Chemplast Cuddalore Vinyls Limited

Cuddalore Plant:
SIPCOT Industrial Complex Phase II
Semmankuppam Cuddalore 607 005 India
Tel + 91 4142 239 280
E-mail: csl@sanmargroup.com
www.chemplastsanmar.com
CIN U24100TN1991PLC020589

03 SEP 2024

CCVL/TNPCB/0294
Aug 30,2024

The District Environmental Engineer
Tamil Nadu Pollution Control Board
No.A3 SIPCOT Industrial Complex
Kudikadu, Cuddalore – 607 005

Dear Sir,

Sub: Chemplast Cuddalore Vinyls Limited, SIPCOT Industrial Complex, Cuddalore – Submission of Form V – Environmental Statement 2023-2024 – Reg.

We herewith enclose the Environmental Statement – Form V for the year 2023 -2024 under Rules 14 of the Environmental (Protection) Rules 1989 for your perusal and records.

Thanking you and assuring our best co-operation at all times,

Yours faithfully,
For Chemplast Cuddalore Vinyls Limited,

N.Palanisamy
Executive Vice President – Operations

Copy to: The Member Secretary
Tamil Nadu Pollution Control Board
76 Anna Salai, Guindy,
Chennai –600032.

Additional Chief Conservator of Forest
Ministry of Environment & Forests and Climate Change
Regional Office (SEZ)
1st and II nd Floor, Handloom Export Promotion Council,
34 Cathedral Garden Road, Nungambakkam,
Chennai – 600034.

Encl: As above

Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY

CHEMPLAST CUDDALORE VINYLS LIMITED SEMMANKUPPAM CUDDALORE-5

CHEMPLAST CUDDALORE VINYLS LIMITED , SIPCOT INDUSTRIAL COMPLEX PHASE – II, SEMMANKUPPAM, CUDDALORE – 607 005.

FORM – V

(See Rule – 14)

ENVIRONMENTAL STATEMENT REPORT FOR THE FINANCIAL YEAR ENDING THE 31ST MARCH 2024

PART - A

(i)	Name and address of the owner / occupier of the Industry operation or process.	Mr.Ramkumar Shankar Chemplast Cuddalore Vinyls Limited SIPCOT Industrial Complex Phase II Semmankuppam Village Cuddalore – 607 005.
(ii)	Industry Category Primary: - (STC Code) Secondary:- (SIC Code)	1011
(iii)	Production Capacity	PVC Resins: 3,50,000 TPA.
(iv)	Year of Establishment	September 2009.
(v)	Date of the last Environmental Statement submitted	25thSep' 2023

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PART – B

WATER AND RAW MATERIAL CONSUMPTION

(i) Water Consumption (KLD)

Process	:	1807
Cooling	:	1576
Domestic	:	8.6

Name of Products	Process Water Consumption Per Unit of Product output					
	During the previous financial year (2022-2023)			During the current financial year (2023-2024)		
	Fresh Water KL/MT	Recycled Water KL/MT	Total Water KL/MT	Fresh Water KL/MT	Recycled Water KL/MT	Total Water KL/MT
PVC Resin	1.95	1.83	3.78	2.05	1.79	3.84

(ii) Raw Material Consumption :

Name of Raw Material	Name of Products	Consumption of Raw material per unit of Output	
		During the current financial year (2022-2023)	Current financial year (2023-2024)
Vinyl Chloride Monomer (VCM)	PVC Resin	1.003	1.0030

PART - C
POLLUTION DISCHARGED TO ENVIRONMENT / UNIT OF OUTPUT
(Parameter as specified in the consent issued)

Since the Unit adopted ZLD system, the entire trade effluent ,recycled and reused for its process use ,No pollution discharged to environment .

(a) Water: (Analysis carried out by AEL, TNPCB, Cuddalore)

Sl. No.	Pollutants	Quantity of Pollutants Discharged, (mass / day) (Kg/Day)	Concentrations of Pollutants in ZLD RO permeate (mass / volume) (mg/Lit)	Percentage of Variation from Prescribed Standards with reasons
1.	pH	Unit adopted Zero Liquid Discharge System (ZLD).	7.2	No variation
2.	Total Suspended Solids @105C		7.3	
3.	TDS @180 C		164	
4.	Chloride as Cl		82.7	
5.	Sulphide as S^{2-}		<1	
6.	BOD @ 27 °C		4.7	
7.	COD		24	
8	Cynaide		<0.05	
9.	Sulphate as SO4		30	
10	Total Phosphate		<0.05	
11.	Phenolic Compound as C6H5OH		<0.1	
12.	Hexavelent Chromium Cr+6		<0.05	
13.	Lead as Pb		<0.07	

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PART - C

Pollution Discharged to Environment / Unit of output

(Parameter as specified in the consent issued)

(b) Air: (Stack Monitoring carried out by AEL, TNPCB, Cuddalore)

Sl. No.	Description of Chimney/Stack	Concentration of Pollutants discharged, mass / volume (mg / $Nm3^3$)			Quantity of Pollutants discharged mass/day (Kg/day)		
		SPM	SO_2	NO_X	SPM	SO_2	NO_X
1.	Boiler – 38 TPH	64.24	67	42	76.6	79.9	50.1
2.	Coal Crusher	64.3	-	-	8.6	-	-
3.	Coal Bunker	62.1	-	-	0.52	-	-
4.	PVC Dryer	62.3	-	-	14.5	-	-
5.	De-Dusting unit - A	48.25	-	-	1.3	-	-
6.	De-Dusting unit – B	48.75	-	-	1.2	-	-
7.	De-Dusting unit - C	51.15	-	-	1.5	-	-
8.	Silo - A	59.7	-	-	9.2	-	-
9.	Silo – B	59.85	-	-	8.9	-	-
10.	Silo - C	58.5	-	-	8.7	-	-

CHEMPLAST CUDDALORE VINYLS LIMITED , SIPCOT INDUSTRIAL COMPLEX PHASE – II, SEMMANKUPPAM, CUDDALORE – 607 005.

PART - D

Hazardous Wastes

(As specified under Hazardous Wastes (Management, Handling and Transboundary Movements) Rules, 2016 ,Amendment of Rules-2023 & 2024

Sl. No.	Hazardous Wastes	Total Quantity (MT)	
		During the Previous financial year (2022-2023)	During the current financial year (2023-24)
(a) From Process			
1.	Spent / Used Oil	1.53	1.28
2.	Empty Barrels/Containers/Liners Contaminitated with hazardous Chemical/Wastes	Nil	26.65
3..	PVC Lumps	Nil	Nil
(b) From Pollution Control Facilities			
1.	ETP sludge	68.76	71.56
2.	Evaporator solids	85.41	359.21
3.	Desalination plant sludge	715.24	684.54

PART - E

Solid Wastes

Solid Wastes	**Total Quantity (MT)**	
	During the Previous financial year (2022-2023)	**During the current financial year (2023-2024)**
(a) From Process	-	-
(b) From Pollution Control facility Fly ash from Boiler	2122.78	2121.23
(c) 1. Quantity recycled or reutilized within the unit	-	-
2. Sold	2122.78	2121.23

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3. Disposed	-	-

PART – F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

- The generated waste oil sold to TNPCB authorized recyclers as per authorization condition and sludge from waste water treatment sent to TNPCB authorized TSDF facility, Gummidipoondi, Chennai.
- The Fly Ash generated from Boiler Unit Collected through dedicated ESP with 99 % efficiency and stored in fly ash silo is being sent to nearby Brick/cement factories.
- The Used Spent Oil & Empty barrels/Containers/liners Contaminated with hazardous chemical/waste safely disposed to TNPCB authorized recyclers after decontaminate process.

Sl. No.	Hazardous Wastes Analysis result					
	Parameters	Unit	PVC Lumps	ETP sludge	Evaporator solids	Desal sludge
1	Physical state	-	Solid	Solid	Solid	Solid
2	Color Texture	-	Whitish Brown	Brown	Pale Yellow	Black
3	Paint filler liquid test	-	Pass	Pass	Pass	Pass
4	Bulk density	gm/cc	0.56	1.2	1.12	1.31
5	pH@25°C	-	6.12	8.01	8.62	6.84
6	Flash Point	°C	>60	>60	>60	>60
7	Loss on dring @105°C Dry basis	%	0.11	40.51	10.64	45.4
8	Loss on Iggition at 550°C	%	89.3	32.91	9.06	18.1
9	Calorific value(Dry basis)	cal/gm	5054	<200	<200	1321
10	Extractable Organics	%	<1	<1	<1	<1
11	Water Soluble Inorganic	%	0.14	<0.1	46.2	0.54

12	Water Soluble organic	%	0.2	2.1	1.5	0.24
13	Reactive Cyanide	mg/kg	<1	<1	<1	<1
14	Reactive sulfide	mg/kg	<1	<1	<1	<1
15	Total Phenols (WLT)	mg/lit	<1	<1	<1	<2
16	Ammonia N (WLT)	mg/lit	4.8	3.92	3.84	26.6
17	Cyanide (WLT)	mg/lit	<0.1	<0.2	<0.2	<0.2
18	Fluoride as F (WLT)	mg/lit	<1	<1	<1	<1
19	Nitrate Nitrogen as N (WLT)	mg/lit	8.6	22.55	2.75	20.5
20	Arsenic TCLP	mg/lit	<0.1	<0.1	<1.0	<0.1
21	Mercury TCLP	mg/lit	NA	<0.02	<0.02	<0.02
22	Mercury WLT	mg/lit	NA	<0.02	<0.02	0.02
23	Cadmium TCLP	mg/lit	0.05	<0.1	<0.1	<0.1
24	Cadmium WLT	mg/lit	0.04	<0.1	<0.1	<0.1
25	Total Chromium TCLP	mg/lit	<0.2	<0.5	<0.5	<0.1
26	Hexavalent Chromium (WLT)	mg/Lit	<0.2	<0.1	<0.1	<0.1
27	Copper (WLT)	mg/lit	<0.5	<0.5	<0.5	<0.5
28	Lead (TCLP)	mg/lit	0.38	0.38	<0.1	<0.1
29	Lead (WLT)	mg/lit	0.28	0.37	<0.1	<0.1
30	Nickel (WLT)	mg/lit	<1	<0.5	<0.5	<0.5
31	Zinc (WLT)	mg/lit	<1	0.27	<0.1	<0.5

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32	Mode of Disposal	Incineration at TSDF, Gummudipondi site	Safe disposal to TSDF, (LAT) Gummudipondi site	Safe disposal to TSDF, (LAT) Gummudipondi site	Safe disposal to TSDF, (DLF) Gummudipondi site

PART - G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of productions.

Environmental Improvement Measures

The following measures were undertaken on conservation of natural resources.

a. Using Imported Coal as fuel to boiler considering low SOX, less Ash % High GCV etc.

b. Effective operation of Sewage Treatment Plant and reuse the water for gardening.

c. Effective operation of ETP with "Zero Liquid Discharge System" and reuse the water for Industrial Cooling ,dust suppression in Coal conveyor etc.

d. Effective operation of cooling tower and circulating water to minimize fresh water requirement.

e. Effective Monitoring of Online Ambient Air Quality system takes immediate action if any deviation observed. Monitoring station installed as per Revised National Ambient Air Quality Standards and real time data facility established to Care Air Centre, TNPCB office Chennai.

f. VOC & S-VOC monitoring is being conducted through MoEF approved lab on quarterly basis and report submitted to TNPCB.

g. Ambient air quality monitoring conducted through MoEF approved lab on monthly basis and report submitted to TNPCB.

h. Leak Detection and Repair Programme conducted as per ECVCM Standard through competent agency in November-2023 and report submitted.

i. Work place exposure Assessment study was conducted by M/s Glens Innovation labs Pvt Ltd, 26th to 29th August 2023, and ensured the stipulated statuary norms.

j. Effective Green belt maintenance with dedicated garden contractors

k. Energy saving initiative by Implementation of Battery operated forklift for loading, unloading of PVC resins & Material movement done in F - 2023-24 .The Nett Energy saving(GJ) : 759.3 and due to this activity Nett Emission reduction (tCo2e) : 39.2 observed.

l. As Energy saving initiative, Implementation of Energy recovery Turbine at Desalination plant completed Fy-2023-24 .

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m.Energy Recovery is precision turbocharger technology that lowers energy consumption by 20 to 30 percent. (Model AT-550) observed.

n. Vermicomposting Process was Implemented onsite for biodegradable solid waste management, and the manure produced is being utilized for greenbelt. During FY-2023-24 about 402 kgs of dry leaved were converted in to manur.

PART - H

Additional measures / investment proposal for environmental protection including abatement of pollution, prevention of pollution.

CHEMPLAST CUDDALORE VINYLS LIMITED, SIPCOT PHASE II			
SEMMANKUPPAM VILLAGE,CUDDALORE - 607 005.			
Environmental Protection Expenditure for the year 2023-24			
1	Expenditure incurred on hazardous waste handling and disposal	Hazardous waste safe disposal	60,21,680
2	Expendicture incured for Biomedical waste handling and disposal	Biomedical waste disposal charge	62,800
3	Operation Expenditure for ZLD and STP operation.	Desal , ZLD plant operation cost (chemicals, manpower etc). (O&M for STP and for Desal, ZLD Rs.	2,88,58,800
4		d.TNPCB AAQ/SM Monitoring charges	3,67,400
5	Expenditure towards Statutory Compliance of Environmental Aspects	a.Consent Fee	24,63,337
6		c.TNPCB Water Quality Monitoring charges	2,74,340
7		b. Equipment procurement for Environmental Monitoring/Protection	13,64,955
8	Environmental Monitoring Expenditure	a. AAQ/Stack, LDAR & VOC & S-VOC Monitoring through MoEF approved lab	15,12,214
9		IMS -Survelience audit	1,72,500
10		c.Green Belt Development	59,95,628
11		PLI	71,941

CHEMPLAST CUDDALORE VINYLS LIMITED SEMMANKUPPAM

Total Environment Expendicture-FY2023-24	4,71,65,594

PART - I

Miscellaneous

Any other particulars for improving the quality of the environment

The details of green belt development are given below:

Various plans have been devised and implemented to reduced the impact of the activities on the surrounding areas and its natural environment. Some of them are as follows:

- Regular monitoring of online ambient air quality, online stack emissions and effluent quality have been taken up to evaluate the efficiency of the pollution control systems and control measures on the overall emissions from stack, ambient air and effluents.
- Closed Coal Storage yard with water sprinklers arrangement as mitigation measure for fugitive emission.
- Sound proof enclosures provided in Emergency DG's .AFBC (Atmospheric Fluidized Bed combustion) Boiler technology adopted to control pollutant parameter in flue gas.
- Seasonal monitoring of seawater in and around the CCVL site in marine zone is being monitored through CASMB (Center for Advanced Study in Marine Biology, Annamalai University every six month to ensure that the marine ecosystem/biodiversity is not affected due to discharge of water.
- Installed 54 meters tall chimney to equal dispersion and dilution flue gas to maintain the various ground level concentration.
- Closed coal conveyor system with Bag filters and water spry system to control the fugitive emission .
- Coal heaps in coal storage yard covered with tarpaulin to avoid fugitive emission.
- Utilizing sea water for entire operation of the CCVL , contributing to conservation of precious ground water.
- Decorative trees in open areas to maintain healthy environment and Greenery in plant premises.
- Greenbelt development is taken up in 22 acres. A massive tree plantation was done, inside as well as outside of the plant premises which serve as wind barriers and dust adsorption.
- Adopted best technology in SWRO, by introducing energy recovery system to save energy.

CHEMPLAST CUDDALORE VINYLS LIMITED SEMMANKUPPAM

- All internal roads are made-up with bitumen topped, to reduce the fugitive dust emission inside the plant premises.
- Awareness programs like plantation, pamphlets, Quiz, Drawing competition etc. activities on environment protection on 5th June (World Environment Day).
- Housekeeping is taken up on top priority for maintaining neat and clean environment in the plant premises with dedicated team with supervising.
    - Dedicated separate contract has been given for plant general housekeeping.
    - Daily area wise housekeeping schedule is in place and is being monitored by housekeeping supervisor.
    - Equipment wise periodic cleaning schedule is in place and is being reviewed in daily planning meeting. Vent filers to capture fine power particles dust from production areas.

❖ **Factory Area**	: **25.186 Hec**
❖ **Green Belt Development requirement**	: **8.3 Hec**
❖ **Number of trees covered in 8.3 Hec**	: **> 26000 nos**

CHEMPLAST CUDDALORE VINYLS LIMITED SEMMANKUPPAM CUDDALORE