

CCVL/TNPCB/0250
September 25, 2023

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

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

Dear Sir,

Sub: Chemplast Cuddalore Vinyls Limited, SIPCOT Industrial Complex, Cuddalore
– Submission of Form V – Environmental Statement 2022-2023 – Reg.

Ref: 1. Letter No.SEIAA-TN/F.No.6788/5(e)/EC-69/2019 dated:19.11.2019
2. Consent Order No. 2307247638383 ,Dated 08/02/2023.
Proceedings No.T3/TNPCB/F.0033CUD/RL//CUD/A/2023 Dated: 08/02/2023
3.Consent Order No. 2307147638383 Dated: 08/02/2023.
Proceedings No.T3/TNPCB/F.0033CUD/RL/CUD/W/2023 Dated: 08/02/2023

We herewith enclose the Environmental Statement – Form V for the year 2022 -2023 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
Senior 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 IInd Floor, Handloom Export Promotion Council,
34 Cathedral Garden Road, Nungambakkam,
Chennai – 600034.

Encl: As above



Regd Office: 9 Cathedral Road Chennai 600 086 India

**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 2023**

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	23 rd Sep' 2022



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

PART – B

WATER AND RAW MATERIAL CONSUMPTION

(i) Water Consumption (KLD)

Process : 1732

Cooling : 1621

Domestic : 9.2

Name of Products	Process Water Consumption Per Unit of Product output					
	During the previous financial year (2021-2022)			During the current financial year (2022-2023)		
PVC Resin	Fresh Water KL/MT	Recycled Water KL/MT	Total Water KL/MT	Fresh Water KL/MT	Recycled Water KL/MT	Total Water KL/MT
	2.02	1.88	3.90	1.95	1.83	3.78

(ii) Raw Material Consumption :

Name of Raw Material	Name of Products	Consumption of Raw material per unit of Output	
		During the current financial year (2021-2022)	Current financial year (2022-2023)
Vinyl Chloride Monomer (VCM)	PVC Resin	1.00296	1.003



**CHEMPLAST CUDDALORE VINYLs LIMITED , SIPCOT INDUSTRIAL
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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).	7.5	No variation
2.	Total Suspended Solids		BDL	
3.	Total Dissolved Solids		132	
4.	Chlorides		60	
5.	Sulphate		27.3	
6.	Oil & Grease		BDL	
7.	BOD		10.5	
8.	COD		38	
9.	Sulphide		<MDL	
10.	Fluoride		<MDL	
11.	Ammonical Nitrogen		<MDL	
12.	Hexa.Chromium		<MDL	
13.	Total Chromium		<MDL	
14.	Nickel		<MDL	
15.	Zinc		<MDL	
16.	Lead		<MDL	
17.	Cadmium		<MDL	



**CHEMPLAST CUDDALORE VINYLs LIMITED , SIPCOT INDUSTRIAL
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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, TNPCCB, Cuddalore)

Sl. No.	Description of Chimney/Stack	Concentration of Pollutants discharged, mass / volume (mg / Nm ³)			Quantity of Pollutants discharged mass/day (Kg/day)		
		SPM	SO ₂	NO _x	SPM	SO ₂	NO _x
1.	Boiler – 38 TPH	40.0	62	58	18.04	27.96	26.16
2.	Coal Crusher	48	-	-	3.03	-	-
3.	Coal Bunker	42	-	-	2.01	-	-
4.	PVC Dryer	48	-	-	36.9	-	-
5.	De-Dusting unit - A	46	-	-	1.06	-	-
6.	De-Dusting unit – B	48	-	-	1.1	-	-
7.	De-Dusting unit - C	47	-	-	1.08	-	-
8.	Silo - A	56	-	-	1.71	-	-
9.	Silo – B	58	-	-	1.78	-	-
10.	Silo - C	60	-	-	1.84	-	-



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PART - D

Hazardous Wastes

(As specified under Hazardous Wastes (Management, Handling and Transboundary Movements) Rules, 2016 & Its Amendments)

Sl. No.	Hazardous Wastes	Total Quantity (MT)	
		During the Previous financial year (2021-2022)	During the current financial year (2022-2023)
(a) <u>From Process</u>			
1.	Spent / Used Oil	1.386	1.53
2.	PVC Lumps	Nil	Nil
(b) <u>From Pollution Control Facilities</u>			
1.	ETP sludge	54.18	68.76
2.	Evaporator solids	143.45 Tons	85.41
3.	Desalination plant sludge	122.07Tons	715.24 Tones

**PART - E
Solid Wastes**

Solid Wastes	Total Quantity (MT)	
	During the Previous financial year (2021-2022)	During the current financial year (2022-2023)
(a) From Process	-	-
(b) From Pollution Control facility Fly ash from Boiler	2071.22 Tons	2122.78 Tons
(c) 1. Quantity recycled or reutilized within the unit	-	-
2. Sold	2071.22 Tons	2122.78 Tons
3. Disposed	-	-



**CHEMPLAST CUDDALORE VINYLs LIMITED , SIPCOT INDUSTRIAL
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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 disposed to TNPCB authorized recyclers .

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 drying @105°C Dry basis	%	0.11	40.51	10.64	45.4
8	Loss on ignition 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



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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
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



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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 take 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 2022 and report submitted.
- i. Work place exposure Assessment study was conducted by M/s Glens Innovation labs Pvt Ltd, Sep 2022, and ensured the stipulated statutory norms.
- j. Effective Green belt maintenance with dedicated garden contractors
- k. Replacement of CFL to LED lamps as energy conservation measure effectively 29157 Kwh saved.
- l. Vermicomposting Process Implemented for bio-degradable Solid waste management and utilizing the manure for green belt development.



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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 2022-23			
1	Expenditure incurred on hazardous waste handling and disposal	Hazardous waste safe disposal	5110675
2	Operation Expenditure for ZLD and STP operation.	Desal , ZLD plant operation cost (chemicals, manpower etc). (O&M for STP and for Desal, ZLD Rs.	33784008
		d.TNPCB AAQ/SM Monitoring charges	296250
3	Expenditure towards Statutory Compliance of Environmental Aspects	a.Consent Fee	2463336.8
		c.TNPCB Water Quality Monitoring charges	799890
		b. Equipment procurement for Environmental Monitoring/Protection	1138443.46
4	Environmental Monitoring Expenditure	a. AAQ/Stack, LDAR & VOC & S-VOC Monitoring through MoEF approved lab	1184842
5	Implementation of ISO System	ISO Audit fee	184740
		c.Green Belt Development	3282803
		b.PLI	94325
Total Environment Expenditure INR-FY2022-23			48339313.26



**CHEMPLAST CUDDALORE VINYLs LIMITED , SIPCOT INDUSTRIAL
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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.
- All internal roads are made-up with bitumen topped, to reduce the fugitive dust emission inside the plant premises.



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- 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 filters to capture fine power particles dust from production areas.

❖ Factory Area	: 27.3 Hec
❖ Green Belt Development requirement	: 9.0 Hec
❖ Number of trees covered in 9.0 Hec	: > 26000 nos

