

Ref: CCIL/2021

Date: 21.09.2021

To,

The Joint Chief Environmental Engineer,
Tamil Nadu Pollution Control Board,
25, SIDCO, Developed Plot Estate,
Thuvakudy,
Trichy-620015.

Sub: TNPCB, Cuddalore-M/s Clariant Chemicals (India) Limited, Cuddalore-
Environmental Statement- Reg.

Dear Sir,

Here with we are enclosing an Environmental Statement (Form-V)
for the year 2020-2021 for your kind perusal and record.

Thanking you,

Yours faithfully,
For Clariant Chemicals (India) Limited,



M. Olichandran.
Site Head.

Encl : As above.

CC: The District Environmental Engineer, Cuddalore. ✓

Registered Office:
Reliable Tech Park
Thane - Belapur Road,
Airoli, Navi Mumbai - 400 708
India



ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR
ENDING THE 31st March 2021

PART – A

01. Name and address of the owner/occupier of the industry operation process ; M. Olichandran
Clariant chemicals (India) Limited
SIPCOT Complex, Cuddalore – 607 005.
02. Industry category : RED LARGE (Pigment & Intermediates)
Primary (STC Code)
Secondary (OSIC code)
03. Production capacity – Units : Intermediates 115 M.T./month
Pigment Blue 275 M.T./month
TCCPC 20 M.T./month
MCPA 30 M.T./month
04. Year of establishment : 1977
05. Date of the last environmental statement Submitted : 28.09.2020

PART – B

Water and raw material consumption

*i) Water consumption M ³ /day	:	913 M ³ /day
Process	:	633 M ³ /day
Cooling	:	49 M ³ /day
Domestic	:	231 M ³ /day

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Process Water consumption per Product output

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Name of products	During the previous Financial year`	During the current financial year
Intermediates	159 m ³ /day	158 m ³ /day
Pigment Blue	561 m ³ /day	475 m ³ /day

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ii) Raw Material Consumption

*Name of Raw Materials	Name of Products	During the previous Financial Year	During the current Financial Year	Raw material Consumption per day(KG)	Consumption of Raw material Per unit of of output KG
Crude Blue	Blue Pigments	4733	4630		0.955
Sulphuric acid (98%)		14,453	13,982		2.88
Caprylic acid		116.80	116.80		0.021
Lye		4608	4608		0.877
Additive		340	312.10		0.064
MEK		76	65.2		0.013
Hydrochloric acid (33 %)		6810	6265		1.293
Hydro-quinone	Intermediates	1344	1237		0.492

Chlorine		5745	5380	2.141
Ferric chloride		7.2	6.1	0.002
Hostapur		21	21	0.008
Pthalic Anhydride	MCPA	---	55.5	1.449
Soda Ash		----	10.30	0.268
UREA Technical grade	TCCPC	-----	103.60	3.993
Cuprous Chloride		-----	9.60	0.370
Ammonium Molybdate		-----	0.90	0.034

** Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used. ** Refer Annexure

PART –C

Pollution discharged to environment /unit of out put
(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants Discharged (mass/day)	Concentrations of pollutants in discharges	percentage of variation from Prescribed Standards with reason
<u>Water</u>			
Sewage	75,000 Lit		
Trade effluent	903,000 Lit	As per Annexure II (ROA of Waste water Samples analysed by TNPCB – 2020)	As per Government approved laboratory the results are within prescribed standard
<u>Air</u>			
Attached to boiler	10500 m3/hr		
Attached to Scrubber	6500 m3/hr	As per Annexure III (TNPCB Stack Monitoring Report for the year 2020/2021)	
Attached to HAG	2640 m3/hr		
Attached to SFD	8500 m3/hr		
Attached to Ball mill	6000 m3/hr		
Attached to Milling plant	13750m3/hr		
Attached to Neutralization Reactor	675 m3/hr		

PART – D
Hazardous Wastes

(as specified under Hazardous wastes / Management and Handling rules 1989)

Hazardous wastes	Total Quantity (Kg)	
	During the previous Financial year	During the current financial year
(a) From Process	Nil	Nil
(b) From pollution control facilities	Refer part – E	Refer part – E

PART – E

Solid Wastes

	Total Quantity (In Tons)	
	During the previous Financial year	During the current Financial year
(a) From process	Nil	Nil
(b) From pollution control facilities	Gypsum 6.31 T/day	T/day 2.83 T/day
pH	8.20	8.34
Moisture	17.59%	23.96%
Percentage Solids	82.41%	79.04%
Volatile Solids	64.70%	60.37.70%
Sulphate as SO ₄	12102.70mg/Kg	11890.40mg/Kg
Chloride as Cl	506.40 mg/Kg	614.90mg/Kg
(c) 1. Quantity recycled or Re-utilised within the unit	---	---
2. Solid (Gypsum)	2305.70-ton	1034.00 ton
3. Disposed (Barrels, liners, bags)	23.10-ton	28.87 ton

PART – F

Solid wastes

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

Please refer to part € (b). At present the solid waste of gypsum is stored in impervious sludge pond and disposed to cement industries as authorized byTNPCB.

PART - G

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

(a) Chemicals such as dilute HCl acid dilute sulphuric acid and Hypo generated during processes are being sold as by-products.

PART – H

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

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Segregation of blue plant and intermediate plant effluent stream was done to reduce the chloride content in the gypsum sludge.

PART – I

MISCELLANEOUS: Any other particulars in respect of environmental protection and abatement of pollution.

- (a) Marine outfall system of treated effluent which is the first of its kind in the SIPCOT Complex, Cuddalore.
- (b) Monitoring of air pollutants generated during various manufacturing activities are being surveyed by MOEF approved labs periodically.
- (c) Existing effluent Treatment Plant Modules and other pollution abatement measures are upgraded and running normal.
- (d) Green belt development initiate and continued by celebrating World Environment Day annually and plated 200 saplings on 5th June 2019.
- (e) Chlorine handling shed is covered with enclosure connected to dedicated caustic scrubbing system.
- (f) We have installed Zero Leak Filter Press to avoid manual handling and reduce the spillage of the Product.
- (g) COD, BOD, TSS & Cr sensors are installed at WWTP outlet effluent line and being connected to CPCB & TNPCB server.

For CLARIANT CHEMICALS (INDIA) LIMITED

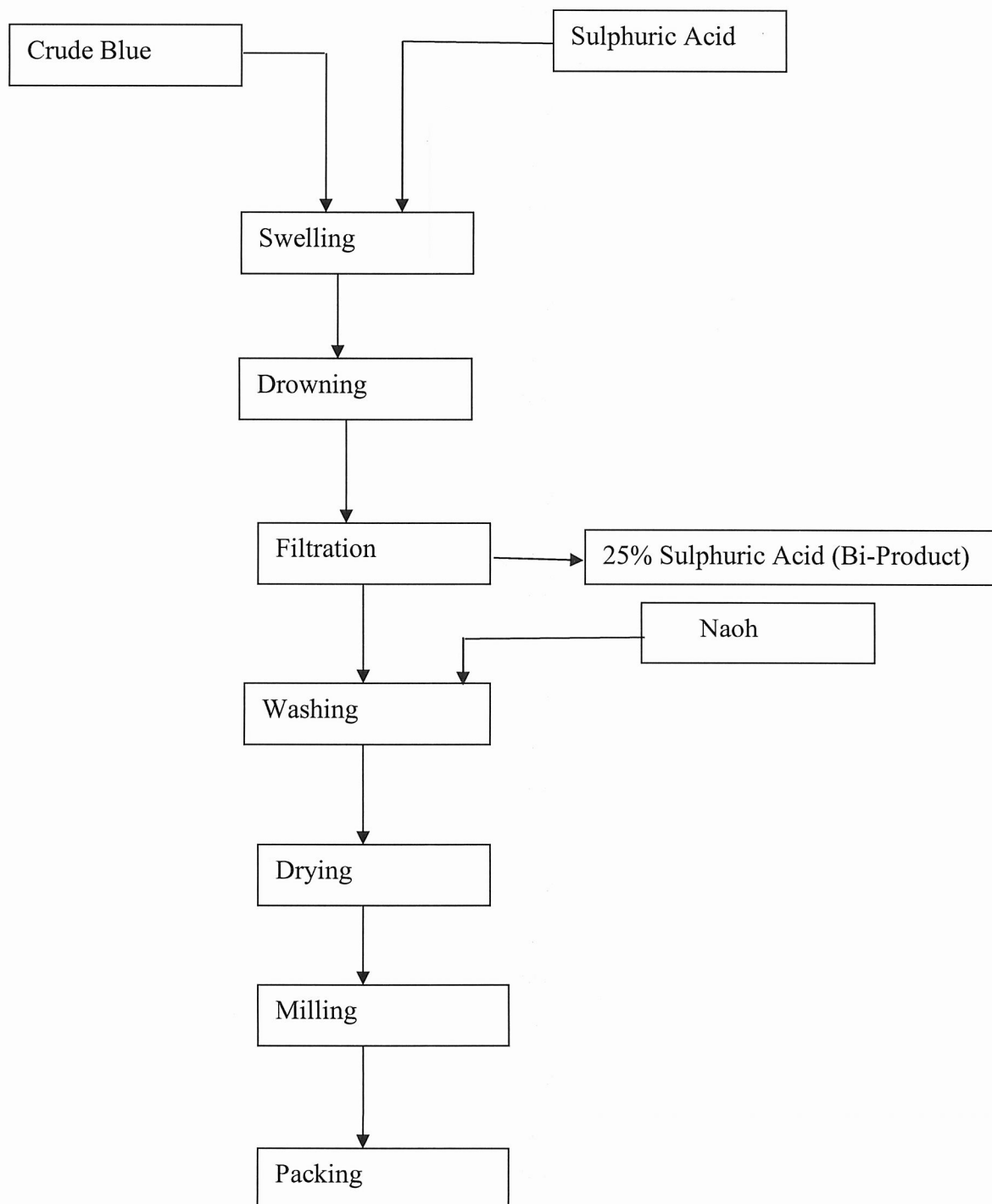


M. Olichandran
(Site Head)

Annexure-01

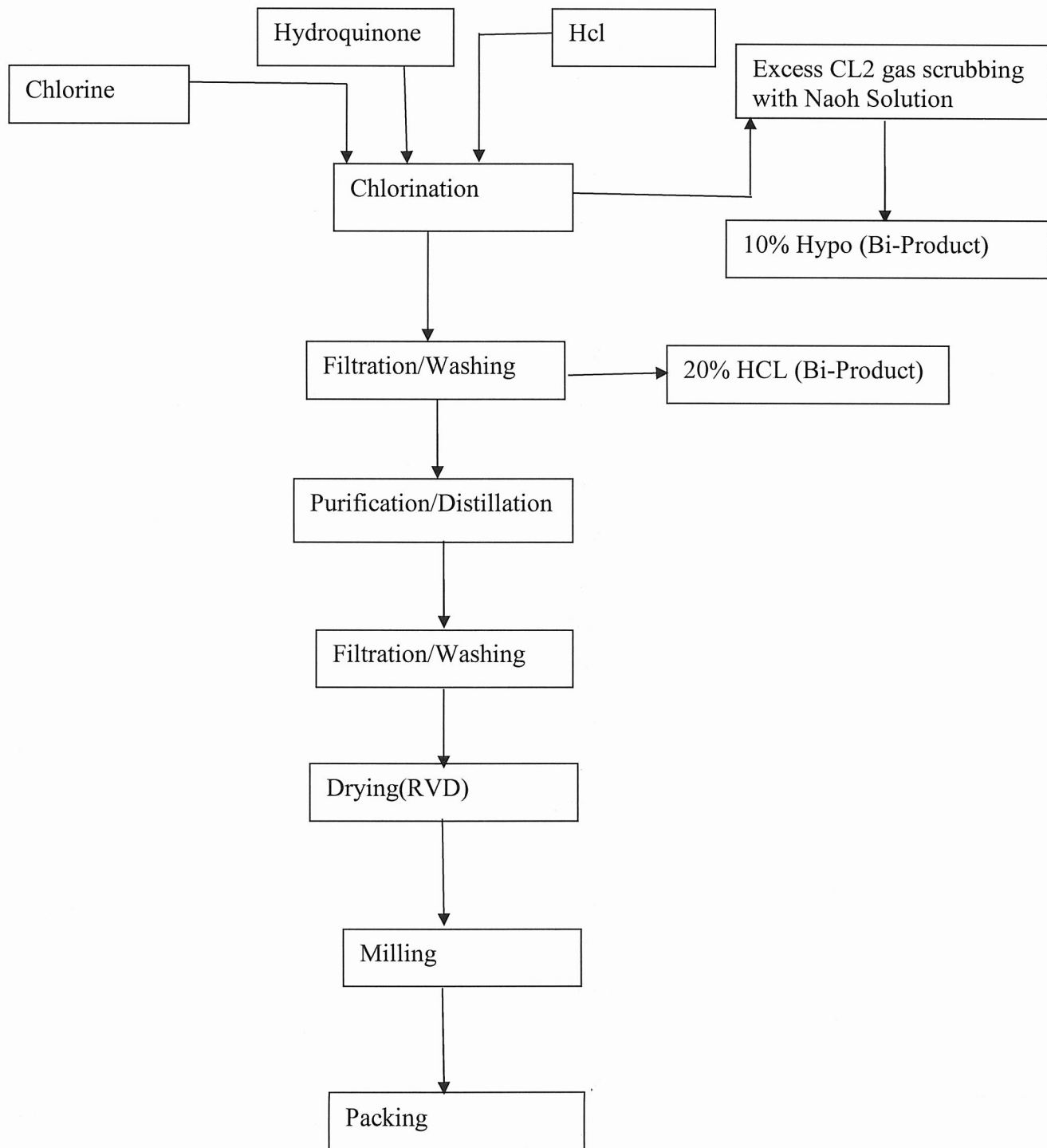
CLARIANT CHEMICALS (INDIA) LIMITED CUDDALORE

Flow Chart:Blue Pigments



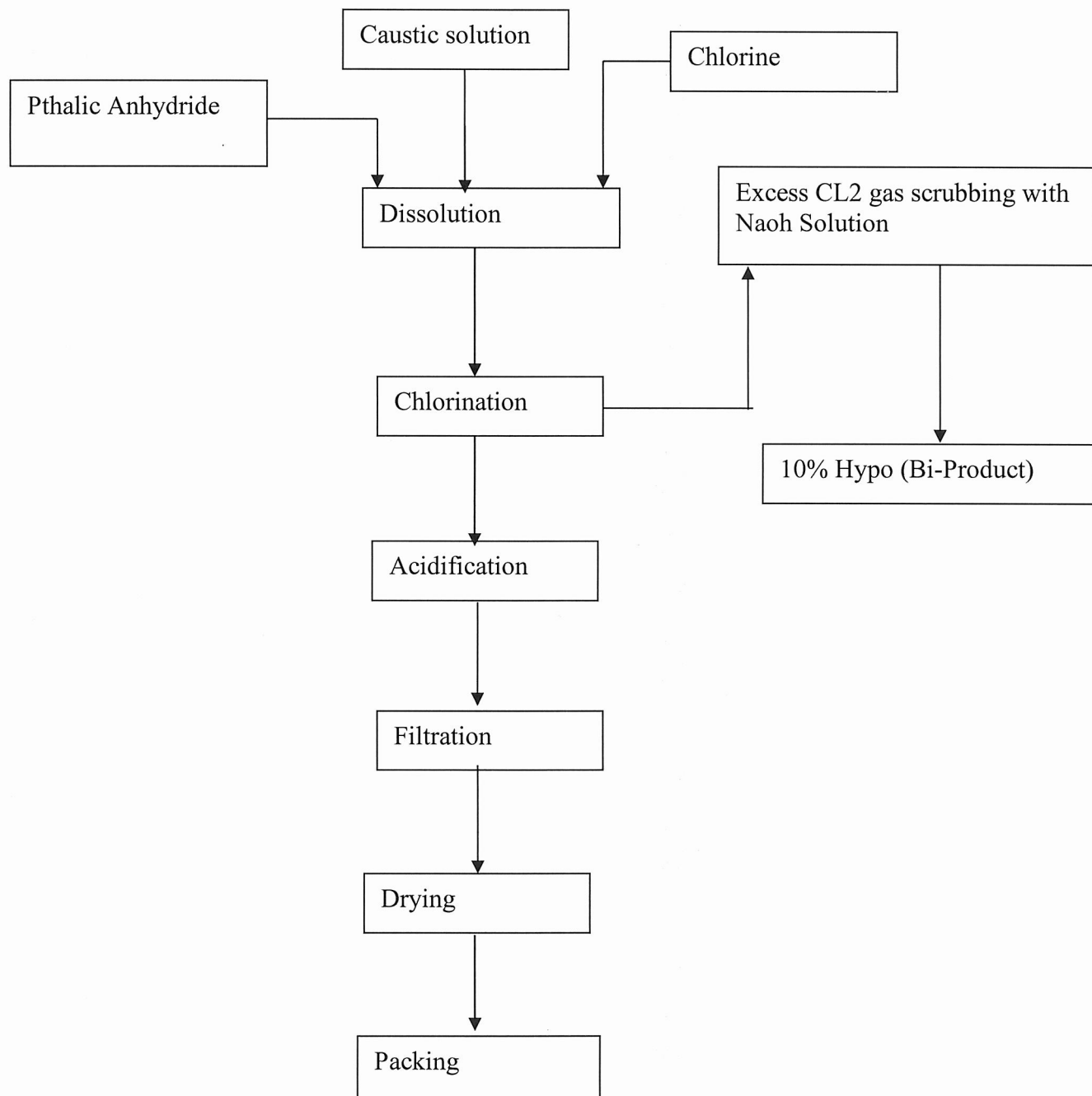
CLARIANT CHEMICALS (INDIA) LIMITED CUDDALORE

Flow Chart: Intermediates



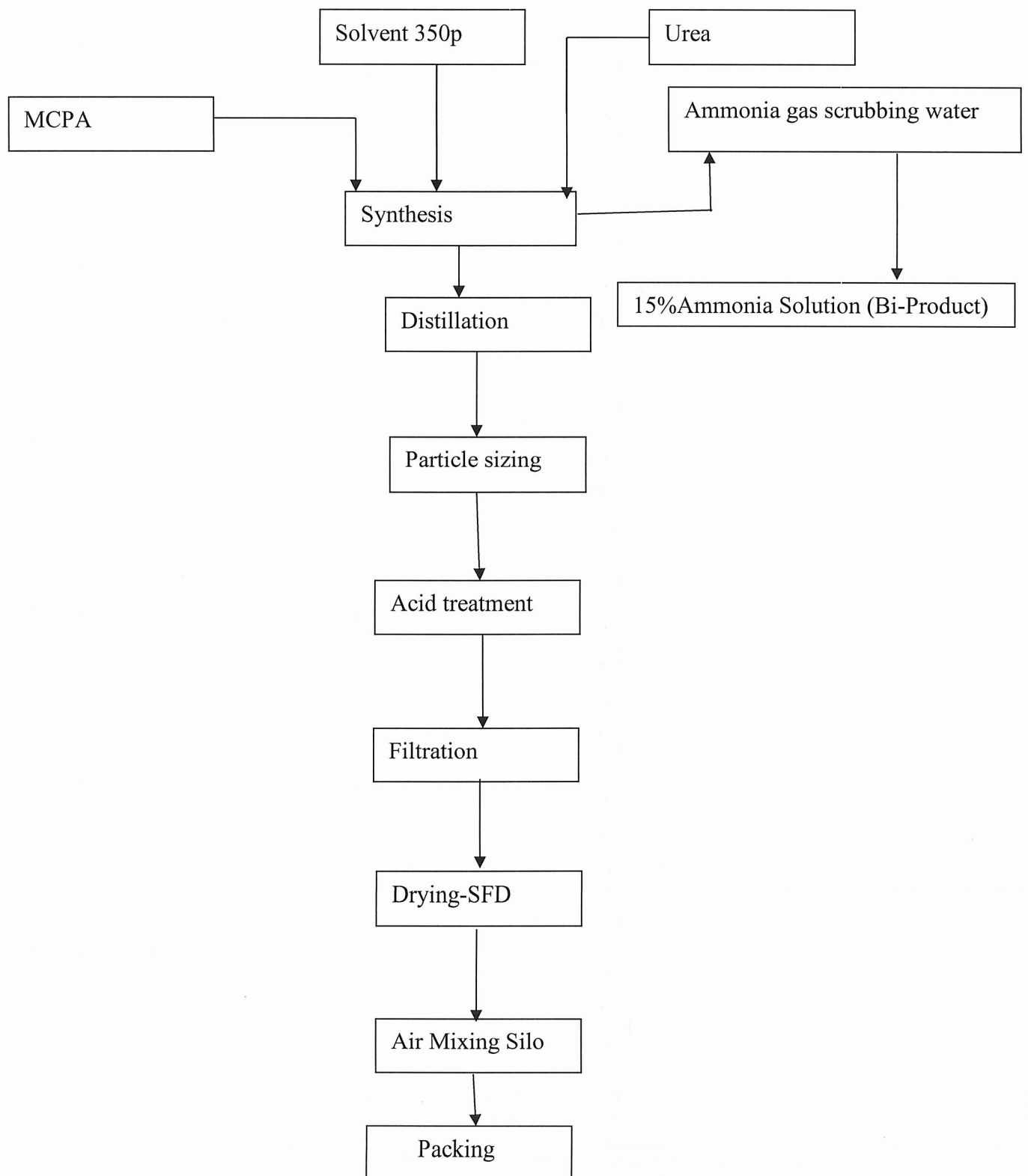
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Flow Chart:MCPA



CLARIANT CHEMICALS (INDIA) LIMITED CUDDALORE

Flow Chart:TCCPC



Annexure-02

TNPB STATEMENT OF REPORT OF ANALYSIS - WWTP

Name of the unit : M/s. Clariant Chemicals (India) Limited, SIPCOT Industrial Complex, Cuddalore.

Period : Jan – 2020 to Dec - 2020

Sl. No	Parameters	Unit	Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020	June 2020	July 2020	Aug 2020	Sept 2020	Oct 2020	Nov 2020	Dec 2020
1	pH	No	6.8	7.52	7.85		7.22	7.03	6.76	8.05	7.84	7.96	7.12	7.85
2	Total Suspended Solids	mg/l	22	24	14		14	28	14	22	18	20	18	26
3	Sulphates as SO ₄	mg/l	952	980	634		202	982	302	732	468	685	402	904
4	Oil and Grease	mg/l	<MDL	2	2.0		2.0	2.0	<MDL	<MDL	2.0	2.0	<MDL	2.0
5	BOD (3 day@ 27° C)	mg/l	28	24	26		22	26	20	26	22	24	22	26
6	COD	mg/l	112	112	112		116	108	96	136	108	104	96	124
7	Sulphide as S	mg/l	<MDL	<MDL	<MDL		<MDL	2.0	<MDL	<MDL	2.0	<MDL	<MDL	2.0
8	Amm. Nitrogen as NH ₃ -N	mg/l	6.72	8.96	8.4		8.9	8.4	8.4	8.9	8.4	8.96	6.72	11.24
9	Fluoride as F	mg/l	0.352	0.344	0.302		<MDL	0.302	0.312	0.302	<MDL	<MDL	<MDL	0.338
10	Total Kjeldhal Nitrogen	mg/l	8.4	10.09	10.09		10.65	10.09	10.09	10.09	10.09	10.65	8.4	13.45
11	Cyanide as CN	mg/l	<MDL	<MDL	<MDL		<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
12	Total phosphate as PO ₄	mg/l	0.602	0.436	0.604		0.604	0.632	0.602	<MDL	0.632	0.602	<MDL	0.736
13	Phenolic Compounds as C ₆ H ₅ OH	mg/l	<MDL	<MDL	<MDL		<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
14	Zinc	mg/l	0.232	<MDL	0.254		0.352	0.252	0.232	0.252	0.282	0.234	0.202	0.282
15	Nickel	mg/l	0.218	<MDL	0.246		<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
16	Hex. Chromium as Cr ⁶⁺	mg/l	<MDL	<MDL	<MDL		<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
17	Total Chromium as Cr	mg/l	<MDL	<MDL	<MDL		<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
18	Copper as Cu	mg/l	0.252	0.216	<MDL		0.204	0.214	0.254	<MDL	<MDL	<MDL	<MDL	<MDL
19	Cadmium as Cd	mg/l	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
20	Lead as Pb	mg/l	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
21	Dissolved Oxygen	mg/l	5.2	4.2	4.3		5.2	5.2	5.2	5.6	4.8	5.6	5.6	5.4
22	Total Residual Chlorine	mg/l	-	-	<MDL	-	-	-	-	-	-	-	-	-
23	Chloride	mg/l	-	-	560	-	-	-	-	-	-	-	-	-
24	Total Dissolved Solids	mg/l			1248	-	-	-	-	-	-	-	-	-

- TNPCB not collected both STP & WWTP samples in April-2020.

Annexure-03



TAMIL NADU POLLUTION CONTROL BOARD
ADVANCED ENVIRONMENTAL LABORATORY, CUDDALORE.
AMBIENT AIR QUALITY SURVEY – REPORT OF ANALYSIS.

Report F. No. 08 /AAQS/2020-2021, dated: 9.11.2020.

1. Name of the Industry : M/s. Clariant Chemicals (India) Ltd,
2. Address of the Industry : Sipcot Industrial Complex,
Cuddalore – 5.
3. Date of Survey : 8.10.2020
4. Duration of Survey : 24 Hours.
5. Category : Red/Large.
6. Land use classification : Industrial.

Meteorological Conditions.

Ambient Temperature (°C)	Min	Max	Relative Humidity(%)	Min	Max
	24	31		77	98
Weather condition	Clear		Rain Fall (mm)	Nil	
Predominant Wind Direction	SW – NE, SE – NW		Mean Wind Speed (Km/hr.)	3.13	

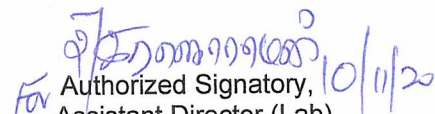
Ambient Air Quality Survey Results

Sl. No	Location	Direction *	Distance (m)*	Height from GL (m)	Pollutants concentration (µg/m ³)				
					PM ₁₀	PM _{2.5}	SO ₂	NO ₂	Cl
1	On top of the Scaffolding behind Blue plant	NE	275	2	-	52	-	-	-
2	On top of the Scaffolding behind Cooling Tower	E	300	2	86	-	25	30	<MDL
3	On top of the Scaffolding behind Marine pit	SE	400	2	72	-	20	24	<MDL
4	On top of the Scaffolding behind Guest house	SW	600	2	-	35	-	-	-
5	On top of the Scaffolding behind Health Centre	W	500	2	78	-	22	26	<MDL
6	On top of the Scaffolding behind Store	NW	650	2	90	-	28	34	<MDL

Note:* With respect to major emission sources.
the analytical results are restricted to the sampling period of 24hrs.

Test Performed	Test Method
PM _{2.5}	US EPA Federal Reference Method
PM ₁₀	IS 5182 (Part 23)-2006
SO ₂	IS 5182 (Part 2)-2001 RA:2012
NO ₂	IS 5182 (Part 6)-2006 RA:2012


Environmental Scientist


Authorized Signatory,
Assistant Director (Lab),
AEL, TNPCB, Cuddalore.



TAMIL NADU POLLUTION CONTROL BOARD

ADVANCED ENVIRONMENTAL LABORATORY, CUDDALORE.

STACK MONITORING SURVEY – Report of Analysis.

Report F. No. 08 /SM/2020-2021, Dated: 9.11.2020.


1. Name of the Industry : M/s. Clariant Chemicals (India) Ltd,
2. Address of the Industry : Sipcot Industrial Complex,
Cuddalore – 5.
3. Date of Survey : 8.10.2020.

Stack Monitoring Survey Results

Sl. No.	Stack attached to	Stack Temp °K	Velocity in (m/Sec)	Discharge rate in (m ³ /day)	Pollutants (mg/Nm ³)				
					PM	SO ₂	NO _x	Acid mist	Cl ₂
1	Milling Hot Air Generator	393	7.73	80573	45	15	30	-	-
2	Spin Flash Drier – Bag filter outlet	348	21.60	254258	43	-	-	-	-
3	Ball Mill – Bag filter outlet	321	19.27	109276	40	-	-	-	-
4	Milling plant – Cyclone separator outlet	318	24.51	315730	17	-	-	-	-
5	Blue pigment reactor – Double stage Alkali scrubber outlet	315	20.07	115981	-	-	-	0.23	-
6	Neutralization reactor – wet scrubber outlet	310	8.69	22663	-	-	-	0.92	-
7	Boiler 8T/hr – MDC outlet	401	13.07	595071	142	17	37	-	-
8	DG Set - 1010 KVA	638	21.60	171200	34	15	42	-	-
9	Chloranil Plant	335	7.82	75549	-	-	-	-	<MDL

<MDL – Minimum Deductable Limit


Environmental Scientist


Authorized Signatory,
Assistant Director (Lab),
AEL, TNPCB, Cuddalore.

-End of Test Report-



TAMIL NADU POLLUTION CONTROL BOARD
ADVANCED ENVIRONMENTAL LABORATORY, CUDDALORE.
AMBIENT AIR QUALITY SURVEY – REPORT OF ANALYSIS.

1. Name of the Industry : M/s. Clariant Chemicals (India) Ltd,
2. Address of the Industry : Kudikadu village,
Cuddalore – 5.
3. Date of Survey : 2.3.2021
4. Duration of Survey : 24 Hours.
5. Category : Red/Large.
6. Land use classification : Industrial.

Meteorological Conditions.

Ambient Temperature (°C)	Min 24	Max 31	Relative Humidity(%)	Min 77	Max 98
Weather condition	Clear		Rain Fall (mm)	Nil	
Predominant Wind Direction	SW – NE, SE – NW		Mean Wind Speed (Km/hr.)	3.13	

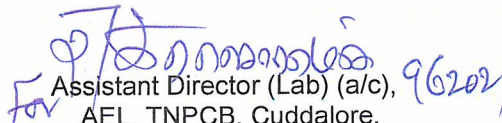
Ambient Air Quality Survey Results

Sl. No	Location	Direction	Distance (m)*	Height from GL (m)	Pollutants concentration (µg/m ³)				
					PM ₁₀	PM _{2.5}	SO ₂	NO ₂	Cl
1	On top of the Scaffolding behind Blue plant	NE	275	2	-	38	-	-	-
2	On top of the Scaffolding behind Cooling Tower	E	300	2	59	-	27	29	<MDL
3	On top of the Scaffolding behind Marine pit	SE	400	2	52	-	22	26	<MDL
4	On top of the Scaffolding behind Guest house	SW	600	2	-	18	-	-	-
5	On top of the Scaffolding behind Health Centre	W	500	2	35	-	16	19	<MDL
6	On top of the Scaffolding behind Store	NW	650	2	56	-	25	29	<MDL

Note:* With respect to major emission sources.
the analytical results are restricted to the sampling period of 24hrs.

Test Performed	Test Method
PM _{2.5}	US EPA Federal Reference Method
PM ₁₀	IS 5182 (Part 23)-2006
SO ₂	IS 5182 (Part 2)-2001 RA:2012
NO ₂	IS 5182 (Part 6)-2006 RA:2012


Environmental Scientist


Assistant Director (Lab) (a/c), 9/6/2021
AEL, TNPCB, Cuddalore.



TAMIL NADU POLLUTION CONTROL BOARD

ADVANCED ENVIRONMENTAL LABORATORY, CUDDALORE.

STACK MONITORING SURVEY – Report of Analysis.

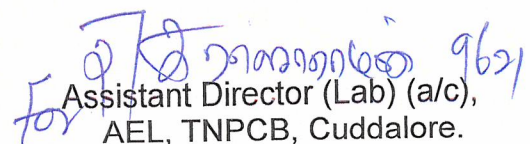
1. Name of the Industry : M/s. Clariant Chemicals (India) Ltd,
2. Address of the Industry : Kudikadu village,
Cuddalore – 5.
3. Date of Survey : 2.3.2021

Stack Monitoring Survey Results

Sl. No.	Stack attached to	Stack Temp °K	Velocity in (m/Sec)	Discharge rate in (m ³ /day)	Pollutants (mg/Nm ³)				
					PM	SO ₂	NO _x	Acid mist	Cl ₂
1	Milling Hot Air Generator	398	7.78	80075	46	17	32	-	-
2	Spin Flash Drier – Bag filter outlet	351	21.69	253135	45	-	-	-	-
3	Ball Mill – Bag filter outlet	323	19.33	108938	42	-	-	-	-
4	Milling plant – Cyclone separator outlet	321	24.62	314183	20	-	-	-	-
5	Blue pigment reactor – Double stage Alkali scrubber outlet	318	20.17	115459	-	-	-	0.25	-
6	Neutralization reactor – wet scrubber outlet	312	8.72	22595	-	-	-	0.95	-
7	Boiler 8T/hr – MDC outlet	403	13.11	593930	143	19	39	-	-
8	DG Set - 1010 KVA	641	21.65	170793	35	17	213	-	-
9	Chloranil Plant	338	7.86	75261	-	-	-	-	-
10	HAG	400	21.52	220385	46	-	-	-	-
11	DG 860km	488	20.40	33796	32	19	214	-	-
12	DG 200km	421	18.95	36390	34	17	67	-	-

<MDL – Minimum Deductable Limit


Environmental Scientist


Assistant Director (Lab) (a/c),
AEL, TNPCB, Cuddalore.