis sulfa drugs.
41.	Metanilic Acid	121-47-1		
Group-7 Sulfonation + Hydrogenation + Acetylation			100	Intermediate For Dyestuffs
42.	Meta Phenylenediamine-4-Sulfonic Acid	88-63-1		
43.	6-Acetylamino-2-Amino Phenol-4-Sulfonic Acid	95-55-6		
Group-8 Acetylation + Nitration + Hydrolysis			100	Dyeing of cotton fabrics with various naphthols to obtain more than 15 shades. And also used for Dyeing silk, mucilage glue fibre, and Terylene.
44.	Fast Red B Base	97-52-9		
45.	Fast Bordeaux GP Base	96-96-8		
Group-9 Reduction + Condensation			50	sunscreen agents and as ultraviolet light absorbers
46.	Phenyl Benzimidazole Sulfonic Acid	27503-81-7		
Group-10 Reduction + Condensation			40	Intermediate for Dye Stuffs
47.	4NADPSA	91-29-2		
48.	4ADAPSA	91-30-5		
Group-11 Acetylation + Reduction			200	Used in hair dyes, Direct dyes, Dispersed dyes
49.	PAA	79-21-0		
50.	MAA	70024-90-7		
Group-12 Dry Sulfonation (ZLD)			500	Used in Dyes in Pigments industries
51.	OT5SA	98-33-9		
52.	Sulfanilic Acid	121-57-3		
53.	4B Acid	88-44-8		
	Total		2340	

- 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 24.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) 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, NH3 and Cl2 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) Committee asked to submit the following:
- ✓ Submit revised Air Matrix considering fuel quantity of imported coal and Briquettes of Agro waste separately by considering Calorific values of both.
- 10) Later on PP submitted following details through email on dated 28/03/2022
- ✓ PP has Submitted revised Air Matrix considering fuel quantity of imported coal and Briquettes of Agro waste separately by considering Calorific values of both and PP has also Submitted Revise SEAC Format with update in respective section
- 11) Since the proposed project is located in notified industrial area, public consultation is not required as per paragraph 7(i) (III) (l) (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):				
<table border="1"> <tr> <td>Total Project</td> </tr> <tr> <td>Rs. 26.0 Crores</td> </tr> </table>			Total Project	Rs. 26.0 Crores
Total Project				
Rs. 26.0 Crores				
Break-up of proposed project Cost:				
Details		Project Cost (Rs. In Crores)		
Land		8.0		
Building		5.0		
Machinery		12.0		
Env. & Safety		0.75		
Miscellaneous		0.25		
Total		26.0		
-				
A-2	Details of CER -			
PP shall carry out CER activities as below:				
<ul style="list-style-type: none"> ✓ To provide Solar panel tree capacity of 5 KW each with installation each village 				

Saran, Saykha, Godar, Vahiya and pipaliya.								
B	Land / Plot ownership details:							
Land Possession Documents from Gujarat Industrial Development Corporation vide letter no GIDC/DEE (Road)/BRH/223 Dated 26-06-2018								
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;">19222.51 Sq. m.</td> </tr> </table>							Total Plot area	19222.51 Sq. m.
Total Plot area								
19222.51 Sq. m.								
B-2	Area adequacy							
Sr No.	Description of Area	Ground Floor	First floor	Second Floor	Total	Percentage		
1	Manufacturing area	750	4400	4400	9550	3.90		
2	Raw material Storage area	2750	-	-	2750	14.31		
3	Finish Good Storage Area	900	-	-	900	4.68		
4	Tank Farm Area	1000	-	-	1000	5.20		
5	Hydrogen Cylinder Bank Storage area	450	-	-	450	2.34		
6	Boiler house and Coal Storage area	500	-	-	500	2.60		
7	Stack APCM Area	250	-	-	250	1.30		
8	ADM building Area	150	150	-	300	0.78		
9	OHC	80	-	-	80	0.42		
10	Spray Drying Area	1050	-	-	1050	5.46		
11	Waste storage Area	900	-	-	900	4.68		
12	ETP Area	720	-	-	720	3.75		
13	Green Belt	6344	-	-	6344	33.00		
14	Open & Road	3379	-	-	3379	17.58		
	Total Area	19222.51						
Area Adequacy table:								
Sr No.	Description of Area	Criteria for Storage	Inventory Required (MT) (KL)	Area Required (m²)	Area Proposed (m²)			
1	Finished Product Storage Area (One Week inventory)	2340 MT/Month	585 MT	675	900			
2	Raw Material Store area in Drum and Bag (1 Week inventory)	1436 Drum 55450 Bag	302	646	2750			
			1386	1595				

3	Hydrogen Storage (on Ground)	2 Bank	-	300	450
4	Storage tank Area (PESO Applicable)	10 X 1 (1.9 m dia. x 3.2 m Height)	10	15	1000
		30 X 5 (2.5 m dia. x 3.6 m Height)	150	200	
		20 X 2 (2.1 m dia. x 3.5 m Height)	40	45	
6	Storage tank Area (Non PESO Applicable)	15 X 1 (2.0 m dia. x 3.2 m Height)	15	20	
		50 X 7 (2.8 m dia. x 4.19 m Height)	350	400	
		40 X 3 (2.46 m dia. x 4.19 m Height)	120	150	
		20 X 2 (2.1 m dia. x 3.5 m Height)	40	50	
7	Effluent Treatment Plant + MEE	481 KLD	481 KLD	500	720
8	ETP Waste storage area (30 Day Inventory)	125 MT/Month	125 MT/Month		
9	Utility Area	-	Boiler, HAG-TFH	100	750
10	Fuel Area (3 Days Storage)	111 MT/Day	333 MT/day		
11	Process waste storage (5 Day Inventory)	2020.5 MT/Month	336 MT	-	900
12	Manufacturing Area	2340 MT/Month	-	-	9550
13	Admin Area	-	-	-	300
14	Occupation health Center	-	-	-	80

Note: The unit is having New plot area of 19222.51 M2. The unit has proposed 9550 M2 area for production and dedicated 2750 M2 area for raw material storage and proposed additional tank storage area of 1000 M2 for material 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. The unit has also proposed 33% green belt area within plant premises. Looking to the product quantity, the area is adequate to handle proposed production

➤ 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	6344 inside
% of total area	33% Inside

Comments:

The condition shall be given that -

- The PP shall develop green belt (6344 Sq. m i.e. 33 % of the total plot area) within plant premises as per the undertaking submitted before SEAC. Green belt shall be developed with native plant species that are significant and used for the pollution abatement as per the CPCB guidelines. It shall be implemented within 3 years of operation phase in consultation with GPCB.

C Employment

Employment generation

Total
75

-

D WATER

D-1 Source of Water Supply

- Saykha GIDC Water supply

Comments:

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

D-2 Water consumption (KLD)

-

Sr. No	Category	Water Consumption KLD	Remark
1.	Domestic Purpose	8.0	
2.	Gardening	5.0	Utilized from STP
3.	INDUSTRIAL		
	Process	368.0	
	ICE	132.0*	Not include in Water Consumption

	Washing	30.0	
	Cooling	85.0	50 KLD Cond. 35 KLD Fresh
	Boiler	145.0	70 KLD Cond. +75 KLD Fresh
	Scrubber	2.0	
	Total water Consumption (Domestic + Gardening)	13.0	
	Total water Consumption (Industrial)	630.0	
	Total Water Consumption	643.0	
	Total Reuse	360.0	
	Total Fresh Water	283.0	

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 KLD	Remark
1.	Domestic Purpose	5.0	Utilized in Gardening
	INDUSTRIAL		
2.	Process	429.0	98 KLD Dilute + 331 KLD high COD
	Washing	30.0	Send to CETP
	Cooling	10.0	Send to CETP
	Boiler	12.0	Send to CETP
	Scrubber Bleed off	2.0*	Send to Rule -9
	Total Wastewater generation (Domestic)	5.0	
	Total Wastewater generation (Industrial)	481.0	

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)

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

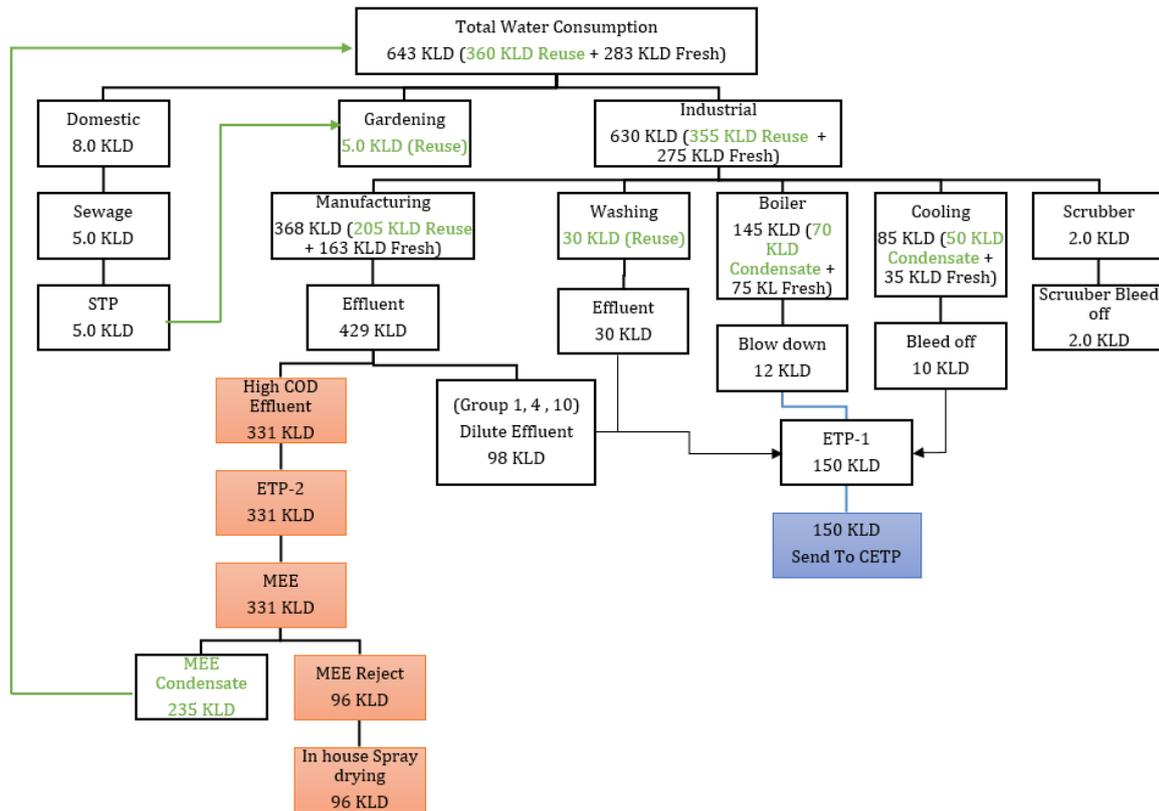
Comments:

- Domestic wastewater generation shall not exceed 5.0 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	150 KLD	Send to CETP After treated in primary ETP-1
2	331 KLD	ETP -2 followed by in house MEE and spray drier
Total	481.0	
Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)		
The unit is permitted from GIDC vide letter No: GIDC/BRH/XEN/WD/865 Dated 26/08/2020 for discharge 150 KLD in CETP Saykha		

D-5b Simplified water balance diagram



D-5c Summary

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	643.0	
Quantity to be recycled (B)	360.0	
Total fresh water requirement (C)	283.0	
Ensure Total water requirement = Recycled water + Fresh water i.e. A = B + C		

Comments:

5. Total water requirement for the project shall not exceed 643 KLD. Unit shall reuse 360.0 KLD of MEE Condensate utility Condensate reuse within premises. Hence, fresh water requirement shall not exceed 283.0 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.

6. Management of Industrial effluent shall be as under:

Stream-1 (150 KLD)

- 150 KLD effluent shall be treated in Primary, secondary treatment facility and

then send to CETP saykha.

- Treated waste water shall be sent to CETP of Saykha only after complying with the inlet norms of CETP prescribed by GPCB to ensure no adverse impact on Human Health and Environment

Stream-2 (331 KLD):

- 331 KLD industrial effluent from process generated shall be neutralized and then Discharge through in house MEE followed by Spray Dryer.
- Unit shall feed wastewater to in-house MEE only after ensuring content of effluent for COD/VOC so as not to get air borne during evaporation in order to achieve no adverse impacts on Environment and Human Health

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

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

E	AIR
E-1	Power (Electricity) requirement :1050 KW
E-2	Flue gas emission details

Sr no	Stack attached to	Stack height in meter	Fuel	Consumption	APCM
1	Steam Boiler (4 TPH) 2 Nos.	Common Stack of 31.0	Imported Coal / Briquettes / DOC	25 MT/Day Or 32 MT/Day	ESP + Water Scrubber
2	Thermo pack 1.5 Lac Kcal/hr 2 Nos.	Common Stack of 31.0	Imported Coal / Briquettes / DOC	8 MT/Day Or 10.50 MT/Day	Multi Cyclone separator with Water Scrubber
3	Direct Hot Air Generator for Spray Dryer (11 lac Kcal/Hr)	Combine Stack With HAG	PNG or Imported Coal	4500 SCM/Day or 8 MT/Day	Attached to Spray Dryer
4	Direct Hot Air Generator for Spray Dryer (20 lac Kcal/Hr)	Combine Stack With HAG	Imported Coal / Briquettes / DOC	15 MT/Day Or 19 MT/Day	Attached to Spray Dryer
5	Direct Hot Air Generator for Spray Dryer (20 lac Kcal/Hr)	Combine Stack With HAG	Imported Coal / Briquettes / DOC	15 MT/Day Or 19 MT/Day	Attached to Spray Dryer
6	Direct Hot Air Generator for Spray Dryer (30 lac Kcal/Hr)	Combine Stack With HAG	Imported Coal / Briquettes / DOC	20 MT/Day Or 26 MT/Day	Attached to Spray Dryer
7	Direct Hot Air Generator for Flash Dryer	Combine Stack With	PNG or Imported Coal	700 SCM/Day or 10 MT/Day	Attached to Flash Dryer

	(2 lac Kcal/hr) 4 Nos.	dryer			
8	Direct Hot Air Generator for Tray Dryer (2 lac Kcal/hr) 2 Nos.	Combine Stack With dryer	PNG or Imported Coal	700 SCM/Day or 8 MT/Day	Attached to Tray Dryer

E-3 Process gas

Sr. no	Stack attached to	Stack height in meter	APCM	Types Of Emission
1.	Spray Dryer 1100 LPH (Product)	31	Multi Cyclone Separator Followed By two Stage Water Scrubber	PM
2.	Spray Dryer 4000 LPH	31	Multi Cyclone Separator Followed By two Stage Water Scrubber	
3.	Spray Dryer 4000 LPH	31	Multi Cyclone Separator Followed By two Stage Water Scrubber	
4.	Spray Dryer 8000 LPH	31	Multi Cyclone Separator Followed By two Stage Water Scrubber	
5.	Flash Dryer 300 kg/Hr 4 Nos.	-	Multi Cyclone Separator Bag filter	
6.	Tray Dryer (200 Tray) 4 Nos.	-	-	
7.	Reactors Vessels attached to (Reactions and Sulphonation- 4 sets.)	21 meter Each	Two stage Water Scrubber followed by Alkali Scrubber	SOX NOX NH3

E-4 Fugitive emission details with its mitigation measures.

- 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:

- 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 %
	Kg/MT of products	Kg/MT of products		
MCB	436.68	427.95	98	2
ODCB	1771.34	1753.63	99	1
MDC	4761.143	4713.53	99	1
Methanol	3325	3192	96	4

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 bulk drugs and fine chemical, 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:

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

G Hazardous waste

G- Hazardous waste management matrix

1					
Sr No	Types of Hazardous Waste	Sources	Category	Propose MT/Annum	Disposal
1	ETP Sludge	ETP Area	35.3	1500	Collection, storage, Transportation and Dispose to Active TSDF Site
2	MEE Salt	MEE	35.3	500	Collection, storage, Transportation and Dispose to Active TSDF Site or send to Co processing
3	Used Oil	Plant Machinery	5.1	2	Collection, storage, Reuse within premises.
4	Discarded Container/Bags	Material Storage and Handling	33.1	120	Collection, storage, Transportation and Dispose to Registered Recycler
5	Spent Sulfuric Acid	Sulfonation Product	26.3	40680	Collection, storage and 12600 MT/Annum reuse in Manufacturing Process and Remaining 28080 MT/Annum sell to Actual User under rule -9 permission.
6	Iron Sludge	Para Toluidine 2 Sulfonic Acid, PPD 2 Sulfonic Acid, Metanilic Acid, Meta Phenylenediamine-4-Sulfonic Acid, 4ADAPSA, PAA, MAA etc.	26.2	22692	Collection, Storage, and Transportation for co-processing or Send to TSDF Site
7	Spent Acetic Acid	Meta Phenylenediamine-4-Sulfonic Acid, PAA	26.3	1413	Collection, Storage and covert to 99 % Concentration Acetic Acid pure Product through distillation process and sell to as a product.
8	Process waste Sludge	Para Nitro Aniline Ortho Sulfonic Acid, 4-Chloro 3-Amino Benzoic Acid, etc	26.2	1554	Collection, Storage, and Transportation for co-processing or Send to TSDF Site
9	Calcium Chloride	Para Nitro Aniline, Ortho Nitro Aniline, etc.	26.2	2198	Collection, Storage, Transportation and sell to Actual User under rule -9 permission.
10	Sodium bisulphite	Scrubbing media of	26.2	425	Collection, Storage, Transportation and sell to

		Sulphonation products and 2-Chloro Para Phenylene diamine Sulfate, etc.			Actual User under rule -9 permission.				
11	Spent Solvent	Manufacturing process	26.1	8640	Collection, Storage, And Reuse With in Plant Premises in Process After Distillation				
12	Solvent Residue	Distillation Unit	26.4	175	Collection, Storage, And Send For Co-Processing CHWIF				
13	Liquor Ammonia	Scrubbing Media	-	30	Collection, Storage, Transportation and sell to Actual User under rule -9 permission				
<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 1665.0 MTPA. ✓ STP sludge generation shall be 5.0 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								
-									
-									
Sr No	Name of Raw Material	State	1 Week Storage (KL)	storage	Capacity KL	No	Spare Tank	MOC	Hazardous
1	Acetic Acid	Liquid	150	Tank	50	2	-	MS	Flammable

2	Ammonia	Liquid	25	Tank	15	1	-	MS+FR P	Danger to health
3	Formaldehyde	Liquid	12.5	Tank	10	1	-	MS+FR P	Flammable
4	Methanol	Liquid	192	Tank	30	2	-	MS	Flammable
5	HCl	Liquid	191.48	Tank	50	3	-	MS+FR P	Corrosive
6	MCB	Liquid	52.5	Tank	20	1	-	MS	Flammable
7	MDC	Liquid	104.15	Tank	20	1	-	MS	Flammable
8	Nitric Acid	Liquid	42	Tank	20	2	-	MS	Danger
9	ODCB	Liquid	165	Tank	30	3	-	MS	Flammable
10	Oleum 23%	Liquid	416.25	Tank	40	1	1	MS+FR P	Corrosive
11	Oleum 65%	Liquid	416.25	Tank	40	1		MS+FR P	Corrosive
12	Sulphuric Acid	Liquid	387	Tank	50	2	-	MS+FR P	Corrosive
13	Hydrogen	Gas	109.5	Bank	-	2	-	-	Explosive

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

Storage of Hazardous chemicals in Tanks

- The charging of material shall be carried out by PLC based SCADA Fully Automization 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.

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

- The charging of material shall be carried out by PLC based SCADA Fully Automization System.
- The Drum storage shall be carried out at dedicated storage on sand with RCC layer at bottom to avoid spillage in case of leakages
- The charging shall be done through intermediate reactor with auto level indicator.
- The storage shed shall be constructed in compliance with PESO Standard
- 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

Safety details of Hazardous Chemicals:

Type of Hazardous Chemicals	Safety measures
Solvent Storage	<ul style="list-style-type: none"> • The charging of material shall be carried out by PLC based SC Fully Automization 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 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.
HCL/ Sulphuric Acid	<ul style="list-style-type: none"> • The charging of material shall be carried out by PLC based SC Fully Automization 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 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.

	<ul style="list-style-type: none"> • Vent line dipped in water shall be provided. • RCC foundation shall be provided. • Transfer material to another empty tank/ Vessel. 	
Hydrogen	<ul style="list-style-type: none"> • Hydrogen storage area shall be made well ventilated and safe distance shall be maintained as per gas cylinder rule. • Sprinkler system provision shall be made in Hydrogen storage area. • Gas detectors shall be provided in Hydrogen storage area. • Copper tube shall be used for Hydrogen cylinder connection with header. PRV station shall be provided for Hydrogen and nitrogen cylinder header. • Non sparking tools shall be used for cylinder connection with header. • Total enclosed process system. • Instrument & Plant Air System. DCS operational plant. • 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 autoclave reactor. • PRV station with shut off valve, safety valve provision shall be made for hydrogenation reaction safety. • Before Hydrogen Gas charging into reactor and after completion of reaction Nitrogen flushing shall be done. • Flame arrestor shall be provided on vent line of reactor and it shall be extended up to roof level. • Open well ventilated and fragile roof shall be provided to on reactor. • Safe Catalyst charging method shall be adopted. • SOP shall be prepared and operators shall be trained for the same. • Static earthing and electric earthing (Double) provided. • Rector vent extended outside the process area and flame arrestor provided on vent line. • Dumping vessel arrangement shall be made. • Jumpers for static earthing on pipeline flanges of flammable chemical shall be provided. 	
	<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:	
Type of	Safety measures including Automation	

Process			
Sulphonation & Nitration	<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. • 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 • 		
hydrogenation	<ul style="list-style-type: none"> • 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 shall be made for hydrogenation reaction safety • Before Hydrogen Gas charging in to reactor and after completion of reaction • Nitrogen flushing shall be done. • Flame arrestor shall be provided on vent line of reactor and it shall be extended up to roof level • Open well ventilated and fragile roofs shall be provided to on reactor. • Safe Catalyst charging method shall be adopted. • SOP shall be prepared and operators shall 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 shall be made. • Dumpers for static earthing on pipeline flanges of flammable chemical 		

	shall be provided	
H-3	Details of Fire Load Calculation	
Total Plot Area:	19222.514	
Area utilized for plant activity:	18533.78	
Area utilized for Hazardous Chemicals Storage:	1000	
Number of Floors:	GF+2	
Water requirement for firefighting in KL :	111.20 KL (120 Minutes)	
Water storage tank provided for firefighting in KL:	1000 KL (1080 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 1000 KL.	
Nearest Fire Station :	Bharuch fire station With 19.7 KM distance	
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 1000 KL. SEAC found it as per the requirement.		
H-4	Details of Fire NOC/Certificate:	
Shall be obtained after receipt of EC.		
H-5	Details of Occupational Health Centre (OHC):	
-		
Number of permanent Employee :	75	
Number of Contractual person/Labour :	25	
Area provided for OHC:	80 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 :	Bharuch Civil Hospital @ 21 Km	
Name of Antidotes to be store in plant :	Injection -morphia, pethidins, atropins, adrenaline, coramine, novocan, Fomepizole, Cobalt EDTA, Diazem, Epinephina, Efidrine, Ethanol, Milk of Magnesia epicake syrup, Sodium Hydro-Carbonate (4% Conc.), Milk, Lime Juice, Soda Water, Soframycine	
-		
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+ MEE	150	2.5	0.5	3.0	
		Membership of CETP	50	2.0	-	2.0	
2	Air	Installation of stack/vent & it's monitoring facilities including provision of air pollution control System	20	2.0	0.5	2.5	
3	AWH Monitoring	To conduct EMS efficacy & environment monitoring	-	1.0	-	1.0	
4	Hazardous Management	Getting membership of TSDF site & Management of hazardous Waste	10.0	-	-	-	
5	Green belt development	Development of Greenbelt Area	12.5	-	0.5	0.5	
6	Health & Safety	Provision of Occupational Health Centre with Antidotes	25.0	0.5	0.2	0.7	
7	Fire Prevention	Provision of Safety Measures including, PPEs, SCBA, Fire Detectors, Sensors, Alarm, Fire Hydrant, Fire Extinguishers, Proxymate Suits, Foam Trolley, Lightening arrestors etc.	75	1.0	0.5	1.5	
8	Other	CER Cost	52	-	-	-	
		Provision of PLC based SCADA system	50.0	2.6	1.0	3.6	
Total			444.5	11.6	3.2	14.8	

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. 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 Hydrogen storage cylinder and solvent Storage area.
- 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 643 KLD. Unit shall recycle 360 KLD MEE Condensate and Utility Condensate from Utility itself. Hence, fresh water requirement shall not exceed 283 KLD and it shall be met through GIDC supply only. Prior permission from concerned authority shall be obtained for withdrawal of water.
10. The industrial effluent generation from the project shall not exceed 481 KLD.
11. Management of Industrial effluent shall be as under:

Stream-1 (150 KLD)

- 150 KLD effluent shall be treated in Primary, secondary treatment facility and then send to CETP Saykha.
- Treated waste water shall be sent to CETP of Saykha only after complying with the inlet norms of CETP prescribed by GPCB to ensure no adverse impact on Human Health and Environment

Stream-2 (331 KLD):

- 331 KLD industrial effluent from process generated shall be neutralized and then Discharge through in house MEE followed by Spray Dryer.
- Treated waste water shall be sent to CETP only after complying with the inlet norms of common facilities prescribed by GPCB to ensure no adverse impact on Human Health and Environment.

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

12. Domestic wastewater generation shall not exceed 5.0 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 Stream Boiler, TFH and HAG 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. For control of fugitive emission, VOCs, following steps shall be followed :

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

24. Solvent management shall be carried out as follows:

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

25. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, Cl₂, 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:

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 (6344 Sq. m i.e. 33 % of the total plot area within plant) 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 Solar panel tree capacity of 5 KW each with installation each village Saran, Saykha, Godar, Vahiya and pipaliya) 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

08	SIA/GJ/IND3/67467/2021	M/s. VRINDAVAN ENTERPRISE PLOT NO. C-33/1, Saykha GIDC Estate Ta: Vagra, Dist.: Bharuch	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/IND3/67467/2021
1.3. Category of Project :	5 (f) – B1
1.4. Date of application :	18-02-2022
1.5. Documents Submitted by Project Proponent(PP)	EIA report, Form-2, EMP
1.6. TOR No. & Date :	SIA/GJ/195710/2021 dated 10-10-2021
1.7. Date of Public hearing	-
1.8. Technical expert / Environmental Consultant :	M/s. Satva Environ Consultancy
1.9. SEAC Meeting No. and Date:	389th Meeting Dated 28-03-2022
1.10. Compliance of Existing EC & CCA	No earlier EC. CTE order no.: 111544 Dated

02/03/2021,
Date of Validity: 21/12/2027 for
blending and mixing of Dyes
unit has not started any
construction activity at site

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

Sr.	PRODUCT NAME	Cas No.	Existing MT/Month	Additional MT/Month	Total MT/Month
1.	Pigment Yellow 12	6358-85-6	NIL	150	150
2.	Pigment Orange-13	3520-72-7			
3.	Solvent Blue -35 (OIL Green)	17354-14-2			
4.	Solvent Blue -36	14233-37-5			
5.	Solvent Red 23	85-86-9			
6.	Solvent Red 24 (OIL RED)	85-83-6			
7.	Solvent yellow 14 (OIL ORANGE)	842-07-9			
8.	Solvent yellow 16	4314-14-1			
9.	Solvent yellow 18	6407-78-9			
10.	Solvent yellow 2	60-11-7			
11.	Solvent yellow 33	8003-22-3			
12.	Solvent yellow 72	61813-98-7			
13.	Solvent green -3	128-80-3			
	TOTAL		NIL	150	150
	As per CTE				
14.	Blending and mixing of Dyes		200	-50	150
15.	Spray drying of Dyes		300	-150	150

- 3) The project falls under B1 category of project activity 5(f) as per the schedule of EIA Notification 2006.
- 4) The proposal was considered in the SEAC video conference meeting dated 28.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) 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, 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.
- ✓ There is no earlier EC. Unit is having Valid CTE for Blending and mixing of the Board for existing plant. PP submitted CTE self-compliance report for existing plant. Compliance report found satisfactory. PP submitted that there is no legal court case and public complaint against unit.
- 9) Committee asked to submit the following:
- ✓ Submit revised Air Matrix considering Natural Gas utilization in line with solid fuel. Revised quantity of Natural Gas in Air Matrix
 - ✓ Submission of revised lay out with area distribution by providing at least 5.5 meter road for easy movement of fire tender
- 10) Later on PP submitted following details through email on dated 28/03/2022
- ✓ Revised Air Matrix considering Natural Gas utilization and PP has also submitted revised SEAC Format with updated in respective section.
 - ✓ Revised lay out with area distribution by providing 5.5 meter road for easy movement of fire tender and also submitted Revised Plant layout
- 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):		
	Existing	Proposed
	1.5 Crores	2.5 Crores
		Total
		3.5 Crores
Break-up of proposed project Cost:		

Details	Project Cost (Rs. In Crores)
Land	1.5
Building	1.0
Machinery	1.5
Env. & Safety	0.45
Miscellaneous	0.15
Total	4.6

-

A-2 Details of CER -

PP shall carry out CER activities as below:
 Providing Solar Street light (20 Nos) at Saykha Village

B Land / Plot ownership details:

Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/DEE(Road)/BRH/366 dated 03-09-2020

B-1 Plot area

Existing	Proposed	Total
3178.37 Sq. m	-	3178.37 Sq. m.

-

B-2 Area adequacy

SR NO	Area	Proposed in M ²				Percentage
		Ground floor	First Floor	Second Floor	Total	
1	Manufacturing Area	-	745	745	1490	-
2	Lab/Administration	45	-	-	45	1.42
3	Finish Good Storage	100	-	-	100	3.15
4	Raw Material Storage	550	-	-	550	17.30
5	Storage Tank area	100	-	-	100	3.15
6	ETP Area	100	-	-	100	3.15
7	ETP Waste Storage Area	50	-	-	50	1.57
8	Fuel area	50	-	-	50	1.57
9	Utility Area	100	-	-	100	3.15
10	Spray drying	100	-	-	100	3.15
11	Occupational Health Centre	20	-	-	20	0.63
12	Open Area (Road & Parking)	913.37	-	-	913.37	25.43
13	Green Belt	1050	-	-	1050	33.04
	Total Plant Area	3178.37				

Area Adequacy table:

Sr No	Description of Area	Criteria for Storage	Inventory Required	Area Require	Area Propose
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.			(MT) (KL)	d (m ²)	d (m ²)
1	Finished Product Storage Area (1 Week inventory)	150 MT/Month	37.5 MT/Month	50	100
2	Raw Material Store area in Drum and Bag (1 Week inventory)	102 Drum 2124 Bag	21.42 53.100	280	550
3	Storage tank Details (As per PESO Standard)	10 KL X 2 (ODCB & Butanol)	20	25	100
		15 KL X 1 (methanol)	15	20	
4	Storage tank Details (As per Non-PESO Standard)	15 KLX 1 (HCL)	15	20	
5	Effluent Treatment Plant	65 KLD	65 KLD	100	150
6	ETP Waste storage area (30 Day Inventory)	100 MT/Annum	8.3		
7	Spray Drying Area	-	1500 LPH	-	100
8	Utility Area	-	Boiler, HAG	70	150
9	Fuel Area (3 Days Storage)	10 MT/Day	30 MT	30	
10	Fly Ash Storage	150 MT/Annum	12.5	15	
11	Manufacturing Area	150 MT/Month	-	-	975
12	Admin Area	-	-	-	45
13	Occupation health Center	-	-	-	20

Note: The unit is intent to manufacturing of 150 MT/month in plot area of 3178.87 square meter. The unit has proposed dedicated area for raw material storage, Finished goods storage, tank storage area. The unit has also proposed dedicate area for ETP, utility and hazardous waste storage. The unit has proposed 33 % green belt area within plant premises. Looking to the product and its capacity, the area is adequate to handle proposed production

➤ 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	50	1000	1050
% of total area	2.0	31.0	33.0

Comments:

The condition shall be given that -

- The PP shall develop green belt (1050 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
10	15	25

-

D WATER**D-1 Source of Water Supply**

- Saykha GIDC Water supply

Comments:

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

D-2 Water consumption (KLD)

-

Sr No	Category	Water Consumption in KL/Day			Remarks
		Existing	Additional	Proposed Total	
1.	Domestic Purpose	3.0	2.0	5	
2.	Gardening	3.0	1.0	4.0	Reutilized from STP
3.	INDUSTRIAL				
	Process	NIL	51	51	Fresh
	Cooling	NIL	5.0	5.0	(3 KLD Condensate + 2 KLD Fresh)
	Boiler	NIL	15.0	15.0	(10 KLD Condensate + 5 KLD Fresh)
	Washing	10.0	1.0	11.0	Fresh
	Total water Consumption Domestic	3.0	2.0	5.0	
	Total water Consumption (Industrial)	10.0	72.0	82.0	

	Total Water Consumption (1 + 2 + 3)	16.0	75.0	91.0	
	Reuse Water & Internal Circulation	NIL	17.0	17.0	
	Total Fresh Water	16.0	58.0	74.0	

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 KL/Day			Remarks
		Existing	Additional	Proposed Total	
1.	Domestic Purpose	3.0	1.0	4.0	
2.	INDUSTRIAL				
	Process	NIL	50	50	Send to CETP Saykha
	Cooling	NIL	2.0	2.0	
	Boiler	NIL	2.0	2.0	
Washing	10	1	11		
	Total Waste Water Generation Domestic	3.0	1.0	4.0	Utilized in Gardening
	Total Waste Water Generation (Industrial)	10.0	55.0	65.0	

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)

4.0 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 4.0 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)

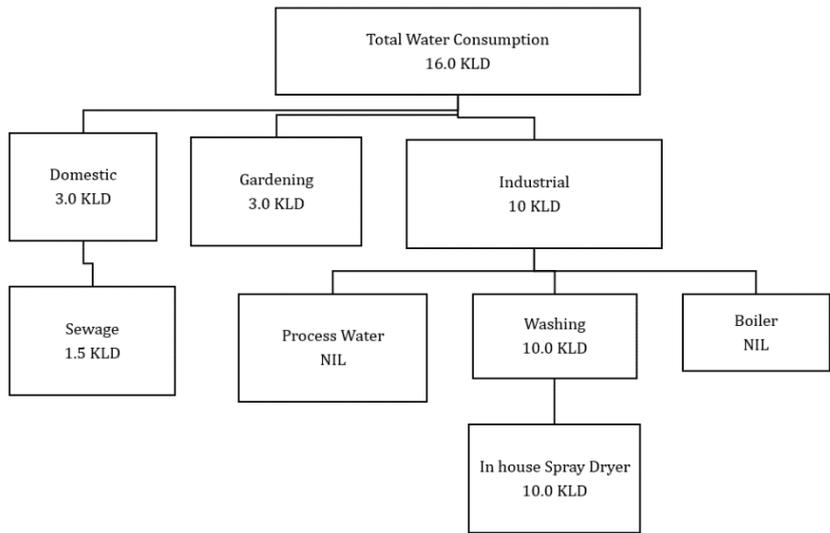
Sr. no.	Quantity	Facility
1	65.0	CETP Saykha
Total	65.0	

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

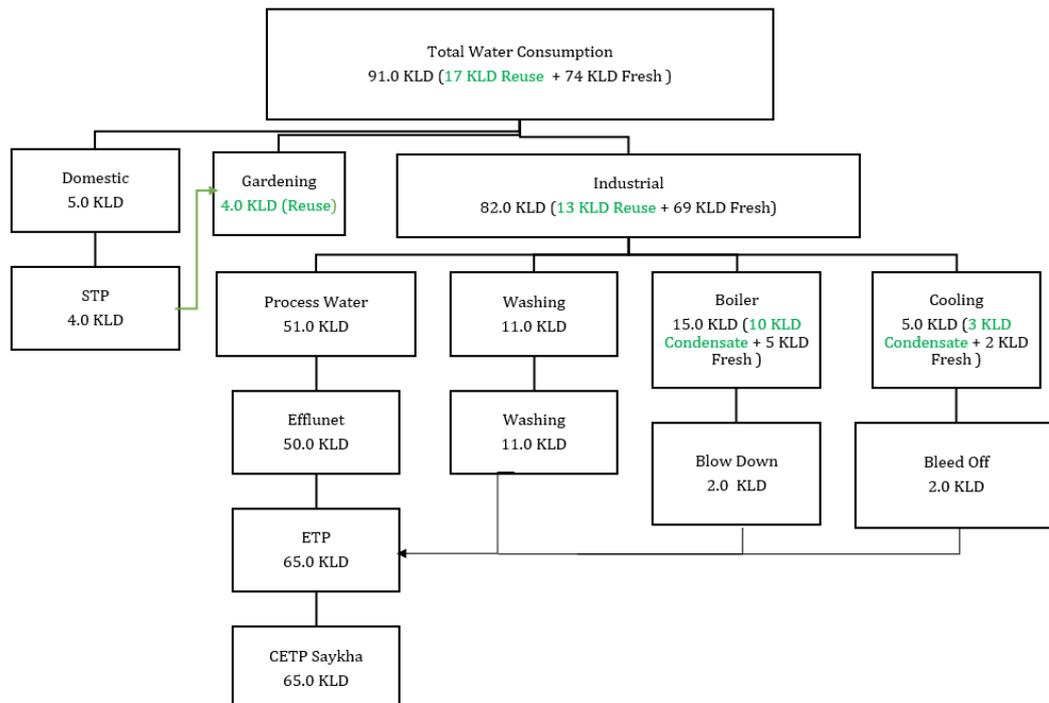
The unit is permitted from GIDC vide letter No:
GIDC/BRH/XEN/WD/1411 Dated 06/01/2021 for discharge 65 KLD in CETP Saykha

D-5b Simplified water balance diagram

Existing Water balance



After Expansion



D-5c

Summary

Summary of water requirement	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD	Remarks
Total water requirement for the project (A)	16.0	75	91.0	
Quantity to be recycled (B)	NIL	17.0	17.0	
Total fresh water requirement (C)	16.0	58.0	74.0	

Ensure **Total water requirement = Fresh water + Recycled water**

i.e. A = B + C

Comments:

1. Total water requirement for the project shall not exceed 91.0 KLD. Unit shall reuse 17.0 KLD of Condensate reuse within premises. Hence, fresh water requirement shall not exceed 74.0 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:
 - 65 KLD Waste water generate from manufacturing Process and Other ancillary Operation, shall be treated in Primary, secondary treatment facility and then send to CETP Saykha
 - Treated waste water shall be sent to CETP of Saykha only after complying with the inlet norms of CETP prescribed by GPCB to ensure no adverse impact on Human Health and Environment
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 :245 KVA**E-2 Flue gas emission details**

Sr. no	Stack attached to	Stack height in meter	Fuel	Consumption	APCM	Remark
1.	Direct fire Hot Air Generator for Spray Dryer (8 Lac Kcal/h)	-	Natural Gas or briquette of agro waste	1500 SCM/Day (50 SCM/day Existing + 1450 SCM /Day Additional) or 6 MT/Day	Common Stack with Spray dryer	Existing
2.	Steam Boiler (2 TPH)	30	Natural Gas or briquette of agro waste	400 SCM/ Day Or 4 MT/Day	Multi Cyclone Separator followed by Two Stage Water Scrubber	Proposed

E-3 Process gas

Sr. no	Stack attached to	Stack height in meter	APCM	Pollutant	Remark
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1	Spray Dryer (1500 LPH.)	21	Multi Cyclone Separator followed by Two Stage Water Scrubber with Dipping Tank	PM	Existing
-					
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					
Solvent Name		Consumption	Generation	Recovery %	Loss %
		MT/Month	MT/Month		
Butanol		2493	2444	98.0	2.0
Methanol		3333	3200	96.0	4.0
ODCB		838	830	99.0	1.0
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 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 bulk drugs and fine chemical, 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						
Sr . No.	Type of Hazardous Waste	Sources	Hazardous Waste Category	Existing MT/Year	Proposed MT/Year	Quantity (MT/Year)	Mode of Disposal
1.	ETP Sludge	ETP Area	35.3	NIL	100	100	Collection, storage, Transportation and Dispose to Active TSDF Site
2.	Used Oil	Plant Machinery	5.1	NIL	0.05	0.05	Collection, storage, Reuse within premises.
3.	Discarded Container	Material handling and Storage	33.1	NIL	5	5	Collection, storage, Transportation and Dispose by selling to Registered Recycler
4.	Solvent Residue	Distillation Unit	26.4	NIL	75.0	75.0	Collection, Storage, And Send For Co-Processing CHWIF

5.	Spent Solvent	Solvent Dyes	--	NIL	2520	2520	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 150 MTPA. ✓ STP sludge generation shall be 4.0 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								
-									
-									
Sr. No	Name of Chemical	Storage Capacity in KL	Number of Tank	Max Storage MT	IDLH ppm	Boiling Point °C	Flash Point °C	Nature of Chemical	Fire extinguisher Type
1	Methanol	15 KL	1	15 KL	6000	64.7	9	Flammable liquid	CO2, Dry Chemical or Foam
2	ODCB	10 KL	1	10 KL	100	179	67	Flammable liquid	CO2, Dry Chemical or Foam
3	Butanol	10 KL	1	10 KL	1400	117.7	29	Flammable liquid	CO2, Dry Chemical or Foam
<u>Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags etc.</u>									

Storage of Hazardous chemicals in Tanks

- The Entire plant shall be operated by PLC based SCADA semi Atomization 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

	<p>oxygen. If the victim is not breathing, provide artificial respiration. Get medical attention.</p> <ul style="list-style-type: none"> • 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. <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

	<p>generated to a safe area</p> <ul style="list-style-type: none"> • 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 	
<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:	
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 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. • 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:	3178.37
Area utilized for plant activity:	2860
Area utilized for Hazardous Chemicals Storage:	-
Number of Floors:	GF+2
Water requirement for firefighting in KL:	17.160 (120 Minutes)
Water storage tank provided for firefighting in KL:	250 KL (1748 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 200 KL.
Nearest Fire Station :	Bharuch fire station With 21.0 KM distance
Applicability of Off Site Emergency Plan:	Yes

Comments:

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

H-4 Details of Fire NOC/Certificate:

Shall be obtained after receipt of EC.

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

-	
Number of permanent Employee:	15
Number of Contractual person/Labour:	15
Area provided for OHC:	20 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 @ 19.5 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)	Operatin g Cost (Lacs /Month)	Maintenan ce Cost (Lacs/ Month)	Total Recurrin g Cost (Lacs/ Month)
1	Effluent Treatment Plant	Installation of ETP	20	0.5	0.5	1.0
		Membership of CETP	20	1.0	-	1.0
2	Air	Installation of stack/vent & it"s monitoring facilities including provision of air pollution control System	15.0	0.30	0.10	0.40
3	AWH Monitoring	To conduct EMS efficacy & environment monitoring	-	1.0	-	1.0
4	Hazardous Managemen t	Getting membership of TSDF site	1.0			
5	Green belt developme nt	Development of Greenbelt Area	2.10	-	0.5	0.5

6	Health & Safety	Provision of Occupational Health Centre with Antidotes	10.0	0.7	1.0	1.7
7	Fire Prevention	Provision of Safety Measures including PPE, Fire Detectors, Sensors, Alarm, Fire Hydrant, Fire Extinguishers, Proxymate Suits, Foam Trolley, Lightening arrestors etc.	45	1.0	0.5	1.5
8	Other	CER Cost	2.5	-	-	-
		Provision of PLC based SCADA system	15.0	2.6	1.0	3.6
Total			130.6	7.1	3.6	10.7

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.

14) DELIBRATION AND RECOMMENDATION:

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

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

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

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

SPECIFIC CONDITIONS:

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

8. Safety & Health:

- a) 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 solvent Storage area.
- 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 91 KLD. Unit shall recycle 17 KLD Utility

Condensate from Utility itself. Hence, fresh water requirement shall not exceed 74 KLD and it shall be met through GIDC supply only. Prior permission from concerned authority shall be obtained for withdrawal of water.

10. The industrial effluent generation from the project shall not exceed 65 KLD.

11. Management of Industrial effluent shall be as under:

- ✓ 65 KLD Waste water generate from manufacturing Process and Other ancillary Operation, shall be treated in Primary, secondary treatment facility and then send to CETP Saykha
- ✓ Treated waste water shall be sent to CETP of Saykha 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 4.0 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 and Hot Air Generator 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 workzone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of

Industrial Safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.

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

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

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

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

24. Solvent management shall be carried out as follows:

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

25. Regular monitoring of ground level concentration of PM₁₀, PM_{2.5}, SO₂, NO_x, 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 (1050 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 (Providing Solar Street light (20 Nos) at Saykha Village) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
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

09	SIA/GJ/IND3/67619/2020	M/s. Maruti Dyestuff Plot no. 136/1, Phase –I, GIDC Naroda, 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/IND3/67619/2020
1.3. Category of Project :	5 (f) – B1
1.4. Date of application :	16-11-2021
1.5. Documents Submitted by Project Proponent(PP)	EIA report, Form-2, EMP
1.6. TOR No. & Date :	SIA/GJ/192710/2020 Dated 16-10-2020
1.7. Date of Public hearing	-

1.8. Technical expert / Environmental Consultant :	M/s. Satva Environ Consultancy
1.9. SEAC Meeting No. and Date:	389th Meeting Dated 28-03-2022
1.10. Compliance of Existing EC & CCA	No earlier EC. Consent order no.: AWH-98142, Date of Validity: 30-09-2023 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.	Existing in MT/Month	Proposed MT/Month	Proposed Total MT/Month
1.	Reactive Blue 220/250/22 (Reactive navy blue BFN)	90341-71-2	2.5	47.5	50
2.	Reactive yellow 160(ME4GI) /15(GR) 135(HE6G)/ 95(P6G) /57(H7G)/ 86(M8G)	129898-77-7			
3.	Reactive Red 141/250/21/Reactive Red 120(HE3B)	61931-52-0			
4.	Reactive orange-13(H2R)/ 16(3R)/ 122(ME2RL)	12225-85-3			
5.	Reactive Black 5	17095-24-8	Nil		
6.	Reactive Black HN	12225-26-2			
7.	Reactive Black B	17095-24-8			
8.	Reactive Black RL	12731-63-4			
9.	Reactive Black WNN/RG	17095-24-8			
10.	Reactive Blue 194	93050-78-3			
11.	Reactive Blue BB	12678-16-6			
12.	Reactive Navy Blue ME2RL	27354-18-1			
13.	Reactive Blue P3R	12236-92-9			
14.	Reactive Yellow HE4G	59112-78-6			
15.	Reactive Golden Yellow HER	93050-80-7			
16.	Reactive Golden Yellow HR	35642-64-9			
17.	Reactive Golden Yellow MERL	93050-80-7			
18.	Reactive Golden Yellow R	2570-78-1			
19.	Reactive Golden Yellow RNL	12220-08-5			
20.	Reactive Green HE4BD	NA			
21.	Reactive Megenta HB,Violet 13	12270-87-0			
22.	Reactive Megenta MB	27354-18-1			
23.	Reactive Blue P2R	68259-02-9			
24.	Reactive Navy Blue RGB/HRGBL	93951-21-4			
25.	Reactive Orange 122	12220-12-1			
26.	Reactive Orange 2R	42986-20-1			
27.	Reactive Orange 3R	42586-22-1			
28.	Reactive Orange ME2RL (Direct Process)	12220-12-1			

29.	Reactive Orange W3R	12220-12-1			
30.	Reactive Purple H3R	12239-45-1			
31.	Reactive Red 195	93050-79-4			
32.	Reactive Red 24	70210-20-7			
33.	Reactive Red Brown H4R	12225-66-0			
34.	Reactive Red BS	88232-20-6			
35.	Reactive Red CD	NA			
36.	Reactive Red H8B	12237-00-2			
37.	Reactive Red HE7B	61931-52-0			
38.	Reactive Orange M2R	6373-74-6			
39.	Reactive Orange ME2RL (Acetyl Process)	12220-12-1	NIL	25	25
40.	Reactive Blue 5RH	12236-84-9			
41.	Reactive Black 39	NA			
	TOTAL		2.5	72.5	75

- 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 28.03.2022.
- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) 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, 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) 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):							
	Existing	Proposed					
	1.0 Crores	1.0 Crores					
		Total					
		2.0 Crores					
Break-up of proposed project Cost:							
	Details	Project Cost (Rs. In Crores)					
	Land	0.5					
	Building	0.5					
	Machinery	0.8					
	Env. & Safety	0.1					
	Miscellaneous	0.1					
	Total	2.0					
	-						
A-2	Details of CER -						
PP shall carry out CER activities as below: <input checked="" type="checkbox"/> To provide two numbers of RO Plant capacity of 100 LPH each of school Naroda village							
B	Land / Plot ownership details:						
Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM/AHM/TRF/FTO/NAR1/54 dated 25/03/2019.							
B-1	Plot area						
	Existing	Proposed					
	963.69 Sq. m	NIL					
		Total					
		963.69 Sq. m					
	-						
B-2	Area adequacy						
SR . NO	Area	Existi ng in Sq. m	Proposed in M ²				Perce ntage
			Groun d floor	First Floor	Seco nd Floor	Total	
1	Manufacturing area	260	-	385	385	770	-
2	Raw material Storage	70	260	-	-	260	27.0
3	Finish good Storage	50	80	-	-	80	8.3
4	ETP area	20	33	-	-	33	3.4
5	ETP Sludge Storage	-	15	-	-	15	1.6
6	Spray Drying Area	-	75	-	-	75	7.8
7	Utility area	50	71.5	-	-	71.5	7.4
8	Office and Lab	30	30.0	-	-	30.0	3.1
9	Occupation Health Center	-	15.0	-	-	15.0	1.6
10	Open area	463.69	214.19	-	-	214.19	22.2

11	Green Belt Area	20	193	-	-	193	20.0
	Total Area	963.69	963.69				100
11	Green belt Area (outside Plant Premises)	-	150			150	

Area Adequacy table:

S r N o .	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)	75 MT/Month	18.75	30	80
2	Raw Material Store area in Drum and Bag (1 Week inventory)	24 Drum	5.04	11.0	260
		2056 Bag	51.3	60.0	
		Tank for HCL - 3 KL	3 KL	5.0	
3	Effluent Treatment Plant	5.6 KLD	5.6 KLD	30	48
	ETP Sludge storage area (90 Day Inventory)	25 MT/Annum	7 MT	10	
4	Spray drying Area	-	1000 LPH	-	75
5	Utility Area	-	Boiler + HAG	50	71.5
6	Adm. Office	-	-	-	30.0
7	OHC	-	-	-	15.0
8	Manufacturing Area	75 MT/Month	-	-	850.0

Note: The unit has proposed expansion up to 75 MT/Month for manufacturing of dyes. The unit has proposed dedicated process area of 850 square meter which is adequate looking to same unit operation. The unit has also proposed raw material storage (260 square meter), product storage (80 square meter) and also proposed area for utility, ADM building and OHS. The unit has proposed 20 % green belt area within premises and 15 % outside premises within GIDC. Looking to manufacturing process and as no any highly hazardous utilization, this expansion is justified in existing plot

➤ 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	20 inside	173 inside +150 outside in GIDC	193 inside +150 outside in GIDC
% of total area	2.0 % Inside	18% Inside + 15%	20 % Inside +

		Outside	15% Outside		
Comments:					
The condition shall be given that -					
<ul style="list-style-type: none"> ➤ The PP shall develop green belt [193 m² (20%) inside plant premises + 150 m² (15%) at outside plant premises within GIDC Naroda = Total: 343 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. 					
C	Employment				
Employment generation					
	Existing	Proposed	Total		
	15	10	25		
-					
D	WATER				
D-1	Source of Water Supply				
<ul style="list-style-type: none"> ➤ Naroda GIDC Water supply 					
Comments:					
<ul style="list-style-type: none"> ➤ Prior permission from concerned authority shall be obtained for withdrawal of water. 					
D-2	Water consumption (KLD)				
-					
S r N o	Category	Water Consumption KLD			Remark
		Existing	Additional	After Expansion	
1.	Domestic Purpose	0.5	0.5	1.0	
2.	Gardening	-	0.8	0.8	Utilized from STP
3.	INDUSTRIAL				
	Process	1.5	14.50	16.0	
	Boiler	1.0	6.0	7.0	
	Washing	1.5	1.00	2.5	
	Total water Consumption (Domestic)	0.5	0.5	1.0	
	Total water Consumption (Industrial)	4.0	21.5	25.5	
-					
Comments:					

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

D-3 Waste water generation (KLD)

Sr No	Category	Waste water Generation KLD			Remark
		Existin g	Additio nal	After Expan sion	
1.	Domestic Purpose	0.4	0.4	0.8	
2.	INDUSTRIAL				
	Process	1.3	0.7	2.0	Send to Common Facility
	Boiler	0.8	0.3	1.1	CETP
	Washing	1.5	1.0	2.5	CETP
	Total Sewage generation (Domestic)	0.4	0.4	0.8	
	Total Waste Water generation (Industrial)	3.6	2.0	5.6	

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)

0.8 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 0.8 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.

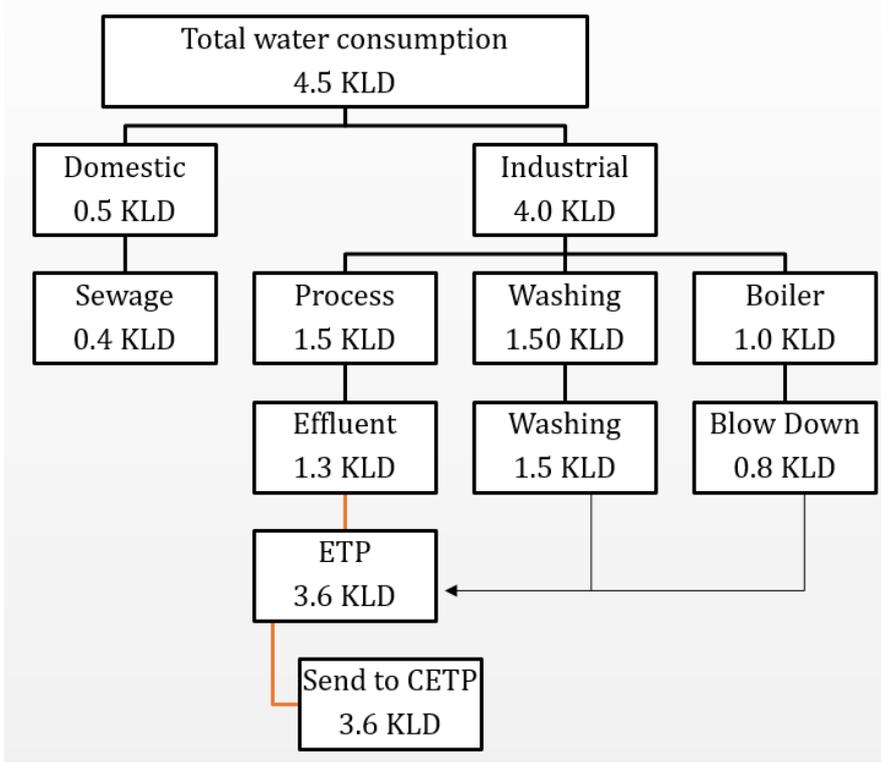
D-5a Break-up of waste water disposal & facility (For Industrial)

Sr. no.	Quantity	Facility

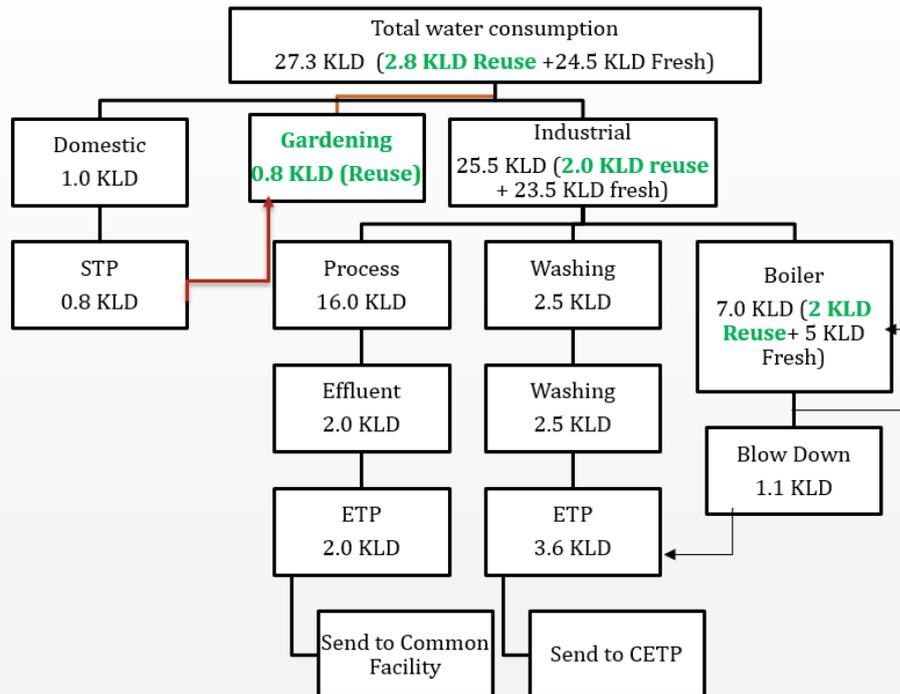
1	3.6	CETP Naroda
2	2.0	Common spray drying Facility NEPL
Total	5.6	
Membership Certificate no. & Date (For CETP/CMEE/CSD etc.)		
The unit is permitted from GIDC vide letter Dated 14/12/2021 for discharge 3.6 KLD in CETP Naroda and 2.0 KLD send to Common spray drying Facility NEPL		

D-5b Simplified water balance diagram

Existing Water balance



After Expansion



D-5c Summary

Summary of water requirement	Existing KLD	Proposed (Additional) KLD	Total after Expansion KLD	Remarks
Total water requirement for the project (A)	4.5	22.80	27.30	
Quantity to be recycled (B)	NIL	2.80	2.80	
Total fresh water requirement (C)	4.5	20.00	24.50	
Ensure Total water requirement = Fresh water + Recycled water i.e. A = B + C				

Comments:

5. Total water requirement for the project shall not exceed 27.30 KLD. Unit shall reuse 2.80 KLD of Condensate reuse within premises. Hence, fresh water requirement shall not exceed 24.50 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained
6. Management of Industrial effluent shall be as under:
 - 5.6 KLD Waste water generate from manufacturing Process and Other ancillary Operation, from which 3.6 KLD Waste water generation from Washing and boiler blow down shall be treated in Primary treatment facility and then send to CETP Naroda and remaining 2.0 KLD waste water generation from Manufacturing

Process and send to Common facility.

- Treated waste water shall be sent to CETP of Naroda only after complying with the inlet norms of CETP prescribed by GPCB to ensure no adverse impact on Human Health and Environment

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

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

E AIR

E-1 Power (Electricity) requirement :245 KVA

E-2 Flue gas emission details

-

Sr. no	Stack attached to	Stack height in meter	Fuel	Consumption	APCM	Remark
1	Small Boiler 0.300TPH (Replace with 1 TPH)	30	PNG	100 SCM/Day	Adequate Stack Height	Existing
2	Hot Air generator 2 Lac Kcal/hr Lakh kcal/hr Replace with (10 lakh Kcal/hr)	30				
3	Hot Air Generator (10 Lakh Kcal/Hr)	30	PNG	2500 SCM/Day	Common Stack With Spray Dryer	Propose d
4	Steam Boiler (1 TPH)	30	PNG	800 SCM/Day	Adequate Stack Height	Propose d

-

E-3 Process gas

-

Sr. no	Vent attached to	Stack height in meter	APCM	Remark
1	Spray Dryer for Product (1000 LPH)	30	Multi Cyclone Separator + Bag filter with Two Stage Water Scrubber	Proposed

-

E-4 Fugitive emission details with its mitigation measures.

- 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

	<p>valves, pressure release valves and safety valves etc.</p> <ul style="list-style-type: none"> ➤ 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
	<p>Comments for E2, E3 & E4:</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.
	There shall be no any type of solvent required in manufacturing process
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"> ➤ 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. <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:
	Not Applicable
	<p>Comments:</p> <ul style="list-style-type: none"> ➤ Measures for achieving maximum solvent recovery and minimize VOC generation, inclusive of VOC detectors, pumps, maintenance of pipelines, proper ventilation etc., provided are as per requirement. ➤ Spent solvents shall be recovered by in-house distillation in such a manner that recovery shall not be achieved to the maximum extent and recovered solvent shall be reused in the process. Solvent recovery system with adequate reflux condensers shall be provided for controlling escape of low boiling solvents (VOCs).

G Hazardous waste							
G-1 Hazardous waste management matrix							
Sr. No	Types of Hazardous Waste	Sources	Category	Existing MT/Year	Proposed MT/Year	Ultimate MT/Year	Disposal
1	ETP Sludge	ETP Area	35.3	0.40	24.6	25.0	Collection, storage, Transportation and Dispose to Active TSDF Site
2	Used Oil	Plant Machinery	5.1	-	0.050	0.050	Collection, storage, Reuse within premises.
3	Discarded Container	Material Storage and Handling	33.1	1.0	3.0	4.0	Collection, storage, Transportation and Dispose by selling to Registered Recycler
	Empty Bags with liner			10.0	5.0	15.0	
4	Process Waste	Mfg. Process	26.1	7.2	-7.2	NIL	Collection, Storage, Transportation & Disposal at TSDF
Comments: <ul style="list-style-type: none"> ➤ Waste management includes hazardous waste management and other solid waste management. Hazardous waste-management comprises of collection, storage, transportation, disposal, incineration, and recycle of waste. SEAC examined the details provided and found it as per requirement. ➤ The project proponent has to obtain membership of TSDF site & CHWIF before obtaining CTO of GPCB. 							
G-2 Non- Hazardous waste management matrix							
<ul style="list-style-type: none"> ✓ There shall be no Fly ash Generation Natural gas utilized as a Fuel ✓ STP sludge generation shall be 1.0 MTPA Comments: <ul style="list-style-type: none"> ➤ STP sludge shall be collected and used as manure in gardening activity or send to TSDF site for landfilling. 							
H SAFETY details							
H-1 Details regarding storage of Hazardous chemicals							
-							
-							
Storage of Hazardous chemicals other than Tanks i.e. Drum, Barrels, Carboys, Bags							

etc.

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

Storage of Hazardous chemicals 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

CORROSIVE& CHEMICALS	<ul style="list-style-type: none"> • The charging of material shall be carried out by semi atomization • Dyke wall provided • Dyke wall with sufficient size is provided. • Tank, valve, pipeline are checked and maintain, in good condition. • Apron, Hand gloves, gumboot, goggles and helmet 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. 	
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 	
<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:
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Type of Process	Safety measures including Automation
Process safety	<ul style="list-style-type: none"> • Safety measures shall be adopted from the design stage. • 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. • 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. • 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
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Total Plot Area:	963.69
Area utilized for plant activity:	1961.3
Area utilized for Hazardous Chemicals Storage:	-
Number of Floors:	GF+2
Water requirement for firefighting in KLD:	11.78 (120 Minutes)
Water storage tank provided for firefighting in KLD:	100 KL (1020.4 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 :	Naroda fire station With 3.15 KM distance
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 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

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)	Operati ng Cost (Lacs /Month)	Maintena nce Cost (Lacs/ Month)	Total Recurri ng Cost (Lacs/ Month)
1	Effluent Treatment Plant	Installation of ETP/ membership of Common Facility	5.0	0.2	0.05	0.25
2	Air	Installation of stack/vent & it"s monitoring facilities including provision of air pollution control System	3.0	.1	0.10	0.2
3	AWH Monitoring	To conduct EMS efficacy & environment monitoring	-	0.2	-	0.2
4	Hazardous Managem ent	Getting membership of TSDF site	0.3			-
5	Green belt developme nt	Development of Greenbelt Area	1.0	-	0.20	0.20

6	Health & Safety	Provision of Occupational Health Centre with Antidotes	3.0	0.5	0.2	0.7
7	Fire Prevention	Provision of Safety Measures including person Protective Equipment, Fire Detectors, Sensors, Alarm, Fire Hydrant, Fire Extinguishers, Lightening arrestors etc.	12.0	1.0	0.5	1.5
8	Other	CER Cost	1.0	-	-	-
		Provision of PLC based semi atomization	5.0	1.6	0.5	2.1
Total			30.3	3.6	1.55	5.15

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 water sprinkler to the Raw material Storage area.
- 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

8. Total water requirement for the project shall not exceed 27.30 KLD. Unit shall recycle 2.80 KLD Utility Condensate from Utility itself. Hence, fresh water requirement shall not exceed 24.50 KLD and it shall be met through GIDC supply only. Prior permission from concerned authority shall be obtained for withdrawal of water.

9. The industrial effluent generation from the project shall not exceed 5.6 KLD.
10. Management of Industrial effluent shall be as under:
 - ✓ 5.6 KLD Waste water generate from manufacturing Process and Other ancillary Operation, from which 3.6 KLD Waste water generation from Washing and boiler blow down shall be treated in Primary treatment facility and then send to CETP Naroda and remaining 2.0 KLD waste water generation from Manufacturing Process and send to Common facility
 - ✓ Treated waste water shall be sent to CETP of Naroda only after complying with the inlet norms of CETP prescribed by GPCB to ensure no adverse impact on Human Health and Environment
11. Domestic wastewater generation shall not exceed xx KL/day for proposed project and it shall be treated in STP. It shall not be disposed off into soak pit. Treated sewage shall be utilized for gardening and plantation purpose within premises after achieving on-land discharge norms prescribed by the GPCB.
12. During monsoon season when treated sewage may not be required for the plantation / Gardening / Green belt purpose, it shall be stored within premises. There shall be no discharge of waste water outside the premises in any case.
13. Unit shall provide buffer water storage tank of adequate capacity for storage of treated waste water during rainy days.
14. The unit shall provide metering facility at the inlet and outlet of ETP and maintain records for the same.
15. 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:

16. Unit shall not exceed fuel consumption for Steam Boiler and hot Air generator as per the point no. E-2 as mentioned above.
17. Unit shall provide adequate APCM with flue gas generation sources to achieve the norms prescribed by GPCB.
18. Unit shall provide adequate APCM with process gas generation sources as the point no. E-3 as mentioned above.
19. PP shall use approved fuels only as fuel in boilers.
20. The fugitive emission in the workzone 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, 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 [193 m² (20%) inside plant premises + 150 m² (15%) at outside plant premises within GIDC Naroda = Total: 343 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.

OTHERS:

31. The project proponent shall carry out the (To provide two numbers of RO Plant capacity of 100 LPH each of school Naroda village) proposed under CER and it shall be part of the Environment Management Plan (EMP) as per the MoEF&CC's OM no. F. No. 22-65/2017-IA.III dated 30.09.2020. This shall be monitored and the monitoring report shall be submitted to the regional office of MoEF&CC as a part of half-yearly compliance report and to the District Collector. The monitoring report shall be posted on the website of the project proponent.
32. 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:

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

10	SIA/GJ/IND3/71427/2021	VOXCO Pigments and Chemicals Pvt. Ltd. Plot No. C-376, GIDC Saykha, Dist. Bharuch, 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/IND3/71427/2021
1.3. Category of Project :	5 (f) – B1
1.4. Date of application :	25.01.2022
1.5. Documents Submitted by Project Proponent(PP)	EIA report, Form-2, EMP
1.6. TOR No. & Date :	File No. SIA/GJ/151008/2021, Dated: 31.08.2021
1.7. Date of Public hearing	Not applicable
1.8. Technical expert / Environmental Consultant :	M/s. San Envirotech Pvt. Ltd. Dr. Mahendra Sadaria
1.9. SEAC Meeting No. and Date:	389 th meeting dated 28.03.2022

1.10. Compliance of Existing EC & CCA

Not applicable, as this is a proposed project.

2) This is proposed project for manufacturing of Organic & inorganic Pigment as mentioned below:

Sr. No.	Name of the Products	CAS no.	Quantity MT/Month	*End-use of products
1	Pigment Yellow 1	2512-29-0	400	Coloring agent for Paints/ Inks/Plastics/ Rubber/Textile
2.	Pigment Yellow 3	6486-23-3		
3.	Pigment Yellow 12	6358-85-6		
4.	Pigment Yellow 13	5102-83-0		
5.	Pigment Yellow 14	5468-75-7		
6.	Pigment Yellow 16	5979-28-2		
7.	Pigment Yellow 17	4531-49-1		
8.	Pigment Yellow 62	12286-66-7		
9.	Pigment Yellow 65	6528-34-3		
10.	Pigment Yellow 74 2&5 GSC	6358-31-2		
11.	Pigment Yellow 83	5567-15-7		
12.	Pigment Yellow 168	71832-85-4		
13.	Pigment Yellow-191	129423-54-7		
14.	Pigment Red 2	6041-94-7		
15.	Pigment Red 3 SC	2425-85-6		
16.	Pigment Red 5	6410-41-9		
17.	Pigment Red 8	6410-30-6		
18.	Pigment Red 12	6410-32-8		
19.	Pigment Red 48:1	7023-61-1		
20.	Pigment Red 48:2	7023-61-2		
21.	Pigment Red 48:3	15782-05-5		
22.	Pigment Red 48:4	5280-66-0		
23.	Pigment Red 53:1	5160-02-1		
24.	Pigment Red 57:1	5281-04-9		
25.	Pigment Red 63:1	6417-83-0		
26.	Pigment Red 112	6535-46-2		
27.	Pigment Red 116	5280-68-2		
28.	Pigment Red 170	2786-76-7		
29.	Pigment Red 184	99402-80-9		
30.	Pigment Orange 5	3468-63-1		
31.	Pigment Orange 13	3520-72-7		
32.	Pigment Orange 16	6505-28-8		
33.	Pigment Orange 34	15793-73-4		
B	High Performance Pigments (Solvent Based Pigment)			
34.	Pigment Yellow 93	5580-57-4	100	Coloring agent for Paints/ Inks/Plastics/ Rubber/Textile
35.	Pigment Yellow 109	5045-40-9		
36.	Pigment Yellow 110	5590-18-1		
37.	Pigment Yellow 128	79953-85-8		
38.	Pigment Yellow 138	56731-19-2		
39.	Pigment Yellow 139	36888-99-0		
40.	Pigment Yellow 147	4118-16-5		
41.	Pigment Yellow 151	61036-28-0		
42.	Pigment Yellow 154	68134-22-5		
43.	Pigment Yellow 155	68516-73-4		

44.	Pigment Yellow 174	78952-72-4		
45.	Pigment Yellow 175	35636-63-6		
46.	Pigment Yellow 176	90268-24-9		
47.	Pigment Yellow 180	77804-81-0		
48.	Pigment Yellow 181	74441-05-7		
49.	Pigment Yellow 183	65212-77-3		
50.	Pigment Yellow 185	76199-85-4		
51.	Pigment Yellow 192	56279-27-7		
52.	Pigment Yellow 194	82199-12-0		
53.	Pigment Red 122	980-26-7		
54.	Pigment Red 144	5280-78-4		
55.	Pigment Red 149	4948-15-6		
56.	Pigment Red 166	71819-52-8		
57.	Pigment Red 168	4378-61-4		
58.	Pigment Red 176	12225-06-8		
59.	Pigment Red 177	4051-63-2		
60.	Pigment Red 178	3049-71-6		
61.	Pigment Red 179	5521-31-3		
62.	Pigment Red 185	51920-12-8		
63.	Pigment Red 254	84632-65-5		
64.	Pigment Red 264	88949-33-1		
65.	Pigment Orange 36	12236-62-3		
66.	Pigment Orange 43	4424-06-0		
67.	Pigment Orange 61	76168-74-6		
68.	Pigment Orange 64	72102-84-2		
69.	Pigment Violet 19	1047-16-1		
70.	Pigment Violet 23	215247-95-3		
C	Pigment Intermediates			
71.	3'3 DCB	91-94-1	100	Pigments Intermediates
72.	Aceto acetanilide (AAA)	102-01-2		
73.	2,4'-Dimethyl Acetoacetanilide (AAMX)	97-36-9		
74.	O-Aceto acetanilide (AAOA)	92-15-9		
75.	2'-Methyl Aceto Acetanilide (AAOT)	93-68-5		
76.	Fast Red B Base	97-52-9		
D	Blending (powder and paste) and packing of different kind of Pigment	--	200	Paints / coatings /Plastics
Total			1000	--

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 28.03.2022.

- 5) Project proponent (PP) and their Technical Expert remain present during video conference meeting.
- 6) Committee deliberated on Product profile, Layout plan, Storage details, Process safety, Fire safety, water balance & waste water management, Flue gas and process gas emission & Air Pollution Control System, Hazardous waste matrix, EMP, CER, Green belt, etc.
- 7) 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 to December, 2021. Ambient Air Quality monitoring was carried out PM₁₀, PM_{2.5}, SO_x, NO_x, 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 "BREEZE". 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) PP submitted satellite map showing that there is no any water bodies, villages, School, monuments etc. within 500 m radius of the project site. Aerial distance of nearest habitat of village Vorasamni is @ 0.70 Km. PP also submitted that there are no Eco sensitive zones, wild life sanctuaries within the 10 km area from the boundary of the project site.
- 10) Committee asked to submit the following:
- ✓ Committee has observed typographical mistake in summing of total CER cost, asked to submit revised table and asked for Provisional/Final membership certificate of CETP, Saykha.
- 11) Later on PP submitted following details through email
- 12) Details of CER:

Sr. No.	Activities	Years (Rs. in Lakhs)			Total Budget (Rs. in Lakhs)
		1 st	2 nd	3 rd	
1.	Development of Water Harvesting pond at village Bhersam	15			15
2.	Digging of 4 pond of Vorasamni	10	10	20	40
3.	Road side plantation from Project side to Vilayat Industrial Estate (Around 2.5 Km)	5	5	5	15
4.	Five years maintenance of greenbelt area	3.6 x 5 Years			18
				Total	88

- ✓ They have applied to CETP, Saykha for membership certificate. They shall submit to the SEAC as early as possible.

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):															
	<table border="1"> <tr> <td>Total Project</td> </tr> <tr> <td>40.0 Crore</td> </tr> </table>	Total Project	40.0 Crore													
Total Project																
40.0 Crore																
	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>7.0</td> </tr> <tr> <td>Building</td> <td>26.08</td> </tr> <tr> <td>Machinery</td> <td>5.0</td> </tr> <tr> <td>Env. & Safety</td> <td>1.72</td> </tr> <tr> <td>Miscellaneous</td> <td>0.2</td> </tr> <tr> <td>Total</td> <td>40.0</td> </tr> </tbody> </table>	Details	Project Cost (Rs. In Crores)	Land	7.0	Building	26.08	Machinery	5.0	Env. & Safety	1.72	Miscellaneous	0.2	Total	40.0	
Details	Project Cost (Rs. In Crores)															
Land	7.0															
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Machinery	5.0															
Env. & Safety	1.72															
Miscellaneous	0.2															
Total	40.0															
	-															
A-2	Details of CER -															
	PP shall carry out CER activities as below:															
Sr. No.	Activities	Years (Rs. in Lakhs) 1 st 2 nd 3 rd	Total Budget (Rs. in Lakhs)													
1	Development of Water Harvesting pond at village Bhersam	15	15													
2	Digging of 4 pond of Vorasamni	10 10 20	40													
3	Road side plantation from Project side to Vilayat Industrial Estate (Around 2.5 Km)	5 5 5	15													
4	Five years maintenance of greenbelt area	3.6 x 5 Years	18													
Total			88													
	<ul style="list-style-type: none"> ✓ Development of Water Harvesting pond at village Bhersam ✓ Digging of 4 pond of Vorasamni ✓ Road side plantation from Project side to Vilayat Industrial Estate (Around 2.5 Km) 															

✓ Five years maintenance of greenbelt area

B Land / Plot ownership details:

Land Possession Documents from Gujarat Industrial Development Corporation vide letter no. GIDC/RM-I/ANK/SYKH/ALT/2182 on dated 04/07/2019.

B-1 Plot area

Total Plot area
25400.786 m²

B-2 Area adequacy

Area Adequacy table:

Particular	Area (m ²)
Office/Lab Building	500
Production Area	2250
Finished Goods Storage Area	1050
Raw Material Storage Area	1270
Hazardous Material Storage	510
ETP area	450
Green Belt Area	8385
Parking, Road Area, and Margins	3900
Tank Farm	1200
Security Cabin	100
Utility Block	1600
Open to sky	4185.786
Total	25400.786

➤ 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	8385 m ²
% of total area	33%

Comments:

The condition shall be given that –

- The PP shall develop green belt (8385 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
150 Nos.

D WATER

D-1 Source of Water Supply

- Saykha GIDC Water supply

Comments:

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

D-2 Water consumption (KLD)

Category	Quantity KLD
(G) Domestic	10.0
(H) Gardening	25.0
(I) Industrial	
Process	286.0
Washing	50.0
Boiler	50.0
Cooling	80.0
Others	--
Lab	4.0
Water Treatment	30.0
Industrial Total	500.0
Grand Total (A+B+C)	535.0

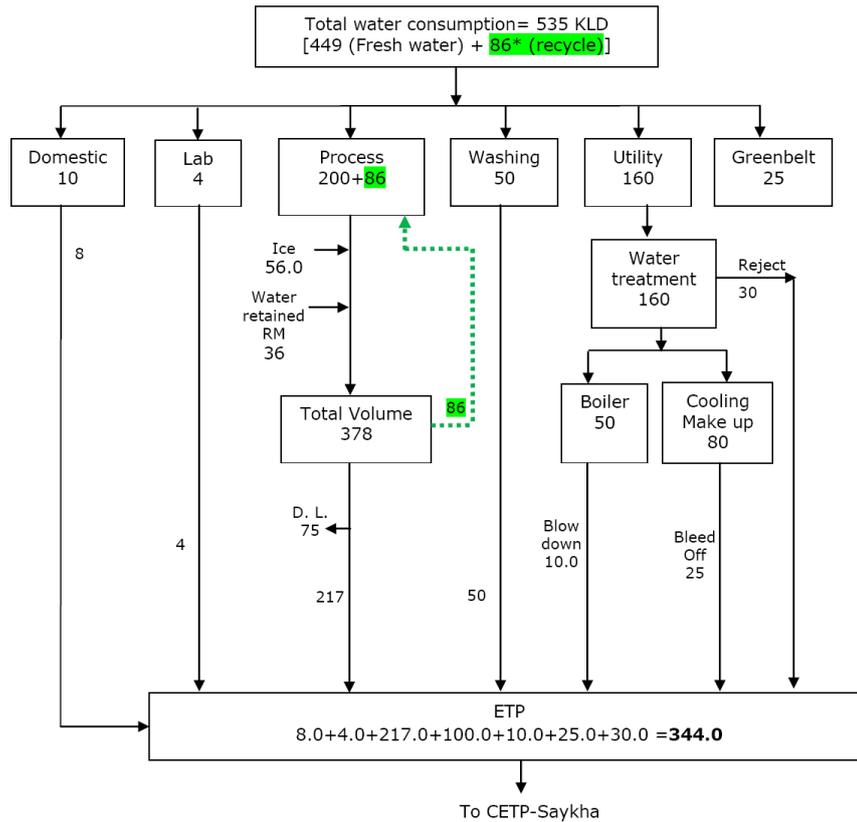
Comments:

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

D-3 Waste water generation (KLD)

Category	Waste water KLD
7. Domestic	8.0
8. Industrial	
Process	217.0
Washing	50.0
Boiler	10.0
Cooling	25.0

	Others	--	
	Lab	4.0	
	Water Treatment	30.0	
	Total Industrial waste water	336.0	
	Total [A + B]	344.0	
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)		
8.0 KLD Domestic Waste Water shall be treated in ETP & treated wastewater shall be sent to CETP- saykha.			
Comments:			
• Domestic wastewater generation shall not exceed 8.0 KL/day for proposed project and it shall be treated in ETP With Industrial Effluent.			
D-5a	Break-up of waste water disposal & facility (For Industrial)		
	Sr. no.	Quantity KLD	Facility
	1	344.0	ETP - CETP Saykha
	Total	344.0	
D-5b	Simplified water balance diagram		



D-5c Summary

Summary of water requirement	Quantity KLD	Remarks
Total water requirement for the project (A)	535.0 KLD	--
Quantity to be recycled (B)	86.0 KLD	--
Total fresh water requirement (C)	449 .0 KLD	--
Ensure Total water requirement = Recycled water + Fresh water i.e. A = B + C		

Comments:

9. Total water requirement for the project shall not exceed 535 KLD. Unit shall reuse 86.0 KLD of treated industrial effluent within premises. Hence, fresh water requirement shall not exceed 449.0 KLD and it shall be met through GIDC water supply only. Prior permission from concerned authority for withdrawal of water shall be obtained.

10. Management of Industrial effluent shall be as under:

- Effluent generation shall be from process, lab, utilities & washing. ETP shall consist of Equalization tank, flash mixer, flocculator, lime-alum-poly flock dosing tanks, clarifier, aeration tank, holding tank, pressure sand - activated carbon filter, and filter press. Design capacity of ETP shall be 350 KLD. After achieving prescribed norms, it shall be

discharged to CETP-GIDC drainage for final disposal.

- Domestic effluent shall be treated in ETP with industrial effluent.

11. Unit shall provide ETP with adequate capacity.

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

E AIR

E-1 Power (Electricity) requirement : 500 KVA

E-2 Flue gas emission details

Sr. no.	Source of emission With Capacity	Stack Height (meter)	Type of Fuel	Quantity of Fuel MT/ Day	Type of emissions i.e. Air Pollutants	Air Pollution Control Measures (APCM)
9.	Steam Boiler – 1 (3.5 TPH)	21	Natural gas	7000 SCM/day	SPM, SO ₂ , NO _x	Adequate stack height
10.	Steam Boiler – 2 (3.5 TPH)	21	Natural gas	7000 SCM/day		Adequate stack height
11.	D.G. Set (500 KVA)	11	HSD	100 lit/hr.		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	Spin Flash Dryer-3 Nos. (300 Kg./hr.)	SPM	11	In built Cyclone & Bag filter
2	Rotary Vacuum Dryers- 3 Nos. (300 Kg./hr.)		11	

E-4 Fugitive emission details with its mitigation measures.

- In proposed activities, there shall be chances of VOCs, Acid Mist generation from process area & raw material storage area. There shall be also chances of generation of PM from packing/finishing area
- Close handling system provided for transfer of chemicals.
- Pneumatically transfer of liquid raw material in reactor.
- Raw material shall be stored in the covered structure.
- Regular maintenance of valves, pipes etc.
- Regular periodic monitoring of work area to check the fugitive emission.
- Greenbelt shall be developed around the plant to arrest the fugitive emission.

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.

ODCB, Methanol, Tert-amyl alcohol, IBA, MCB, Xylene and toluene shall be used as solvent it shall be collected in tank and reused in next batch.

Solvent Recovery Table

Solvent Name	Consumption	Generation	Recovery %	Loss %
	MT/Month	MT/Month		
ODCB	1800	1710.00	~94	3 to 7 % loss in terms of distillation residue
Methanol	1680	1596.00	~96	
Xylene	39	37.05	~95	
Toluene	80	76.00	~95	
IBA	900	855.00	~94	
Tert-amyl alcohol	1200	1140.00	~97	
MCB	1005	954.75	~93	

F-2 VOC emission sources and its mitigation measures

Measures for achieving maximum solvent recovery and minimize VOC generation:

- Entire process shall be carried out in closed reactors.
- Pneumatically transfer of liquid raw material in reactor.
- Raw material shall be stored in the covered structure.
- Greenbelt shall be developed around the plant to arrest the fugitive emission.
- Frequent work area monitoring shall be done ensure fugitive emissions level.
- Unit shall install scrubbing system with negative suction from work area to further minimize fugitive emission.
- Internal road shall be concreted or paved to reduce the fugitive emission during vehicular movement.
- Water sprinkling shall be done to control air borne dust

F-3 LDAR proposed:

- Pumps are provided proper mechanical seal and pipe line are connected with each other by flanges and gaskets.
- The leak detector and emission digital transmitter with smart sensor equipment shall be provided nearby pump with set point of half level of TLV/TWA value.
- If the set level exceed in the work area, automatic siren system shall be started.
- Immediate action shall be taken by operator to shut down valve/pump to prevent the leak and emission of gas.
- Periodically preventive maintenance schedule shall also be conducted by team for safe operation and prevention of leak and emission.

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
23.	ETP sludge	ETP	35.3	1200	Collection, Storage, Transportation, Disposal at TSDf site.
24.	Process residues	Process	26.1	36	Collection, Storage, Transportation and disposal at CHWIF facility for co-processing.
25.	Used Oil	Machinery	5.1	1.0 KL/year	Collection, Storage, Transportation, Disposal by selling to Registered Re-refiners or reuse as lubricant within premises.
26.	Discarded Drum/ Containers/ Bags /Linear	Raw material storage	33.1	360	Collection, Storage, Decontamination, Transportation, Disposal by selling to Authorized Recycler/Reuse.

Comments:

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

G-2 Non- Hazardous waste management matrix

Not applicable

H SAFETY details

H-1 Details regarding storage of Hazardous chemicals

Sr. no	Name of Chemical	Capacity of Tank	Number of Tanks	Hazardous Characteristics of Chemical
1	Acetic Acid	10 MT x 1 tank	1	Corrosive
2	Caustic lye	30 MT x 1 tank	1	Corrosive
3	HCl	10 MT x 2 tank	2	Corrosive
4	Methanol	20 MT x 1 tank	1	Flammable
5	Xylene	10 MT x 1 tank	1	Flammable
6	Aniline	200 kg Drum	5	Corrosive

7	ODCB	200 kg Drum	10	Corrosive
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Storage of Hazardous chemicals in Tanks

- Tanker unloading procedure is prepared and implemented.
- Caution note and emergency handling procedure is displayed at unloading area and trained all operators.
- Storage tank is stored away from the process plant.
- Dyke wall is provided to all storage tanks, collection pit with valve provision.
- Double drain valve shall provided.
- Level gauge is provided on all storage tanks.
- Fire hydrant system with jockey pump shall be installed

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

etc.

- Proper ventilation shall be provided in storage area.
- 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.
- Materials shall be stored as per its compatibility study and separate area shall be made for flammable, corrosive and toxic chemical drums storage.
- Smoking and other spark, flame generating item shall be banned from the Gate.
- Solvents transfer by vacuum or by pump only.
- Static Earthing shall be provided.
- SS flexible hose/conductive hose shall be used

Type of Hazardous Chemicals	Safety measures
FLAMMABLE & EXPLOSIVE	<ul style="list-style-type: none"> • Isolate the storage area form process area • Flame proof fittings shall be provided. • Closed pneumatically transfer chemical from storage tank to reactors. • Proper earthing and spark arrestor shall be provided.
CORROSIVE& CHEMICALS	<p><u>Safety during storage:</u></p> <ul style="list-style-type: none"> • Containers and equipment used for storage and processing of corrosive material shall be corrosion resistant. • It shall be stored separately from each other. • Oxidizing acids shall be separated from organic acids and flammable/combustible materials <p><u>Safety during handling:</u></p> <ul style="list-style-type: none"> • Appropriate personal protective equipment (e.g., gloves, fire-resistant or all cotton lab coat, and safety goggles) shall be provided when working with corrosive chemicals. • A face shield, rubber apron, and rubber booties shall be provided depending on the work performed. • Appropriate protective gloves that are resistant to permeation or penetration from corrosive chemicals shall be selected and tested for the absence of pin holes prior to use. • Eyewashes and safety showers shall be readily available in areas where corrosive chemicals are used and stored. • In the event of skin or eye contact with a corrosive chemical, the affected area should be immediately flushed with water for 15 minutes. Contaminated clothing should be removed and medical attention sought.

	Appropriate spill clean-up material shall be available in areas where corrosive chemicals are used and stored
TOXIC CHEMICALS	--
REACTIVE CHEMICALS	--
<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:
Type of Process	Safety measures including Automation
Hydrogenation process	<ul style="list-style-type: none"> • Total enclosed process system. • Provision of Safety valve and Rupture disc. • Provision of auto dumping Vessel. • Nitrogen blanketing in Hydrogenation reactor. • Cooling, Chilling and alternate power arrangement have been made for reactor. • Process area and Hydrogen cylinder bank shall be adequately distanced as per standards practice. • PRV stationed 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 method for Catalyst charging shall be adopted. • Electric earthing (Double) shall be provided for the equipment. • Hydrogen gas detector shall be installed for early detection of gas leak
Chlorination	<ul style="list-style-type: none"> ➤ Chlorination by chlorine gas involved. Two stage Alkaline Scrubber shall be provided to arrest the resulting emission of HCl. ➤ Temperature of reaction and rate of charging should be controlled to avoid runaway reaction. ➤ Use PPEs to get protection from Chlorine Gas. ➤ Chlorine sensor with alarm shall be provided. ➤ Chlorine emergency kit shall be provided.
Exothermic	➤ Reactant mass in reactor should be added such that surface-to-volume

reaction	<p>ratio is maintained and runaway reaction is prevented.</p> <ul style="list-style-type: none"> ➤ Cooling – jacketed system for the reactor should be in place to maintain the reaction temperature. ➤ All the Plant Personnel shall be provided with Personal Protection. ➤ Safety Valve and pressure gauge shall be provided on reactor. ➤ Utility like Chilling/cooling, vacuum, steaming and its alternative shall be provided to control exothermic reaction parameters in a safe manner. ➤ All employees shall be given and updated in Safety aspects through periodic training in safety. ➤ Material Safety Data Sheets of Raw Materials & Products shall be readily available that the shop floor. ➤ Caution note, safety posters, stickers, periodic training & Updation in safety and emergency preparedness plan shall be displayed and conducted. 																		
H-3	Details of Fire Load Calculation																		
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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):																		
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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	Detail	Capital Cost (Rs. In Crore)	Operating Cost	Capital Cost (Rs. In Crore)	Operating Cost
1.	Waste Water	ETP, CETP Membership & operational cost	1.25	0.6	0.12	0.72
2.	Air	Installation of APCM	0.1	0.01	0.01	0.02
3.	Hazardous waste management	Shed & Membership cost	0.1	0.24	0.06	0.3
4.	Fire & Safety	Fire Hydrant & pipeline System	0.2	0.005	0.005	0.01
		Fire Extinguisher	0.025	0.0	0.005	0.005
		Safety Equipment, PPEs	0.045	0.0	0.003	0.003
5.	AWH Monitoring	pH meter, COD apparatus, Balance, Glassware etc.	0.025	0.03	--	0.03
6.	Green Belt Development	--	0.05	0.0	0.01	0.01
7.	Occupational Health	First Aid facility	0.035	0.01	--	0.01
8.	Noise Pollution Control	Suspensor and Rubber packing at vibrating part Machinery	0.015	0.0	0.0	0.0
9.	CER	Social upliftment	0.8	0.0	0.0	0.0
Total			2.645	0.895	0.213	1.108

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

1. membership certificate from CETP Saykha

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	