EC Compliance Report

Monitoring period

October 2020 to March 2021

M/s. Om Titanates

Plot no. C-1/B-2805, GIDC- Sarigam 396155,

Ta.: Umbergaon, Dist.: Valsad, Gujarat

EC Granted vide F. No. J-11011/186/2012-IA-II (I),

Dated 16/05/2015.

Compliance Status of Environmental Clearance of M/s Om Titanates – General / Specific Conditions for the period October 2020 to March 2021.

Ref: F. No. J-11011/186/2012-IA-II (I) and EC granted vide letter dated 16/05/2015.

Sr. No	EC Condition	Compliance Status
2.0	The Ministry of Environment, Forests and Climate Change has examined the application. It is noted that the proposal is for expansion of Synthetic Organic Chemical manufacturing unit at Plot Nos.C-1-B/2805 & 2806, GIDC, Sarigam, District Valsad, Gujarat by M/s Om Titanates. Total plot area is 1406 m^2. Total cost of project is Rs. 81.85 Lakhs. Damanganga canal, river Darotha and River Damanganga is flowing at a distance of 10 km. Following products will be manufactured. -	We agree with the terms & conditions imposed herein. We have same production capacity as mentioned in EC conditions. Production details of the period of Oct'20 to March'21 is given below.

S. No.	Name of the Product		Total Quantity (MT/M)	
			Existing Scenario	Proposed Scenario
1.	Tetra Butyl Titanate		50	100
2.	Tetra Iso Propyl Titanate			
3.	TPT – 20 B	**Blending**		
4.	Tetra 2- Ethyl Hexyl Titanate			
5.	Titanium Acetyl Acetonate			
6.	Ethyl Titanate			
7.	Di-isopropyl ethyl amine		Nil	15
8.	Ammonium Chloride		47	94
9.	Sodium/potassium Ethyl Sulphate		Nil	22
	Total		**50**	**231**

Production Details

Month	Tetra Isopropyl Titanate	Tetra-n-Butyl Titanate	Tetra 2-Ethyl Hexyl Titanate	Titanium Acetyl Acetonate	Ethyl Titanate	Total	Ammonium Chloride
Oct-20	52.29	6.00	0.02	0	0	58.31	48.31
Nov-20	48.24	3.00	0	0	0	51.24	40.06
Dec-20	46.15	27.08	0	0	0	73.23	52.21
Jan-21	70.54	23.97	0	0.38	0	94.89	58.91
Feb-21	74.64	8.74	0	0	15.59	98.97	68.80
Mar-21	85.41	14.43	0	0	0	99.84	62.06
Total	**377.28**	**83.211**	**0.02**	**0.38**	**15.59**	**476.48**	**330.34**

3.0	Scrubber will be provided to control process emission viz. Ammonia & HCl. Total fresh water requirement from GIDC water supply will be increased from 4 m^3/day to 13.5 m^3/day after expansion.	• There is no process gas emission from the manufacturing process. Provision of water + Acidic scrubber is made to take care of any accidental release of ammonia & HCl. • The water requirement for the project is met by the GIDC supply available at the site. Water supply bill of March'21 is

<table>
<tr><th>Sr. No</th><th>EC Condition</th><th>Compliance Status</th></tr>
<tr><td></td><td></td><td>given below.

Water consumption data for the period of Oct.’20 to March’21 is given below.
<table>
<tr><th colspan="3">Water Consumption</th></tr>
<tr><th>Month</th><th>MIN</th><th>MAX</th></tr>
<tr><td>Oct.’20</td><td>5</td><td>12</td></tr>
<tr><td>Nov.’20</td><td>7</td><td>14</td></tr>
<tr><td>Dec.’20</td><td>5</td><td>13</td></tr>
<tr><td>Jan.’21</td><td>3</td><td>16</td></tr>
<tr><td>Feb.’21</td><td>6</td><td>15</td></tr>
<tr><td>March’21</td><td>8</td><td>16</td></tr>
<tr><td>TOTAL</td><td>34</td><td>86</td></tr>
</table></td></tr>
<tr><td></td><td>Total industrial effluent generation will be 1 m^3/day after proposed expansion from boiler blow down. Effluent will be treated in the effluent treatment plant (ETP) and treated effluent will be used for toilet flushing. Sewage will be treated in STP and treated sewage will be reused for horticulture purpose. Waste oil and used batteries will be sold to authorized recyclers/re-processors.</td><td>• There is no waste water generation from the manufacturing process. Industrial effluent only generated as cooling tower blow down, and scrubber water which is evaporated in in-house evaporator.The unit is a zero discharge unit.
<table>
<tr><th colspan="3">Evaporator Salt Generation Details</th></tr>
<tr><th>Month</th><th>MIN</th><th>MAX</th></tr>
<tr><td>Oct.’20</td><td>0.14</td><td>0.31</td></tr>
<tr><td>Nov.’20</td><td>0.13</td><td>0.38</td></tr>
<tr><td>Dec.’20</td><td>0.14</td><td>0.44</td></tr>
<tr><td>Jan.’21</td><td>0.18</td><td>0.46</td></tr>
<tr><td>Feb.’21</td><td>0.17</td><td>0.42</td></tr>
<tr><td>March’21</td><td>0.12</td><td>0.47</td></tr>
<tr><td>TOTAL</td><td>0.88</td><td>2.17</td></tr>
</table>
• As per CC&A amendment dated 03/08/2015 Domestic wastewater @0.5 KLD is being disposed through septic tank/ soak pit.</td></tr>
</table>

<table>
<tr><th>Sr. No</th><th>EC Condition</th><th>Compliance Status</th></tr>
<tr><td></td><td>After proposed expansion project, Ammonium chloride will be added as product in product list & will be sold as product.</td><td>• Ammonium chloride is added as product in product list and sold as product AS Shown in Compliance of condition no. 1.</td></tr>
<tr><td>4.0</td><td>Public hearing was exempted as per section 7 (i), (iii) Stage (3), Para (i) (b) of EIA Notification, 2006.</td><td>--</td></tr>
<tr><td>5.0</td><td>All synthetic organic chemical industries located inside the notified industrial estate/area are listed at S.N. 5(f) under category 'B' and appraised at State level. Due to applicability of general condition (i.e. interstate boundary within 10 Km), project proposal is treated as category 'A' project and appraised at Central Level.</td><td>--</td></tr>
<tr><td>6.0</td><td>The proposal was considered by the Expert Appraisal Committee (Industry) in its 3rd and 34th meetings held during 3rd - 5th December 2012 and 17th - 19th February, 2015 respectively. Proponent and the EIA Consultant namely M/s Precitech Laboratories Pvt. Ltd., have presented EIA / EMP report as per the TOR. EAC has found the EIA/EMP Report and additional information to be satisfactory and in full consonance with the presented TORs. The Committee recommended the proposal for environmental clearance.</td><td>--</td></tr>
<tr><td>7.0</td><td>Based on the information submitted by the project proponent, the Ministry of Environment, Forest and Climate Change hereby accords environmental clearance to above project under the provisions of EIA Notification dated 14th September 2006, subject to the compliance of the following Specific and General Conditions:</td><td>--</td></tr>
<tr><td colspan="3">A. SPECIFIC CONDITIONS</td></tr>
<tr><td>i.</td><td>National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G.S.R. 608(E) dated 21st July, 2010 and amended time to time shall be followed by the unit.</td><td>• The condition is being complied.
• Please find herewith Stack air monitoring report for existing unit attached as Annexure-2.
• Stack monitoring is done by M/s Precitech Laboratories Pvt. Ltd. Its NABL accreditation certificate no. is TC-5049, Issue date 19/09/2019 & validity until 18/09/2021. Certificate is given below.
<table>
<tr><th colspan="6">Stack Monitoring Summary</th></tr>
<tr><th rowspan="2">No.</th><th rowspan="2">Parameter</th><th rowspan="2">Unit</th><th rowspan="2">Limit</th><th colspan="2">Thermopac</th></tr>
<tr><th>MIN.</th><th>MAX.</th></tr>
<tr><td>1</td><td>PM</td><td>mg/Nm^3</td><td>150</td><td>29</td><td>31</td></tr>
<tr><td>2</td><td>SOx</td><td>ppm</td><td>100</td><td>BDL</td><td>BDL</td></tr>
<tr><td>3</td><td>NOx</td><td>ppm</td><td>50</td><td>8</td><td>10</td></tr>
<tr><td colspan="6">Monitoring dates: 19/10/2020, 18/01/2021</td></tr>
</table></td></tr>
</table>

Sr. No	EC Condition	Compliance Status

National Accreditation Board for Testing and Calibration Laboratories
(A Constituent Board of Quality Council of India)

NABL

QCI

CERTIFICATE OF ACCREDITATION

PRECITECH LABORATORIES PVT. LTD.

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

1ST FLOOR BHANUJYOT COMPLEX, PLOT NO. C5/27, VAPI, VALSAD, GUJARAT, INDIA

in the field of

TESTING

Certificate Number: TC-5049

Issue Date: 19/09/2019 Valid Until: 18/09/2021

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Signed for and on behalf of NABL

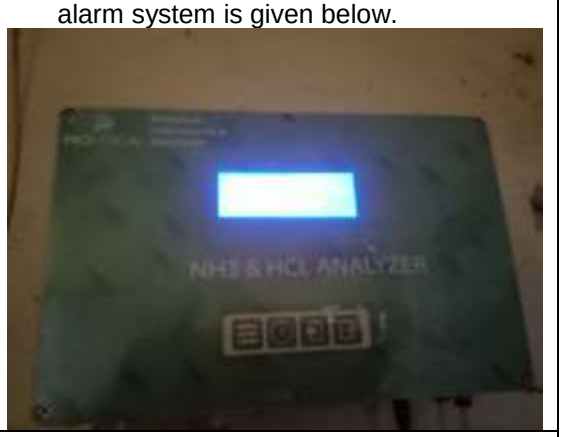
N. Venkateswaran
Chief Executive Officer

<table>
<tr><th>Sr. No</th><th>EC Condition</th><th>Compliance Status</th></tr>
<tr><td>ii.</td><td>Scrubber shall be provided to control process emission viz. Ammonia & HCl. The scrubbed water should be sent to ETP for further treatment. Efficiency of scrubber shall be monitored regularly and maintained properly. Scrubbers vent shall be provided with on-line detection and alarm system to indicate higher than permissible value of controlled parameters. At no time, the emission levels shall go beyond the prescribed standards. The system should be interlocked with the pollution control equipments so that in case of any increase in pollutants beyond permissible limits, plant should be automatically stopped.</td><td>

There is no process gas emission from the manufacturing process. Provision of water + acidic scrubber is made to take care of any accidental release of ammonia & HCl. Hence, on-line detection system is not required. Regular process stack monitoring is being carried out.
Please refer Annexure-2 for Stack Monitoring Report.
Scrubbed water containing salts is evaporated in in-house evaporator and the salts are sent to TSDF.
Please refer Annexure-6 for performance evaluation report related to scrubber efficiency
Stack monitoring is done by M/s Precitech Laboratories Pvt. Ltd. Its NABL accreditation certificate no. is TC-5049, Issue date 19/09/2019 & validity until 18/09/2021.

<table>
<tr><th colspan="6">Stack Monitoring Summary</th></tr>
<tr><th rowspan="2">No.</th><th rowspan="2">Parameter</th><th rowspan="2">Unit</th><th rowspan="2">Limit</th><th colspan="2">Scrubber</th></tr>
<tr><th>MIN.</th><th>MAX.</th></tr>
<tr><td>3</td><td>HCl</td><td>mg/Nm^3</td><td>20</td><td>21</td><td>23</td></tr>
<tr><td>4</td><td>NH_3</td><td>mg/Nm^3</td><td>175</td><td>34</td><td>38</td></tr>
<tr><td colspan="6">Monitoring dates: 19/10/2020, 18/01/2021</td></tr>
</table>

There is no pressure generation because ammonia consume in the reaction so no need to provide interlocking system.
Photographs of online detection and alarm system is given below.



</td></tr>
<tr><td>iii.</td><td>Ambient air quality data shall be collected as per NAAQES standards notified by the Ministry vide G.S.R. No. 826(E) dated 16th September 2009. The levels of PM_{10}, $S0_2$, NO_x, CO, HCl and VOC shall be monitored in the ambient air and displayed at a convenient location near the main gate of the company and at important public places.</td><td>

Display board photograph is given below.

</td></tr>
</table>

Sr. No	EC Condition	Compliance Status
	The company shall upload the results of monitored data on its website and shall update the same periodically. It shall simultaneously be sent to the Regional office of MOEF, the respective Zonal office of CPCB and GPCB. All necessary steps should be taken for monitoring of chlorine and HCl as well as VOCs in the proposed plant.	 • Regular Ambient Air quality monitoring is carried out for unit. Natural Gas is used as fuel and hence CO is not monitored. • Monitoring report of Ambient Air is submitted as a part of six-monthly compliance report to Regional office of MOEF, the respective Zonal office of CPCB and GPCB. HCl and VOC are monitored. Chlorine is not monitored as there is no source of Chlorine generation. • Please find herewith ambient air quality monitoring report for existing unit is attached as **Annexure-3.** • Air monitoring is done by M/s Precitech Laboratories Pvt. Ltd. Its NABL accreditation certificate no. is TC-5049, Issue date 19/09/2019 & validity until 18/09/2021. • We have regularly uploaded EC compliance report on our website. The screenshot for the same is given below.

Ambient Air Monitoring Summary

No.	Parameter	Unit	Limit	Near Security Gate		Backside of the Plant	
				MIN.	MAX.	MIN.	MAX.
1	**PM10**	µg/m³	100	89	91	83	88
2	**PM2.5**	µg/m³	60	51	53	42	49
3	**SO2**	µg/m³	80	23	24	25	26
4	**NOx**	µg/m³	80	26	28	28	29
5	**NH3**	µg/m³	850	7	8	9	11
6	**HCl**	µg/m³	200	BDL	BDL	BDL	BDL
7	**HC**	ppm	--	BDL	BDL	BDL	BDL

BDL = Below Detection Limit
Monitoring Date: 19/10/2020, 18/01/2021

Sr. No	EC Condition	Compliance Status
iv.	In plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fugitive emissions shall be controlled by providing closed storage, closed handling & conveyance of chemicals/materials, multi cyclone separator and water sprinkling system. Dust suppression system including water sprinkling system shall be provided at loading and unloading areas to control dust emissions. Fugitive emissions in the work zone environment, product, raw materials storage area etc. shall be regularly monitored.	• Fugitive emissions from all the vulnerable sources are provided. • Most of the Raw materials and the products are liquid. Hence, multicyclone separator and water sprinkling system is not required. Closed handling system is provided in plant. • Underground Storage tanks are provided for IPA & Hexane. Raw Materials & Products are stored in closed containers and ventilated storage area. Raw-material feeding carried out by vacuum pump. Regular monitoring is done of piping and fittings for checking of any leakages. Good housekeeping maintained in the plant. Dust suppression system is not required. • Please find herewith workplace monitoring report for existing unit is attached as **Annexure–4**. • Workplace monitoring is done by M/s Precitech Laboratories Pvt. Ltd. Its NABL accreditation certificate no. is TC-5049, Issue date 19/09/2019 & validity until 18/09/2021.

Workplace Monitoring Summary

No.	Parameter	Unit	Limit	Inside Plant-1		Inside Plant-2	
				MIN.	MAX.	MIN.	MAX.
1	n- Butanol	mg/m^3	150	28.5	31.5	5.5	6.8
2	NH3	mg/m^3	18	6	7	6.8	7.4
3	n-Hexane	mg/m^3	180	21.5	23.4	3.1	3.5
4	Ethanol	mg/m^3	1900	96	104	6.5	7.8
Monitoring Date: 19/10/2020, 18/01/2021							

v.	For further control of fugitive emissions, following steps shall be followed: a) Closed handling system shall be provided for chemicals. b) Reflux condenser shall be provided over reactor.	Complied with. a) Raw-material feeding carried out by vacuum pump. b) Reflux condenser is provided over reactor.

<table>
<tr><th>Sr. No</th><th>EC Condition</th><th>Compliance Status</th></tr>
<tr><td></td><td>c) System of leak detection and repair of pump/pipeline based on preventive maintenance.

d) The acids shall be taken from storage tanks to reactors through closed pipeline. Storage tanks shall be vented through trap receiver and condenser operated on chilled water.

e) Cathodic protection shall be provided to the underground solvent storage tanks.</td><td>c) Regular monitoring is done of piping and fittings for checking of any leakages.

d) Only IPA & Hexane are stored in underground tank and other raw materials are stored in drums in designated storage area. Raw-material feeding is carried out through closed pipeline.

e) All underground pipe and raw water tanks are provided with Cathodic protection.</td></tr>
<tr><td>vi.</td><td>The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards.

Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution.</td><td>• Complied with.
• Stack height of DG set as per CPCB standards.

• Acoustic enclosure is provided to the DG sets to mitigate the noise pollution.
• We are carrying out the stack monitoring on regular intervals.
• The stack monitoring report is attached as Annexure-2.

• Stack monitoring is done by M/s Precitech Laboratories Pvt. Ltd. Its NABL accreditation certificate no. is TC-5049, Issue date 19/09/2019 & validity until 18/09/2021.</td></tr>
<tr><td>vii.</td><td>Fresh water requirement from GIDC water supply should not exceed 13.5 m3/day. No ground water shall be used.</td><td>• Complied with.
• GIDC water bill is provided in condition no. 3.
• Water consumption detail is given below.
<table>
<tr><th colspan="3">Water Consumption</th></tr>
<tr><th>Month</th><th>MIN</th><th>MAX</th></tr>
<tr><td>Oct.’20</td><td>5</td><td>12</td></tr>
<tr><td>Nov.’20</td><td>7</td><td>14</td></tr>
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<tr><td>March’21</td><td>8</td><td>16</td></tr>
<tr><td>TOTAL</td><td>34</td><td>86</td></tr>
</table></td></tr>
<tr><td>viii.</td><td>Trade effluent should be treated in ETP. Sewage shall be treated in the STP. 'Zero' effluent discharge should be adopted, and no effluent will be discharged outside the premises. Online monitoring (24x7) for pH and TOC may be conducted within the plant.</td><td>• There is no waste water generation from the manufacturing process. Industrial effluent only generated as cooling tower blow down, and scrubber water which is evaporated in in-house evaporator. The unit is a zero-discharge unit. Hence, online monitoring system not installed.
• Domestic wastewater @0.8 KLD is being disposed through septic tank/ soak pit</td></tr>
<tr><td>ix.</td><td>Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.</td><td>• Complied with.
• There is no waste water generation from the manufacturing process. Industrial effluent only generated as cooling tower blow down, and scrubber water which is</td></tr>
</table>

Sr. No	EC Condition	Compliance Status
		evaporated in in house evaporator. The unit is a zero-discharge unit. • Separate storm water drainage is provided within the plant premises.
x.	The company shall obtain Authorization for collection, storage and disposal of hazardous waste under the Hazardous Waste (Management, Handling and Trans-Boundary Movement) Rules, 2008 and amended as on date for management of Hazardous wastes and prior permission from GPCB shall be obtained for disposal of solid / hazardous waste in the TSDF.	• We have obtained CC&A from GPCB, CC&A Compliance Is given Below.

Sr. No.	Conditions	Compliance
1	Consent Order No. AWH-69991, Date of issue 03/03/2015	We have obtained following amendment in CC&A which are as below – • CC&A amendment no. 95506 dated 29/05/2015
2	**The amendment as per amendment no. AWH – 95506, dated 29.05.2015 as below-** In exercise of the power conferred under section-25 of the water (Prevention of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution) 1981 and Hazardous waste (Management, Handling & Transboundary Movement) Rules 2008 This Board is empowered to Amend consent order in connection with above references no. (2) the CCA order – AWH-69991 issued under the provisions of the various Environmental Act Rule, which stand amended for the following	We are currently manufacturing the products as mentioned in the consent

Sr No	Product	Existing (TPM)	Proposed (TPM)	Total Quantity (TPM)
1	Tetra Butyl Titanate	50	50	100
2	Tetra Iso Propyl Titanate			
3	TIPT 200 (Bleeding Process Only)			
4	Tetra 2-Ethylhexy Titanate (Bleeding Process Only)			
5	Titanium Acetyl Acetonate (Bleeding Process Only)			
6	Ethyl Titanate			
7	D-isopropyl ethyl amine	0.00	15	15
8	Sodium/ Potassium Ethyl Sulphate	0.00	22	22
	By Product			
1	Ammonium Chloride	0.00	94	94
Total		**50**	**181**	**231**

Sr. No.	Conditions	Compliance
	SUBJECT TO SPECIFIC CONDITIONS:	
1.	Applicant shall have to follow all conditions mentioned in CTE Amendment No. 99991 dated 23/01/2014	Noted
3.	**CONDITIONS UNDER THE WATER ACT:**	
3.1	The quantity of the industrial discharge shall not exceed 1000 Lits/Day	The daily quantity of industrial wastewater discharge is within the consented limit (1 KLD)
3.2	The quantity of the domestic waste water (sewage) shall not exceed 500 lits/day	The daily quantity of domestic wastewater is within the consented limit (0.5 KLD)
3.2.1	The effluent treatment plant consisting of the primary units as proposed by you shall be installed (whichever is applicable)	We have installed ETP consisting primary treatment
3.3	**TRADE EFFLUENT**	
3.3.1	The effluent from the industrial unit shall conform to the GPCB inlet norms mentioned in column No 2 below The final discharge from ETP shall adhere to the prescribed standards by GPCB	The effluent is treated in the in-house ETP and treated effluent from ETP is discharged after confirming the norms prescribe for the company
3.3.2	The applicant shall provide adequate effluent treatment system in order to achieve the quality of the treated effluent as per GPCB norms mentioned in column No. 2	The effluent is treated in the in-house ETP and treated effluent from ETP is discharged after confirming the norms prescribe for the company
3.3.3	The final treated effluent confirming to the above standards shall be evaporated into well designed evaporator provided on annealing furnace into	The effluent is treated in the in-house ETP and treated effluent from ETP is evaporated in evaporator provided on

Parameter	GPCB NORMS
pH	6.5 to 8.5
Temperature	40 °C
Color (Pt.Co scale) in units	100 units
Suspended Solid	100 mg/l
Oil and Grease	10 mg/l
Phenolic Compound	1 mg/l
Ammoniacal Nitrogen	50 mg/l
BOD (3 days at 27°C)	30 mg/l
COD	250 mg/l
Chloride	600 mg/l
Sulphates	1000 mg/l
Total dissolved Solids	2100 mg/l
Bio-assay test	90% Survival of fish after 96 hour in 100% effluent

All efforts shall be made to remove colour & unpleasant odour as far as practicable

Sr. No	EC Condition	Compliance Status
	Measures shall be taken for firefighting facilities in case of emergency.	• Adequate nos. of fire extinguishers are are provided for firefighting in case of emergency. • The details of fire extinguishers are given below.

Sr. No	EC Condition	Compliance Status

OM TITANATES
Plot No. C1B/2805 & 2806, Chemical Zone, GIDC, Sarigam

List of Fire Extinguisher

Sr. No.	Description	Capacity	Qty (Nos)	Due Date
1	CO2 Type	2 Kgs	1	10.09.19
2	CO2 Type	4.5 Kgs	2	10.09.19
3	ABC (Stone Pressure) Type	5 Kgs	1	02.08.19
4	ABC (Stone Pressure) Type	5 Kgs	2	07.08.19
5	ABC (Stone Pressure) Type	9 Kgs	2	28.08.19
6	ABC (Stone Pressure) Type	9 Kgs	1	17.09.19
7	ABC (Stone Pressure) Type	9 Kgs	1	07.03.20
8	ABC (Stone Pressure) Type	10 Kgs	1	02.08.19
9	DCP	10 Kgs	1	07.08.19
10	M. Foam (AFFF) Type	50 Ltr	1	25.02.20
11	M. Foam (AFFF) Type	50 Ltr	1	25.02.20
12	M. Foam (AFFF) Type	50 Ltr	1	04.05.19
13	M. Foam (AFFF) Type	50 Ltr	2	02.08.19
14	M. Foam (AFFF) Type	50 Ltr	1	07.08.19
Total			**18**	

Ph.: (0260) 3292759
Mob.: 9377481647

JAI FIRE & SAFETY

Supplier of :
Fire Extinguishers & Refilling Contractors and Entirerange of Safety Equipments
Shop No. 09, Suyog Complex, Road No. 7, G.I.D.C., Sarigam,Dist. Valsad, Gujarat.

Ref. No. Date :

CERTIFICATE

This is to certify that

1) Mr. Vikram Giri
2) Mr. Ranjeet Kumar Pandit
3) Mr. Govind Jogi
4) Mr. Sundarlal Pandit

Has participated in training programme for fire fighting conducted on 20/08/2020 from 11.00 A.M to 12.00 P.M for M/S OM TITANATES, Plot No. C1B/2805 & 2806, Chemical Zone, GIDC, Sarigam - 396155 Gujarat.

For JAI FIRE & SAFETY
Proprietor

Date: 20.08.2020
Place: SARIGAM
(Note: This certificate is valid up to one year only)

xi.	The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time.	• The storage and handling of the hazardous chemicals is done as per the MSIHC Rules, 1989 as amended time to time like preparation of emergency response plan, emergency alert system like siren or announcement is stated to be available.

Sr. No	EC Condition	Compliance Status
	All Transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.	All Transportation of Hazardous Chemicals are as per the Motor Vehicle Act (MVA), 1989 like 1. Checking of driver's license for its validity, authorizing him to drive vehicles carrying HAZCHEM, 2. Checking of documents and inspection of vehicles, 3. Implement vehicle entry, loading/unloading check list, 4. Checking of compatibility with material last transported with the one intended to be loaded, 5. Placing of appropriate fire extinguishers, 6. Loading/unloading operation to be carried out under supervision, Transport Emergency Card (TREMCARD) during loading/unloading operation.
xii.	The company shall undertake following waste minimization measures :- a. Metering and control of quantities of active ingredients to minimize waste. b. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. c. Use of automated filling to minimize spillage. d. Use of Close Feed system into batch reactors. e. Venting equipment through vapour recovery system. f. Use of high-pressure hoses for equipment clearing to reduce wastewater generation.	Complied with. a. Metering arrangement for quantities of active ingredients is provided. b. By-product ammonium chloride is being sold as product. c. Raw-material feeding is carried out by vacuum pump. d. Process is designed to operate with “Closed feed” system in reactors. e. Venting equipment is provided through vapour recovery system. f. Dedicated reactors are provided and no equipment washing is required.
xiii.	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms.	• Noted. Complied with. • Firefighting system are designed and installed as per prevailing rules & regulations • The details of fire extinguishers are given below.

OM TITANATES
Plot No. C1B/2805 & 2806, Chemical Zone, GIDC, Sarigam

List of Fire Extinguisher

Sr. No.	Description	Capacity	Qty (Nos)	Due Date
1	CO2 Type	2 Kgs	1	10.09.19
2	CO2 Type	4.5 Kgs	2	10.09.19
3	ABC (Stone Pressure) Type	5 Kgs	1	02.08.19
4	ABC (Stone Pressure) Type	5 Kgs	2	07.08.19
5	ABC (Stone Pressure) Type	9 Kgs	2	28.08.19

Sr. No	EC Condition	Compliance Status

6	ABC (Stone Pressure) Type	9 Kgs	1	17.09.19
7	ABC (Stone Pressure) Type	9 Kgs	1	07.03.20
8	ABC (Stone Pressure) Type	10 Kgs	1	02.08.19
9	DCP	10 Kgs	1	07.08.19
10	M. Foam (AFFF) Type	50 Ltr	1	25.02.20
11	M. Foam (AFFF) Type	50 Ltr	1	25.02.20
12	M. Foam (AFFF) Type	50 Ltr	1	04.05.19
13	M. Foam (AFFF) Type	50 Ltr	2	02.08.19
14	M. Foam (AFFF) Type	50 Ltr	1	07.08.19
	Total		**18**	

Ph.: (0260) 3292759
Mob.: 9377481647

JAI FIRE & SAFETY

Supplier of :
Fire Extinguishers & Refilling Contractors and Entirerange of Safety Equipments
Shop No. 09, Suyog Complex, Road No. 7, G.I.D.C., Sarigam,Dist. Valsad, Gujarat.

Ref. No. Date :

CERTIFICATE

This is to certify that

1) Mr. Vikram Giri
2) Mr. Ranjeet Kumar Pandit
3) Mr. Govind Jogi
4) Mr. Sundarlal Pandit

Has participated in training programme for fire fighting conducted on 20/08/2020 from 11.00 A.M to 12.00 P.M for M/S OM TITANATES, Plot No. C18/2805 & 2806, Chemical Zone, GIDC, Sarigam - 396155 Gujarat.

For JAI FIRE & SAFETY
Proprietor

Date: 20.08.2020
Place: SARIGAM
(Note: This certificate is valid up to one year only)

xiv.	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees should be undertaken on regular basis. Training to all employees on handling of chemicals should be imparted. Occupational health surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.	• Our unit is small scale unit with less man-power. 3 no. of employees underwent occupational health surveillance latest occupational health surveillance summary given below. • In proposed expansion we will carry out pre-employment medical examination (PME). • Medical Health checkup report is attached as **Annexure-1.** • Safety training certificate of the employees is given below..

Sr. No	EC Condition	Compliance Status

OM TITANATES

SUMMARY OF MEDICAL CHECK UP- Nov 2020

Dr. AJAY S. PAWAR
M.B.B.S., A.F.I.H.,D.D.M.,D.I.H.M.
Reg. No.- G-45766
Industrial Health Physician

Ph.: (0260) 3292759
Mob.: 9377481647

JAI FIRE & SAFETY

Supplier of :
Fire Extinguishers & Refilling Contractors and Entirerange of Safety Equipments

Shop No. 09, Suyog Complex, Road No. 7, G.I.D.C., Sarigam,Dist. Valsad, Gujarat.

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For JAI FIRE & SAFETY
Proprietor

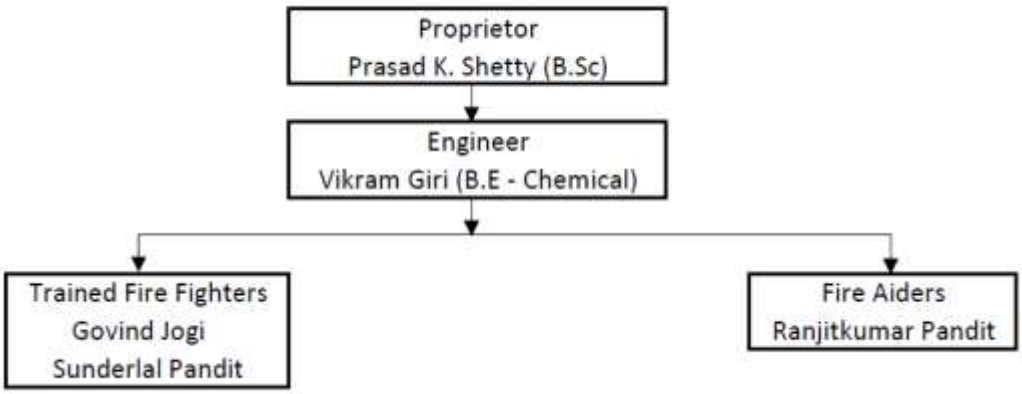
Date: 20.08.2020

Place: SARIGAM

(Note: This certificate is valid up to one year only)

xv.	As proposed, green belt should be developed at least 160 m^2 area in and around the plant premises to mitigate the effects of fugitive emissions all around the plant as per the CPCB guidelines in consultation with DFO.	• Plantation work has been gradually upgraded and plantation is done as per the CPCB guidelines. Total greenbelt area is 188 m^2. • Photographs of existing Green belt is given below.

xvi.	AII the recommendations made in the risk assessment report should be satisfactorily implemented.	• We have implemented all the recommendations made in the risk assessment report.
xvii	The Company shall submit within three months their policy towards Corporate Environment Responsibility which should inter-alia address (i) Standard operating process/procedure to being into focus any infringement/deviation/ violation of environmental or forest norms/conditions, (ii) Hierarchical system or Administrative order of the Company to deal with environmental issues and ensuring compliance to the environmental clearance conditions and (iii) System of reporting of non-compliance/violation environmental norms to the Board of Directors of the company and/or stakeholders or shareholders.	• An Environment management cell is in place & functioning well. Organogram of Environment management cell is given below.



B. GENERAL CONDITIONS

i.	The project authorities shall strictly adhere to the stipulations made by the Gujarat Pollution Control Board.	We have obtained CC&A from the Gujarat CC&A compliance is given below.

Sr. No.	Conditions	Compliance
1	Consent Order No. AWH-[illegible] Date of issue [illegible]	We have obtained following amendment in CC&A which are as below :- • CC&A amendment no. [illegible] dated 29/05/2015
2	**The amendment as per amendment no. AWH – [illegible], dated 29.05.2015 as below-** In exercise of the power conferred under section-25 of the water (Prevention of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution) 1981 and Hazardous waste (Management, Handling & Transboundary Movement) Rules 2008. This Board is empowered to Amend consent order in connection with above references no. (2) the CCA order – AWH-[illegible] issued under the provisions of the various Environmental Act Rules which stand amended for the following	We are currently manufacturing the products as mentioned in the consent

Sr. No	Product	Existing (TPM)	Proposed (TPM)	Total Capacity (TPM)
1	Tetra Butyl Titanate	50	50	100
2	Tetra iso Propyl Titanate			
3	TPT (50) Blending Process Only			
4	Tetra 2 Ethylhexyl Titanate Blending Process Only			
5	Titanium Acetyle Acetonate Blending Process Only			
6	Ethyl Titanate			
7	Dimethyldi ethyl silane	0.00	15	15
8	Sodium/ Potassium Ethyl Sulphate	0.00	22	22
	By Product			
1	Ammonium Chloride	0.00	94	94
Total		50	181	231

Sr. No.	Conditions	Compliance
	SUBJECT TO SPECIFIC CONDITIONS:	
1.	Applicant shall have to follow all conditions mentioned in CTE-Amendment No. 5[illegible] dated: 22/01/2014.	Noted
2.	**CONDITIONS UNDER THE WATER ACT:**	
2.1	The quantity of the industrial discharge shall not exceed 1000 Lits/Day	The daily quantity of industrial wastewater discharge is within the consented limit (1 KLD)
2.2	The quantity of the domestic waste water (sewage) shall not exceed 500 lits/day	The daily quantity of domestic wastewater is within the consented limit (0.5 KLD)
2.2.1	The effluent treatment plant consisting of the primary units as proposed by you shall be installed (whichever is applicable)	We have installed ETP consisting primary treatment
2.3	**TRADE EFFLUENT**	
2.3.1	The effluent from the industrial unit shall conform to the GPCB river norms mentioned in column No. 2 below. The final discharge from ETP shall adhere to the prescribed standards by GPCB.	The effluent is treated in the in-house ETP and treated effluent from ETP is discharged after confirming the norms prescribe for the company
2.3.2	The applicant shall provide adequate effluent treatment system in order to achieve the quality of the treated effluent as per GPCB norms mentioned in column No. 3	The effluent is treated in the in-house ETP and treated effluent from ETP is discharged after confirming the norms prescribe for the company

Parameter	GPCB NORMS
pH	6.5 to 8.5
Temperature	40 °C
Color (Pt.Co.scale) in units	100 units
Suspended Solid	100 mg/l
Oil and Grease	10 mg/l
Phenolic Compound	1 mg/l
Ammoniacal Nitrogen	50 mg/l
BOD (5 days at 20°C)	30 mg/l
COD	250 mg/l
Chloride	600 mg/l
Sulphate	1000 mg/l
Total dissolved Solids	2100 mg/l
Bio-assay test	90% Survival of fish after 96 hour in 100% effluent

All efforts shall be made to remove colour & unpleasant odour as far as practicable.

2.3.3	The final treated effluent confirming to the above standards shall be evaporated into well designed evaporator provided or annealing furnace into	The effluent is treated in the in-house ETP and treated effluent from ETP is evaporated in evaporator provided on

Sr. No.	Conditions	Compliance
	SUBJECT TO SPECIFIC CONDITIONS:	
1.	Applicant shall have to follow all conditions mentioned in CTE-Amendment No. 5W4H dated: 22/01/2014.	Noted
2.	**CONDITIONS UNDER THE WATER ACT:**	
3.1	The quantity of the industrial discharge shall not exceed 1000 Lits/Day.	The daily quantity of industrial wastewater discharge is within the consented limit (1 KLD).
3.2	The quantity of the domestic waste water (sewage) shall not exceed 500 lits/day.	The daily quantity of domestic wastewater is within the consented limit (0.5 KLD).
3.2.1	The effluent treatment plant consisting of the primary units as proposed by you shall be installed (whichever is applicable).	We have installed ETP consisting primary treatment.
3.3	**TRADE EFFLUENT**	
3.3.1	The effluent from the industrial unit shall conform to the GPCB inlet norms mentioned in column No. 2 below. The final discharge from ETP shall adhere to the prescribed standards by GPCB.	The effluent is treated in the in-house ETP and treated effluent from ETP is discharged after confirming the norms prescribe for the company.
3.3.2	The applicant shall provide adequate effluent treatment system in order to achieve the quality of the treated effluent as per GPCB norms mentioned in column No. 2. **Parameter** / **GPCB NORMS** pH: 5.5 to 8.5 Temperature: 40°C Color (Pt.Co.scale) in units: 100 units Suspended Solid: 100 mg/l Oil and Grease: 10 mg/l Phenolic Compound: 1 mg/l Ammoniacal Nitrogen: 50 mg/l BOD (5 days at 20°C): 30 mg/l COD: 250 mg/l Chloride: 600 mg/l Sulphate: 1000 mg/l Total dissolved Solids: 2100 mg/l Bio-assay test: 90% Survival of fish after 96 hour in 100% effluent. All efforts shall be made to remove colour & unpleasant odour as far as practicable.	The effluent is treated in the in-house ETP and treated effluent from ETP is discharged after confirming the norms prescribe for the company.
3.3.3	The final treated effluent confirming to the above standards shall be evaporated into well designed evaporator provided on annealing furnace into quenching tank & by sparking system provided near annealing furnace to achieve zero discharge.	The effluent is treated in the in-house ETP and treated effluent from ETP is evaporated in evaporator provided on annealing furnace into quenching tank & by sparking system provided near annealing furnace after confirming the above standards.
3.4	Sewage shall be disposed of through septic tank/soak pit system or it shall be treated along with industrial effluent it shall be treated separately to confirm to the following standards and shall be disposed on land for gardening, plantation and irrigation. PARAMETER / PERMISSIBLE LIMIT BOD (5 days at 20°C) / Less than 20 mg/l Suspended Solid / Less than 30 mg/l Residual Chlorine / Less than 0.5 mg/l	Sewage is discharged into septic tank/ soak pit system.
4.	**CONDITIONS UNDER THE AIR ACT:**	
4.1	**The amendment as per amendment no. AWH – 95606, dated 29.06.2015 as below-** There shall be increase in existing fuel consumption as follows. Sr. No. / Fuel / Existing Quantity / Proposed Quantity / Total Quantity 1 / Natural Gas / 8.5CMH / 3.08 SCMH / 11.58 SCMH	Natural Gas is used as fuel in Thermopack boiler.
4.2	The applicant shall install & operate air pollution control system in order to achieve norms prescribed below.	Adequate stack height is provided to utility installation for better dispersion.
4.3	The flue gas emission through stack shall confirm to the following standards. Stack No. / Stack attached to / Stack height in meter / Pollution / Permissible Limit 1 / Thermopack (2 nos. in parallel) / 30 / Particulate matter, SOx, NOx / 150 mg/nm3, 100 ppm, 50 ppm 2 / D.G. Set 1000 KVA / 11 / Particulate matter, SOx, NOx / 150 mg/nm3, 100 ppm, 50 ppm	Adequate stack height is provided to utility installation for better dispersion and to achieve prescribed norms.
4.4	The process emission through various stacks/ vents of reactors process vessels shall be confined to the following standards. Stack No. / Stack attached to / Stack height in meter / APCM / Parameter / Permissible Limit 1 / Reactor / 11 / Water + Alkali Scrubber / HCl, NH3 / 20 mg/Nm3, 175 mg/Nm3	Water & Alkali Scrubber is provided as APCM to achieve prescribed norms.
4.5	The concentration of the following parameters in the ambient air within the premises of the industry and a distance of 10 meters from the source other than the stack/vents shall not exceed the following levels. PARAMETER / PERMISSIBLE LIMIT ANNUAL / PERMISSIBLE LIMIT 24 HRS. AVERAGE Particulate matter (PM10) / 60 Microgram/NM³ / 100 Microgram/NM³ Particulate matter (PM2.5) / 40 Microgram/NM³ / 60 Microgram/NM³ Oxides of Sulphur / 50 Microgram/NM³ / 80 Microgram/NM³ Oxides of Nitrogen / 40 Microgram/NM³ / 80 Microgram/NM³	The concentration of the PM10, PM2.5, Oxides of Sulphur & Oxides of Nitrogen in the ambient air is well within prescribed norms.
4.6	The applicant shall provide portholes, ladder platform etc. at chimney(s) for monitoring the air emissions and the same shall be open for inspection to/and for use of Board's staff. The chimney(s) vents attached to various sources of emission shall be designed by numbers such as S-1, S-2 etc. and these shall be painted/ displayed to facilitate identification.	Adequate stack monitoring facilities are provided. Stack monitoring is regularly carried out.
4.7	The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standards in respect of noise to less than 75 dB(A) during day time and 70 dB(A) during night time. Daytime is reckoned in between 6 p.m. and night time is reckoned between 10 p.m. and 6 a.m.	The company is taking adequate measures for control of noise levels from its own sources within the premises so as to maintain the air quality standards in respect of noise to less than 75dB(a) during day time and 70 dB(A) during night time.
5.	GENERAL CONDITIONS	
5.1	Any change in personnel, equipment or working conditions as mentioned in the consents form/order should immediately be intimated to this board.	The company will immediately intimate about any change in personnel, equipment or working conditions to the board.
5.2	Applicant shall also comply with the general conditions given in annexure I.	The company is also complying with the general conditions laid down by the board.
6.	**AUTHORISATION FOR THE MANAGEMENT AND HANDELING OF HAZARDOUS WASTES Form 2 (See rule 3 1 & 6 (6))**	
6.1	**The amendment as per amendment no. AWH – 95606, dated 29.06.2015 as below-** Number of authorization No. AWH-72255 Date of issue 31/07/2015	Noted
6.2	**The amendment as per amendment no. AWH – 95606, dated 29.06.2015 as below-** **M/s. Om Titanates** is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated at **PLOT NO:C-1-B-2806, Sarigam-396155 TAL: Umbergaon DIST: Valsad.** Sr. No. / Waste / Total Quantity (after expansion) / Schedule-1 / Facility 1 / Used Oil / 0.01 KL/Year / 5.1 / Consolidate storage, decontamination, transportation disposal by selling to GPCB approved registered Re finers 2 / Discarded Containers/ Barrels/ Liners / 18000 Nos/Year / 33.3 / Transportation & disposal by selling to authorised Decontamination Facility at sarigam.	The company is regularly disposing its waste like used oil is disposed by selling to registered reprocessors and Discarded Containers is disposed by decontamination/reuse & returned selling to authorized Decontamination Facility in sarigam.
6.3	**The amendment as per amendment no. AWH – 95606, dated 29.06.2015 as below-** The authorisation is granted to operate a facility for collection, storage within the factory premises transportation.	Noted
6.4	The authorization shall be valid up to 15/12/2019.	Noted
6.5	The authorization is subject to the conditions stated below and such other conditions as may be specified in the rules from time to time under the Environment (Protection) Act 1986.	We agree with the terms & conditions imposed herein.

Sr. No.	Conditions	Compliance
6.6	TERMS AND CONDITION OF AUTHORISATION	
a)	The applicant shall comply with the provisions of the Environment (Protection) Act, 1986 and the rules made there under	We do comply with the provisions of the Environment (Protection) Act 1986 and rules made there under
b)	The authorization shall be produced for inspection at the request of an officer authorized by the Gujarat Pollution Control Board	We agree with the terms & conditions imposed herein
c)	Any persons authorized shall not rent, lend, sell, and transfer or otherwise transport the hazardous waste without obtaining prior permission of the Gujarat Pollution Control Board	We do heed the condition
d)	Any authorized change in personnel, equipment or working condition as mentioned in the authorization order by the persons authorized shall constitute the breach of the authorization	We agree with the terms & conditions imposed herein
e)	It is the duty of the authorized person to take prior permission of the Gujarat Pollution Control Board to close down the facility	We will inform and seek the permission from the GPCB to close down the facility
f)	An application for the renewal of an authorization shall be made as laid down in rule 7	We will apply for the renewal of an authorization as laid down in rule 7
g)	Office shall submit annual report within 15 days & subsequent by 30th June every year	We are regularly submitting annual report by 30th June every year
6.7	Industry shall have to manage waste oil, discarded containers etc. as per Amended Rules-2003 and shall apply authorization for all applicable waste as per Amended Rules - 2003	Waste oil is disposed by selling to registered reprocessors and Discarded Containers by decontamination/reuse & returned back to supplier and to authorised recyclers/re-refiner, request for pending Disposal of M/s Alka chemicals Pvt Ltd Vadodara
6.8	In addition to above terms & conditions industry shall also comply following directives issued by the Supreme Court of India dated 14.10.2005	We agree with the terms & conditions imposed herein
a)	Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Court's order in W.P. No. 657 of 1995 dated 14th October 2003	We display the relevant information with regard to hazardous waste as indicated in the Hon supreme Court's order in W.P.No.657 of 1995 dated 14th October 2005
b)	Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including wastewater and air emissions and solid hazardous waste, generated within the factory	We display the relevant information outside the company's main gate

ii.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	We assure that no further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.
iii.	The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one stations is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated..	Ambient air quality monitoring stations are identified within the company premises as per the State Pollution Control Board (SPCB) guidelines. AAQM is also carried out by GPCB & VIA in GIDC estate. Please refer **Annexure-3** for Ambient Air Quality monitoring quarterly reports. Ambient Air monitoring is done by M/s Precitech Laboratories Pvt. Ltd. Its NABL accreditation certificate no. is TC-5049, Issue date 19/09/2019 & validity until 18/09/2021.

Ambient Air Monitoring Summary

No.	Parameter	Unit	Limit	Near Security Gate		Backside of the Plant	
				MIN.	MAX.	MIN.	MAX.
1	**PM10**	µg/m³	100	89	91	83	88
2	**PM2.5**	µg/m³	60	51	53	42	49
3	**SO2**	µg/m³	80	23	24	25	26
4	**NOx**	µg/m³	80	26	28	28	29
5	**NH3**	µg/m³	850	7	8	9	11
6	**HC**	µg/m³	200	BDL	BDL	BDL	BDL
7	**HCl**	ppm	--	BDL	BDL	BDL	BDL

BDL = Below Detection Limit
Monitoring Date: 19/10/2020, 18/01/2021

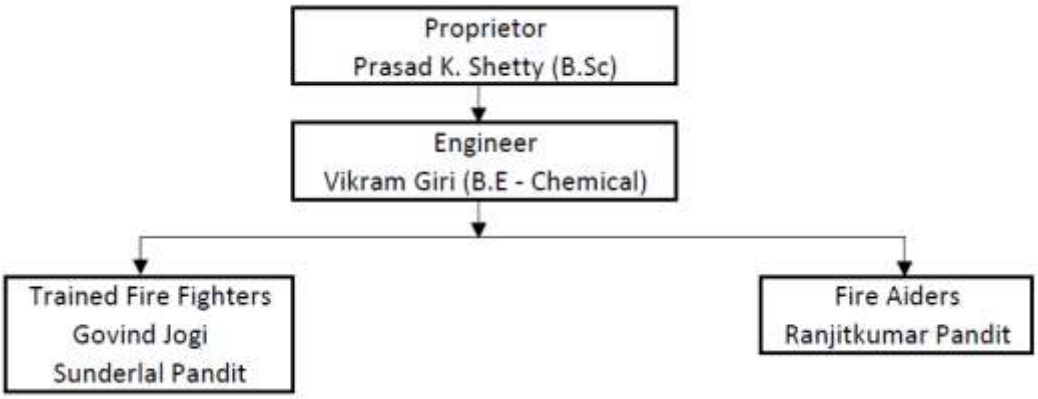
iv.	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75dBA (daytime) and 70 dBA (nighttime).	Necessary mitigation measures have been implemented e.g. compressors are provided with silencers and kept in a closed building. The ambient noise levels confirm to the CPCB standards. The noise monitoring report is attached as **Annexure-5**. Noise monitoring is done by M/s Precitech Laboratories Pvt. Ltd. Its NABL accreditation certificate no. is TC-5049, Issue date 19/09/2019 & validity until 18/09/2021.

Noise Monitoring Summary

No.	Parameter	Day Time (75 dB(A))		Night Time (70 dB(A))	
		MIN.	MAX.	MIN.	MAX.
1	Nr. Security Gate	66.2	67.2	54.2	55.1
2	Nr. Cooling Tower	70.2	71.5	63.4	64.2
3	Administration office	56.4	57.3	40.5	41.7
4	Nr. Boiler House	71.8	72.6	66.9	67.6
5	Plant Center	72.5	73.1	67.4	68.1
6	East Side	66.2	68.9	60.3	61.2
7	West Side	70.8	71.4	60.5	61.2
8	South Side	71.3	72.3	60.8	61.4
9	North Side	69.4	70.8	58.7	59.7
Monitoring Dates: 19/10/2020, 18/01/2021					

v.	The Company shall harvest rain water from the rooftops of the buildings and storm water drain store charge the ground water and use the same water for the process activities of the project to conserve fresh water.	Since, borewell is not permitted at site by the GIDC, no recharging system is provided. However, we have made provision to collect rainwater from roof top of our unit in water collection tank. Photographs of rainwater collection system is given below.
vi.	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	• Our unit is small scale unit with less man-power. 3 no. of employees underwent occupational health surveillance and latest occupational health surveillance summary given below. • In proposed expansion we will carry out pre-employment medical examination (PME). • Summary of the employees health surveillance is given below. • Safety training certificate of the employees

		is given below.
	 OM TITANATES SUMMARY OF MEDICAL CHECK UP- Nov 2020 Dr. AJAY S. PAWAR M.B.B.S., A.F.I.H.,D.O.M.,D.I.H.M. Reg. No.- G-45766 Industrial Health Physician	
	 Ph.: (0260) 3292759 Mob.: 9377481647 JAI FIRE & SAFETY Supplier of : Fire Extinguishers & Refilling Contractors and Entirerange of Safety Equipments Shop No. 09, Suyog Complex, Road No. 7, G.I.D.C., Sarigam,Dist. Valsad, Gujarat. Ref. No. Date : CERTIFICATE This is to certify that 1) Mr. Vikram Giri 2) Mr. Ranjeet Kumar Pandit 3) Mr. Govind Jogi 4) Mr. Sundarlal Pandit Has participated in training programme for fire fighting conducted on 20/08/2020 from 11.00 A.M to 12.00 P.M for M/S OM TITANATES, Plot No. C18/2805 & 2806, Chemical Zone, GIDC, Sarigam - 396155 Gujarat. For JAI FIRE & SAFETY Proprietor Date: 20.08.2020 Place: SARIGAM (Note: This certificate is valid up to one year only)	
vii.	Usage of Personnel Protection Equipments (PPEs) by all employees/ workers shall be ensured.	The following PPE's are provided to the employees/workers: • Safety Helmet • Safety Shoes • Hand gloves (cotton, leather, rubber) • Safety Goggles
viii.	The company shall also comply with all the environmental protection measures and	The recommendations made in the EIA/EMP were included in the design and

	safe guards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing relating to the project shall be implemented.	implemented for all plants which have been established. These include adequate stack height, zero liquid discharge etc. All mitigation as per the risk assessment report are implemented. Public hearing was not required since the project in notified estate.
ix.	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villages and administration.	Complied with the condition.
x.	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	The company is undertaking eco-developmental and community welfare measures as a part of CSR activities.
xi.	A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be setup to carry out the Environmental Management and Monitoring functions.	Since, ours is an SSI unit, the Site Engineer, who is a Chemical Engineer with an experience of 10yrs along with EHS management and aware of the EHS requirements is handling the responsibility for the EHS Cell.
		
xii.	As proposed, the company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.	Funds earmarked towards capital cost was Rs. 1.40 Lakh and at present our recurring cost is around Rs. 1.70 Lakh for the year of 2020-21 implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions.
xiii.	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban local Body and the local NGO, if any, from who suggestions/ representations, if any, were received While processing the proposal.	A copy of the clearance letter sent to the Sarigam gram panchayat. Copy of the same is given below.

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<tr><td>xiv</td><td>The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the Gujarat Pollution Control Board. A copy of Environmental Clearance and six-monthly compliance status report shall be posted on the website of the company.</td><td>We are regularly submitting six monthly EC compliance report to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the Gujarat Pollution Control Board.
<table>
<tr><th>Year</th><th>Report Month</th><th>Submission Date</th></tr>
<tr><td>2015</td><td>June-15 to Sept-15</td><td>17-02-16</td></tr>
<tr><td>2016</td><td>Oct-15 to March-16</td><td>10-08-16</td></tr>
<tr><td>2016</td><td>April-16 to Sept-16</td><td>29-12-16</td></tr>
<tr><td>2017</td><td>Oct-16 to March-17</td><td>14-07-17</td></tr>
<tr><td>2017</td><td>April-17 to Sept-17</td><td>27-12-17</td></tr>
<tr><td>2018</td><td>Oct-17 to March-18</td><td>19-07-18</td></tr>
<tr><td>2018</td><td>April-18 to Sept-18</td><td>21-01-19</td></tr>
<tr><td>2019</td><td>Oct-18 to March-19</td><td>03-06-19</td></tr>
<tr><td>2019</td><td>April-19 to Sept-19</td><td>25-06-20</td></tr>
<tr><td>2020</td><td>Oct-19 to March-20</td><td>24-07-20</td></tr>
<tr><td>2020</td><td>April-20 to Sept-20</td><td>11-02-21</td></tr>
</table></td></tr>
<tr><td>xv</td><td>The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.</td><td>The environmental statement in Form-V is being submitted to the Regional Office of MoEF and GPCB. The Form V along with the status of compliance will be uploaded on company’s website. Submission letter for Form IV & V is given below.</td></tr>
</table>

		 om TITANATES Date: May 20, 2021 To, Regional Office, Gujarat Pollution Control Board, Mandanwad, Sargam Taluka: Umergaon District: Valsad – 396155 Kind Attn: Mr. A. G. Patel Subject: Submission of Form 4 and Form V Respected Sir, In view of the above subject matter please find attached herewith Form 4 (Annual Returns) and Form V (Environmental Audit Statement) for the year 2020-2021 for your reference. Kindly acknowledge receipt of the same. Thanking you Yours Faithfully, For, M/s. Om Titanates, (Authorised Signatory)
xvi	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCS/ Committee and may also be seen at Website of the Ministry at www.moef.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.	We have already informed to the public through advertisement given in the local newspaper (Sandesh and Gujarat Samachar) dated 11/07/2015 that we have accorded environmental clearance by the Ministry and copies of clearance letter are available with the state Pollutions Control Board and may also be seen at website of the Ministry of Environmental and Forests at website of the Ministry of Environmental and Forests at www.moef.nic.in. The copy of advertisement is given below.
	 ગુજરાત સમાચાર PUBLIC NOTICE **Subject :** Environmental Clearance for Expansion of Synthetic Organic Chemicals Unit. This is to inform the public that **M/s. Om Titanates** Plot No. C-1/B-2805, 2806, GIDC Estate, Sarigam, Dist. Valsad, Gujarat - 396 155. Has Obtained Environmental Clearance from The Ministry of Environment and Forest, New Delhi, vide its Letter No. **J-11011/186/2012-IA. II (I)** **Dated 16th May, 2015** for Expansion of Synthetic Organic Chemicals Unit Under The Provision Of The Eia Notification Dated September 14, 2006. Copies Of The Clearance Letter are available at the office of The State Pollution Control Board & may also be seen at website of the ministry at **www.envfor.nic.in**	

	 સંદેશ સુરત, અમદાવાદ, વડોદરા, રાજકોટ, ભાવનગર, ભુજ અને મુંબઈથી પ્રસિદ્ધ થતું દૈનિક SATURDAY 11 07 2015 વિ.સં. ૨૦૭૧, અષિઢ અધિક વદ ૧૦ પાના : ૧૮+૮+૨ જાહેર સુચના વિષય : સિન્થેટિક કાર્બનિક રસાયણોના ઉત્પાદનની વૃદ્ધિ વધારવા અંગેની પર્યાવરણીય મંજુરી M/s. Om Titanates J-11011/186/2012-IA II (I) www.envfor.nic.in	
xvii	The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	The project was started at 20/06/2015. We have obtained CC&A for the existing project. Please refer **Annexure-1** for the CC&A. The same has been informed to Regional Office through 6 monthly compliance reports.
8.0	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	--
9.0	The Ministry reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.	--
10.0	The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention &. Control of Water Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and the Public Liability Insurance Act, 1991 along with their amendment sand rules.	--
11.0	Environment Clearance is issued to M/s OM Titanates for expansion of synthetic organic chemical manufacturing unit at Plot Nos. C-1- B/280S&2806, GIDC, Sarigam, District Valsad, Gujarat.	--

Annexure

Annexure- 1: CC&A Copy

GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN
Sector-10-A, Gandhinagar-382 021.
Website : www.gpcb.gov.in

GPCB

By R.P.A.D.

In exercise of the power conferred under section-25of the Water (Prevention and Control of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution) Act-1981 and Authorization under rule 3(c) & 5(5) of the Hazardous Waste (Management and Handling and Trans boundary Movement) Rules '2008 framed under the E (P) Act-1986.This Board is empowered to grant CC&A.

And whereas Board has received consolidated consent application vide **No. 88632, Dated:16/12/2014** for the consolidated consent and authorization **(CC & A- Renewal)** of this Board under the provisions / rules of the aforesaid Acts. Consent & Authorization is hereby granted as under.

CONSENT AND AUTHORISATION:
(Under the provisions / rules of the aforesaid environmental acts)

To,
M/s. OM TITANATES (ID: 31963),
PLOT NO: C-1-B-2805,
GIDC ESTATE- SARIGAM- 396155,
TAL: UMBERGAON,
DIST: SARIGAM.

1. **Consent Order No. : AWH-68681. Date of issue: 02/03/2015.**

2. The consent shall be valid up to **15/12/2019** for the use of outlet for the discharge of treated effluent & air emission and to operate industrial plant for manufacture of the following items / products:

Sr. No.	Product		Capacity
	Organic Titanates		
	GROUP- A		
1.	Tetra Butyl Titanate	----	50.0 MT/Month
2.	Tetra iso Propyl Titanate		
3.	Ethyl Titanate		
	GROUP- B		
1.	Tpt 20B	Blending Process Only	
2.	Tetra 2- Ethylhexyl Titanate		
3.	Titanium Acetyl Acetonate		
		Total	50.0 MT/Month

Either any one product out of six product with total quantity not exceeding 50 MT/Month or cumulative quantity of six products not exceeding 5 MT/Month shall be manufactured.

3. **CONDITIONS UNDER THE WATER ACT:**

3.1 The quantity of the industrial discharge shall not exceed **1000 Lits/Day.**

3.2 The quantity of the domestic waste water (sewage) shall not exceed **500 lits/day.**

3.2.1 The effluent treatment plant consisting of the primary units as proposed by you shall be installed (whichever is applicable)

3.3 TRADE EFFLUENT

3.3.1 The effluent from the industrial unit shall conform to the GPCB inlet norms mentioned in column No.2 below. The final discharge from ETP shall adhere to the prescribed standards by GPCB.

3.3.2 The applicant shall provide adequate effluent treatment system in order to achieve the quality of the treated effluent as per GPCB norms mentioned in column No.2.

PARAMETERS	GPCB NORMS
pH	6.5 TO 8.5
Temperature	40° C
Color (pt.co.scale) in units	100 units
Suspended Solids	100 mg/l
Oil and Grease	10 mg/l
Phenolic Compounds	1 mg/l
Ammonical Nitrogen	50 mg/l
BOD (5 days at 20°C)	30 mg/l
COD	250 mg/l
Chlorides	600 mg/l
Sulphates	1000 mg/l

outward no. 206341, 05/03/2015

Clean Gujarat Green Gujarat
ISO - 9001 - 2008 & ISO - 14001 - 2004 Certified Organisation

Total dissolved Solids	2100 mg/l
Bio-assay test	90% Survival of fish after 96 hour in 100% effluent.

- All efforts shall be made to remove colour & unpleasant odour as far as practicable.

3.3.3 The final treated effluent confirming to the above standards shall be evaporated into well designed evaporator provided on annealing furnace into quenching tank & by sparkling system provided near annealing furnace to achieve zero discharge.

3.4 Sewage shall be disposed of through septic tank/soak pit system or it shall be treated along with industrial effluent or it shall be treated separately to conform to the following standards and shall be utilized on land for gardening, plantation and irrigation.

PARAMETER	PERMISSIBLE LIMIT
BOD (5 days at 20o C)	Less than 20 mg/l
Suspended Solids	Less than 30 mg/l
Residual Chlorine	Minimum 0.5 ppm

4 CONDITIONS UNDER THE AIR ACT:

4.1 The following shall be used as fuel in the Thermopack Boiler (2 Lakh K.cal/Hr) & D.G.Set (65 KVA) respectively.

Sr.No.	Fuel	Quantity
1.	Furnace Oil	180 Lit/Day
2.	Diesel	4.1 Lit/Hr

4.2 The applicant shall install & operate air pollution control system in order to achieve norms prescribed below.

4.3 The flue gas emission through stack shall conform to the following standards:

Stack no.	Stack attached to	Stack height in Meter	Parameter	Permissible Limit
1.	Thermopack (2 Lakh K.cal/Hr)	30	Particulate matter SO_2 NO_x	150 mg/NM^3 100 ppm 50 ppm
3.	D.G. Set 1000 KVA	11	Particulate matter SO_2 NO_x	150 mg/NM^3 100 ppm 50 ppm

4.4 The process emission through various stacks/ vents of reactors, process vessel shall be confirmed to the following standards.

Stack No.	Stack attached to	Stack height in meter	APCM	Parameter	Permissible limit
1.	Reactor	11	Water + Alkali Scrubber	HCL NH3	20 mg/NM^3 175 mg/NM^3

4.5 The concentration of the following parameters in the ambient air within the premises of the industry and a distance of 10 meters from the source) other than the stack/vent) shall not exceed the following levels.

PARAMETER	PERMISSIBLE LIMIT ANNUAL	PERMISSIBLE LIMIT 24 HRS. AVERAGE
Particulate matter-$_{10}$[PM10]	60 Microgram /NM^3	100 Microgram /NM^3
Particulate matter-$_{2.5}$[PM2.5]	40 Microgram /NM^3	60 Microgram /NM^3
Oxides of Sulphur	50 Microgram /NM^3	80 Microgram /NM^3
Oxides of Nitrogen	40 Microgram /NM^3	80 Microgram /NM^3

4.6 The applicant shall provide portholes, ladder, platform etc at chimney(s) for monitoring the air emissions and the same shall be open for inspection to/and for use of Board's staff. The chimney(s) vents attached to various sources of emission shall be designed by numbers such as S-1, S-2, etc. and these shall be painted/ displayed to facilitate identification.

4.7 The Industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standards in respect of noise to less than 75 dB(A) during day time and 70 dB(A) during night time. Daytime is reckoned in between 6 a.m. and 10 p.m. and nighttime is reckoned between 10 p.m. and 6 a.m.

5 GENERAL CONDITIONS:

5.1 Any change in personnel, equipment or working conditions as mentioned in the consents form/order should immediately be intimated to this Board.

Outward No.: 306341 05/03/2015

5.2 Applicant shall also comply with the general conditions given in annexure I

6. **AUTHORISATION FOR THE MANAGEMENT & HANDLING OF HAZARDOUS WASTES Form-2 (See rule 3 I & 5 (5))**

6.1 Number of authorization: **AWH-68681. Date of issue: 02/03/2015.**

6.2 **M/s. OM TITANATES** is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated at **PLOT NO: C-1-B-2805, GIDC ESTATE- SARIGAM- 396155, TAL: UMBERGAON, DIST: SARIGAM.**

Sr. No	Waste	Quantity	Schedule-I Process No.	Facility
1.	Ammonium Chloride	552 MT/Year	II - C- I	Collection, Storage, Transportation shall be sold to actual users M/s. Tirupati Chemicals GIDC Sarigam through manifest system only.
2.	Used Spent Oil	0.005 MT/Year	5.1	Collection, Storage, Transportation, Disposal by selling to registered reprocessors
3.	Discarded Container/ Bags etc	10800 Nos/Yr 3400 Nos. /Year	33.3	Collection, Storage, Decontamination/reuse & returned back to supplier/ sold to authorized reconditioners/ reused for packing, disposal of M/s. Alka chemical Pvt. Ltd.Nadiad.

6.3 The authorization is granted to operate a facility for Collection, Storage within factory premises transportation and ultimate disposal of Hazardous wastes at TSDF developed by the Vapi waste & Effluent Management Co. Ltd- Vapi.

6.4 The authorization shall be valid up to **15/12/2019.**

6.5 The authorization is subject to the conditions stated below and such other conditions as may be specified in the rules from time to time under the Environment (Protection) Act-1986.

6.6 **TERMS AND CONDITIONS OF AUTHORISATION**

a) The applicant shall comply with the provisions of the Environment (Protection) Act – 1986 and the rules made there under.
b) The authorization shall be produced for inspection at the request of an officer authorized by the Gujarat Pollution Control Board.
c) The persons authorized shall not rent, lend, sell, and transfer of otherwise transport the hazardous wastes without obtaining prior permission of the Gujarat Pollution Control Board.
d) Any unauthorized change in personnel, equipment or working conditions as mentioned in the authorization order by the persons authorized shall constitute a breach of this authorization.
e) It is the duty of the authorized person to take prior permission of the Gujarat Pollution Control Board to close down the facility.
f) An application for the renewal of an authorization shall be made as laid down in rule 7.
g) Industry shall submit annual report within 15 days and subsequent by 30th June every year.

6.7 Industry shall have to manage waste oil, discarded containers etc as per Amended Rules-2003 and shall apply Authorization for all applicable waste as per Amended Rules- 2003.

6.8 In addition to above terms and conditions Industry shall also comply following directives issued by the Supreme Court of India dated.14.10.2003.

a) Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Court's order in W.P. No.657 of 1995 dated 14th October 2003.
b) Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including wastewater and air emissions and solid hazardous wastes generated within the factory premises.

For and on behalf of
Gujarat Pollution Control Board

(T. B. SHAH)
Environmental Engineer

NO: GPCB/CCA-SRG-182/ID:31963/ **Date:**

Issued to:
M/s. OM TITANATES (ID: 31963),
PLOT NO: C-1-B-2805,
GIDC ESTATE- SARIGAM- 396155,
TAL: UMBERGAON,
DIST: SARIGAM.

Outward No: 30041 05/03/2015

Clean Gujarat Green Gujarat
ISO - 9001 - 2008 & ISO - 14001 - 2004 Certified Organisation

CC&A Amendment

GPCB

GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN
Sector-10-A, Gandhinagar-382 021.
Website : www.gpcb.gov.in

CCA-Amendment
(No. AWH-72255)

BY R.P.A.D.

NO: GPCB/CCA-SRG- 182(2)/ID_31963/ **Date: - __/__/2015**
Amendment to Consolidated **Consent Order No – AWH-68681**
To,
M/s. Om Titanates
PLOT NO:C-1-B-2805,
Sarigam - 396155
TAL : Umbergaon DIST : Valsad

SUB: - Consolidated consent and Authorization (CC & A) under various Environmental Act/Rules.
REF: - (1) Your CCA (Amendment) application No- 95506 dated: 29/05/2015
(2) Previously issued CCA order No: - AWH-68681, Dated- 05/03/2015 under various Environmental Acts/Rules.

In exercise of the power conferred under section-25 of the water (Prevention of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution) 1981 and Hazardous waste (Management, Handling & Transboundary Movement) Rules 2008. This Board is empowered to Amend consent order in connection with above references no. (2) the CCA order – **AWH-68681** issued under the provisions of the various Environmental Act/Rules, which stand amended for the following :

Sr. No.	Product	Existing (MT/Month)	Proposed (MT/Month)	Total Quantity (MT/Month)
1.	Tetra Butyl Titanate	50	50	100
2.	Tetra Iso Propyl Titanate			
3.	TPT 20B (Blending Process Only)			
4.	Tetra 2-Ethylhexyl Titanate (Blending Process Only)			
5.	Titanium Acetyl Acetonate (Blending Process Only)			
6.	Ethyl Titanate			
7.	Di – isopropyl ethyl amine	0.00	15	15
8.	Sodium/ Potassium Ethyl Sulphate	0.00	22	22
	By Product			
1.	Ammonium Chloride	0.00	94	94
Total		**50**	**181**	**231**

Outward No:323181,03/08/2015

Subject to Specific Conditions:-

1. **Applicant shall have to follow all conditions mentioned in CTE-Amendment No:59981 dated:22/01/2014.**

Clean Gujarat Green Gujarat
ISO - 9001 - 2008 & ISO - 14001 - 2004 Certified Organisation

3. **CONDITIONS UNDER THE WATER ACT:**

3.1 **All other conditions under Water Act 1974 of CCA NO: - AWH-68681, Dated- 02/03/2015 valid up to Dated-15.12.2019 and its subsequent amendments shall remain unchanged.**

4. **CONDITIONS UNDER THE AIR ACT:**

4.1 There shall be increase in existing fuel consumption as follows:

Sr. No.	Fuel	Existing Quantity	Proposed Quantity	Total Quantity
1	Natural Gas	6 SCM/Hr	5.88 SCM/Hr	11.88 SCM/Hr

4.2 **All other conditions under Air Act 1981 of CCA NO: - AWH-68681, Dated- 02/03/2015 valid up to Dated-15.12.2019 and its subsequent amendments shall remain unchanged.**

5. **AUTHORISATION FOR THE MANAGEMENT & HANDLING OF HAZARDOUS WASTES Form-2 (See rule 3 (c) & 5 (5))**

5.1 Number of authorization No: **AWH-72255** **Date of issue: 31/07/2015**

5.1.1. **M/s. Om Titanates** is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated at. **PLOT NO:C-1-B-2805, Sarigam – 396155 TAL : Umbergaon DIST : Valsad**

Sr. No.	Waste	Total Quantity (after expansion)	Schedule-I	Facility
1	Used Oil	0.01 KL/Year	5.1	collection, storage, decontamination transportation disposal by selling to GPCB approved registered Re-refiners
2	Discarded Containers/ Barrels/Liners	18909 Nos/Year	33.3	Transportation and disposal by selling to authorized Decontamination Facility in sarigam

5.1.2 The authorization is granted to operate a facility for collection, storage within the factory premises transporta

6. **All other conditions of the CCA Order No. CCA NO: - AWH-68681, Dated- 02/03/2015 valid up to Dated- 15/12/2019 shall remain unchanged.**

FOR AND ON BEHALF OF
GUJARAT POLLUTION CONTROL BOARD

3/8/2015 **(Y.A. TAI)**
ENVIRONMENTAL ENGINEER

Outward No: 923181, 03/08/2015

Annexure 2: Stack Monitoring Report

precitech Laboratories PVT. LTD.

TEST CERTIFICATE

Our Ref. No.	**PL/SA/20201019066**	**Issue Date**	October 26, 2020
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Process Stack Monitoring		
Sample Collection Date	19/10/2020	**Sample Receipt Date**	19/10/2020
Analysis Start Date	20/10/2020	**Analysis Completion Date**	21/10/2020
Part B: SAMPLING DETAILS			
Sample Collection	Collected By us		
Sampling Location	Water Scrubber		
Sampling Procedure	IS 11255 (Part-3)-2008		
Sampling Instrument	PL/AMS/001-VSS 01		
Stack Height (m)	11	**Stack Diameter (m)**	0.100
Flue Gas Temperature (°C)	35	**Exit Gas Velocity (m/sec)**	2.2
Fuel used	NM		
Any Other Information	NM		

Part C: TEST RESULTS

Sr. No.	Test Parameters	Unit	Results	Test Method	Specification/ Limits
1	Ammonia(as NH_3)	mg/Nm^3	**38**	IS:11255(Part6)1999 (RA2014)	175
*2	Hydrogen Chloride (as HCl)	mg/Nm^3	**23**	USEPA(1997) Method26A	50

Part D: REMARKS: --

Part E: ABBREVIATIONS: - -- Parameter is not covered under NABL Scope, NM-Not Mentioned.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

Recognitions
NABL (ISO/IEC 17025: 2017) Accredited Testing Lab and ISO 45001:2018 Certified Lab
Recognized Env. Lab. under EPA-1986 by Ministry of Environment & Forest
Recognized Env. Auditors with Gujarat Pollution Control Board

Registered & Head Office :
1st Floor, Bhanujyot Complex, Plot No.C5/27,
B/h. Panchratna Complex, Nr. GIDC Char Rasta, Vapi - 396 195
Ph. : (0260) 2975850, 2970850, 2425542, 2420995, 2424901

precitech Laboratories PVT. LTD.

TEST CERTIFICATE

Our Ref. No.	**PL/SA/20201019067**	**Issue Date**	October 26, 2020
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Stack Emission Monitoring		
Sample Collection Date	19/10/2020	**Sample Receipt Date**	19/10/2020
Analysis Start Date	20/10/2020	**Analysis Completion Date**	22/10/2020
Part B: SAMPLING DETAILS			
Sample Collection	Collected By us		
Sampling Location	Thermopac		
Sampling Procedure	IS 11255 (Part-3)-2008		
Sampling Instrument	PL/AMS/001-VSS 01		
Stack Height (m)	11	**Stack Diameter (m)**	0.632
Flue Gas Temperature (°C)	132	**Exit Gas Velocity (m/sec)**	10.1
Fuel used	Natural Gas	**Gas Discharge (m^3/Hr.)**	11398.86
Any Other Information	NM		

Part C: TEST RESULTS

Sr. No.	Test Parameters	Unit	Results	Test Method	Specification/ Limits
1.	Particulate Matter (PM)	mg/Nm^3	**31**	IS:11255 (Part 1)-1985 (RA2014)	150
2.	Sulphur Dioxide (SO_2)	ppm	**BDL**	IS:11255 (Part 2)-1985 (RA2014)	100
3.	Oxides of Nitrogen (NOx)	ppm	**10**	IS:11255 (Part 7)-2005 (RA2017)	50

Part D: REMARKS:--

Part E: ABBREVIATIONS: NM-Not Mentioned, BDL-Below Detection Limit.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

Recognitions
NABL (ISO/IEC 17025: 2017) Accredited Testing Lab and ISO 45001:2018 Certified Lab
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1st Floor, Bhanujyot Complex, Plot No.C5/27,
B/h. Panchratna Complex, Nr. GIDC Char Rasta, Vapi - 396 195
Ph. : (0260) 2975850, 2970850, 2425542, 2420995, 2424901

precitech Laboratories PVT. LTD.

TEST CERTIFICATE

Our Ref. No.	**PL/SA/20210118075**	**Issue Date**	January 27, 2021
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Process Stack Monitoring		
Sample Collection Date	18/01/2021	**Sample Receipt Date**	18/01/2021
Analysis Start Date	19/01/2021	**Analysis Completion Date**	20/01/2021
Part B: SAMPLING DETAILS			
Sample Collection	Collected By us		
Sampling Location	Water Scrubber		
Sampling Procedure	IS 11255 (Part-3)-2008		
Sampling Instrument	PL/AMS/001-VSS 01		
Stack Height (m)	11	**Stack Diameter (m)**	0.100
Flue Gas Temperature (°C)	33	**Exit Gas Velocity (m/sec)**	2.1
Fuel used	NM		
Any Other Information	NM		

Part C: TEST RESULTS

Sr. No.	Test Parameters	Unit	Results	Test Method	Specification/ Limits
1	Ammonia(as NH_3)	mg/Nm^3	**34**	IS:11255(Part6)1999 (RA2014)	175
*2	Hydrogen Chloride (as HCl)	mg/Nm^3	**21**	USEPA(1997) Method26A	50

Part D: REMARKS: --

Part E: ABBREVIATIONS: - -- Parameter is not covered under NABL Scope, NM-Not Mentioned.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

QF No. PL/QF/7.8/03

Recognitions
NABL (ISO/IEC 17025: 2017) Accredited Testing Lab and ISO 45001:2018 Certified Lab
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1st Floor, Bhanujyot Complex, Plot No.C5/27,
B/h. Panchratna Complex, Nr. GIDC Char Rasta, Vapi - 396 195
Ph. : (0260) 2975850, 2970850, 2425542, 2420995, 2424991

precitech Laboratories PVT. LTD.

TEST CERTIFICATE

Our Ref. No.	**PL/SA/20210118076**	**Issue Date**	January 27, 2021
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Stack Emission Monitoring		
Sample Collection Date	18/01/2021	**Sample Receipt Date**	18/01/2021
Analysis Start Date	19/01/2021	**Analysis Completion Date**	21/01/2021
Part B: SAMPLING DETAILS			
Sample Collection	Collected By us		
Sampling Location	Thermopac		
Sampling Procedure	IS 11255 (Part-3)-2008		
Sampling Instrument	PL/AMS/001-VSS 01		
Stack Height (m)	11	**Stack Diameter (m)**	0.632
Flue Gas Temperature (°C)	130	**Exit Gas Velocity (m/sec)**	9.4
Fuel used	Natural Gas	**Gas Discharge (m^3/Hr.)**	10608.84
Any Other Information	NM		

Part C: TEST RESULTS

Sr. No.	Test Parameters	Unit	Results	Test Method	Specification/ Limits
1.	Particulate Matter (PM)	mg/Nm^3	**29**	IS:11255 (Part 1)-1985 (RA2014)	150
2.	Sulphur Dioxide (SO_2)	ppm	**BDL**	IS:11255 (Part 2)-1985 (RA2014)	100
3.	Oxides of Nitrogen (NOx)	ppm	**8**	IS:11255 (Part 7)-2005 (RA2017)	50

Part D: REMARKS:--

Part E: ABBREVIATIONS: NM-Not Mentioned, BDL-Below Detection Limit.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

QF No. PL/QF/7.8/03

Recognitions
NABL (ISO/IEC 17025: 2017) Accredited Testing Lab and ISO 45001:2018 Certified Lab
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Annexure 3: Ambient Air Monitoring Report

precitech Laboratories PVT. LTD.

TEST CERTIFICATE

Our Ref. No.	**PL/AA/20201019070**	**Issue Date**	October 26, 2020
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Ambient Air Monitoring		
Sample Collection Date	19/10/2020	**Sample Receipt Date**	20/10/2020
Analysis Start Date	21/10/2020	**Analysis Completion Date**	24/10/2020
Part B: SAMPLING DETAILS			
Sample Collection	Collected By us		
Sampling Location	Outside Production Area Nr. Security Gate		
Sampling Procedure	IS 5182 (Part-5)-1975(RA-2014)		
Sampling Instrument	RDS APM 460 BL & FPS APM 550		
Sampling Duration	24 Hrs.	**Weather Condition**	Clear
Ambient Temperature (°C)	31	**Humidity (%)**	66
Any Other Information	NM		

Part C: TEST RESULTS

Sr. No.	Test Parameters	Unit	Results	Test Method	Specification/ Limits
1.	Particulate Matter (PM_{10})	$\mu g/m^3$	**89**	IS: 5182 (Part 23)-2006 (RA2017)	100
2.	Particulate Matter ($PM_{2.5}$)	$\mu g/m^3$	**51**	SOP No. 120 Issue No.03 Issue Date March 2018: 2018	60
3.	Sulphur Dioxide (as SO2)	$\mu g/m^3$	**23**	IS: 5182 (Part 2)-2001 (RA2017)	80
4.	Oxides of Nitrogen (as NOx)	$\mu g/m^3$	**26**	IS: 5182 (Part 6)-2006 (RA2017)	80
5.	Ammonia (as NH_3)	$\mu g/m^3$	**7**	CPCB Guideline-NAAQMS & Analysis-Volume-I	850
*6.	Hydrogen Chloride (as HCl)	$\mu g/m^3$	**BDL**	IARC Monograph Vol 54	200
*7.	Hydrocarbon (as HC)	mg/m^3	**BDL**	IS: 5182(Part 17)-1979	160

Part D: REMARKS: --

Part E: ABBREVIATIONS: - -- Parameters are not covered under NABL Scope, BDL-Below Detection Limit, NM-Not Mentioned.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

Recognitions
NABL (ISO/IEC 17025: 2017) Accredited Testing Lab and ISO 45001:2018 Certified Lab
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Ph. : (0260) 2975850, 2970850, 2425542, 2420995, 2424901

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TEST CERTIFICATE

Our Ref. No.	**PL/AA/20200720070**	**Issue Date**	October 26, 2020
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Ambient Air Monitoring		
Sample Collection Date	19/10/2020	**Sample Receipt Date**	20/10/2020
Analysis Start Date	21/10/2020	**Analysis Completion Date**	24/10/2020
Part B: SAMPLING DETAILS			
Sample Collection	Collected By us		
Sampling Location	Outside Production Area Backside Plant		
Sampling Procedure	IS 5182 (Part-5)-1975(RA-2014)		
Sampling Instrument	RDS APM 460 BL & FPS APM 550		
Sampling Duration	24 Hrs.	**Weather Condition**	Clear
Ambient Temperature (°C)	32	**Humidity (%)**	69
Any Other Information	NM		

Part C: TEST RESULTS

Sr. No.	Test Parameters	Unit	Results	Test Method	Specification/ Limits
1.	Particulate Matter (PM_{10})	$\mu g/m^3$	**83**	IS: 5182 (Part 23)-2006 (RA2017)	100
2.	Particulate Matter ($PM_{2.5}$)	$\mu g/m^3$	**42**	SOP No. 120 Issue No.03 Issue Date March 2018: 2018	60
3.	Sulphur Dioxide (as SO2)	$\mu g/m^3$	**26**	IS: 5182 (Part 2)-2001 (RA2017)	80
4.	Oxides of Nitrogen (as NOx)	$\mu g/m^3$	**28**	IS: 5182 (Part 6)-2006 (RA2017)	80
5.	Ammonia (as NH_3)	$\mu g/m^3$	**9**	CPCB Guideline-NAAQMS & Analysis-Volume-I	850
*6.	Hydrogen Chloride (as HCl)	$\mu g/m^3$	**BDL**	IARC Monograph Vol 54	200
*7.	Hydrocarbon (as HC)	mg/m^3	**BDL**	IS: 5182(Part 17)-1979	160

Part D: REMARKS: --

Part E: ABBREVIATIONS: - -- Parameters are not covered under NABL Scope, BDL-Below Detection Limit, NM-Not Mentioned.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

QF No. PL/QF/7.8/02

Recognitions
NABL (ISO/IEC 17025: 2017) Accredited Testing Lab and ISO 45001:2018 Certified Lab
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TEST CERTIFICATE

Our Ref. No.	**PL/AA/20210118079**	**Issue Date**	January 27, 2021
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Ambient Air Monitoring		
Sample Collection Date	18/01/2021	**Sample Receipt Date**	19/01/2021
Analysis Start Date	20/01/2021	**Analysis Completion Date**	25/01/2021
Part B: SAMPLING DETAILS			
Sample Collection	Collected By us		
Sampling Location	Outside Production Area Nr. Security Gate		
Sampling Procedure	IS 5182 (Part-5)-1975(RA-2014)		
Sampling Instrument	RDS APM 460 BL & FPS APM 550		
Sampling Duration	24 Hrs.	**Weather Condition**	Clear
Ambient Temperature (°C)	31	**Humidity (%)**	66
Any Other Information	NM		

Part C: TEST RESULTS

Sr. No.	Test Parameters	Unit	Results	Test Method	Specification/ Limits
1.	Particulate Matter (PM_{10})	$\mu g/m^3$	**91**	IS: 5182 (Part 23)-2006 (RA2017)	100
2.	Particulate Matter ($PM_{2.5}$)	$\mu g/m^3$	**53**	SOP No. 120 Issue No.03 Issue Date March 2018: 2018	60
3.	Sulphur Dioxide (as SO2)	$\mu g/m^3$	**24**	IS: 5182 (Part 2)-2001 (RA2017)	80
4.	Oxides of Nitrogen (as NOx)	$\mu g/m^3$	**28**	IS: 5182 (Part 6)-2006 (RA2017)	80
5.	Ammonia (as NH_3)	$\mu g/m^3$	**8**	CPCB Guideline-NAAQMS & Analysis-Volume-I	850
*6.	Hydrogen Chloride (as HCl)	$\mu g/m^3$	**BDL**	IARC Monograph Vol 54	200
*7.	Hydrocarbon (as HC)	mg/m^3	**BDL**	IS: 5182(Part 17)-1979	160

Part D: REMARKS: --

Part E: ABBREVIATIONS: - -- Parameters are not covered under NABL Scope, BDL-Below Detection Limit, NM-Not Mentioned.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

QF No. PL/QF/7.8/02

Recognitions
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TEST CERTIFICATE

Our Ref. No.	**PL/AA/20210118080**	**Issue Date**	January 27, 2021
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Ambient Air Monitoring		
Sample Collection Date	18/01/2021	**Sample Receipt Date**	19/01/2021
Analysis Start Date	20/01/2021	**Analysis Completion Date**	25/01/2021
Part B: SAMPLING DETAILS			
Sample Collection	Collected By us		
Sampling Location	Outside Production Area Backside Plant		
Sampling Procedure	IS 5182 (Part-5)-1975(RA-2014)		
Sampling Instrument	RDS APM 460 BL & FPS APM 550		
Sampling Duration	24 Hrs.	**Weather Condition**	Clear
Ambient Temperature (°C)	32	**Humidity (%)**	69
Any Other Information	NM		

Part C: TEST RESULTS

Sr. No.	Test Parameters	Unit	Results	Test Method	Specification/ Limits
1.	Particulate Matter (PM_{10})	$\mu g/m^3$	**88**	IS: 5182 (Part 23)-2006 (RA2017)	100
2.	Particulate Matter ($PM_{2.5}$)	$\mu g/m^3$	**49**	SOP No. 120 Issue No.03 Issue Date March 2018: 2018	60
3.	Sulphur Dioxide (as SO2)	$\mu g/m^3$	**25**	IS: 5182 (Part 2)-2001 (RA2017)	80
4.	Oxides of Nitrogen (as NOx)	$\mu g/m^3$	**29**	IS: 5182 (Part 6)-2006 (RA2017)	80
5.	Ammonia (as NH_3)	$\mu g/m^3$	**11**	CPCB Guideline-NAAQMS & Analysis-Volume-I	850
*6.	Hydrogen Chloride (as HCl)	$\mu g/m^3$	**BDL**	IARC Monograph Vol 54	200
*7.	Hydrocarbon (as HC)	mg/m^3	**BDL**	IS: 5182(Part 17)-1979	160

Part D: REMARKS: --

Part E: ABBREVIATIONS: - -- Parameters are not covered under NABL Scope, BDL-Below Detection Limit, NM-Not Mentioned.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

QF No. PL/QF/7.8/02

Recognitions
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Annexure 4: Work Place Monitoring

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TEST CERTIFICATE

Our Ref. No.	**PL/WA/2020101968**	**Issue Date**	October 26, 2020
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Work Place Air Monitoring		
Sample Collection Date	19/10/2020	**Sample Receipt Date**	19/10/2020
Analysis Start Date	20/10/2020	**Analysis Completion Date**	20/10/2020
Part B: SAMPLING DETAILS			
Sample Collection	Collected By us		
Sampling Procedure	PID Based Gas Detector		
Sampling Instrument	ION Science (PID GAS DITECTOR)		
Sampling Location	Inside Plant-1		
Sampling duration	NM		
Any Other Information	NM		

Part C: TEST RESULTS

Sr. No.	Test Parameters	Unit	Results	Test Method	Specification / Limits
*1.	n- Butanol	mg/m^3	**31.5**	PID Based Gas Detector	150
*2.	Ammonia (as NH_3)	mg/m^3	**6**	PID Based Gas Detector	18
*3.	n-Hexane	mg/m^3	**21.5**	PID Based Gas Detector	180
*4.	Ethanol	mg/m^3	**104**	PID Based Gas Detector	1900

Part D: REMARKS: --

Part E: ABBREVIATIONS: - -- Parameters are not covered under NABL Scope, NM-Not Mentioned.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

Recognitions
NABL (ISO/IEC 17025: 2017) Accredited Testing Lab and ISO 45001:2018 Certified Lab
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TEST CERTIFICATE

Our Ref. No.	**PL/WA/2020101969**	**Issue Date**	October 26, 2020
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Work Place Air Monitoring		
Sample Collection Date	19/10/2020	**Sample Receipt Date**	19/10/2020
Analysis Start Date	20/10/2020	**Analysis Completion Date**	20/10/2020
Part B: SAMPLING DETAILS			
Sample Collection	Collected By us		
Sampling Procedure	PID Based Gas Detector		
Sampling Instrument	ION Science (PID GAS DITECTOR)		
Sampling Location	Inside Plant-2		
Sampling duration	NM		
Any Other Information	NM		

Part C: TEST RESULTS

Sr. No.	Test Parameters	Unit	Results	Test Method	Specification / Limits
*1.	n- Butanol	mg/m^3	**6.8**	PID Based Gas Detector	150
*2.	Ammonia (as NH_3)	mg/m^3	**7.4**	PID Based Gas Detector	18
*3.	n-Hexane	mg/m^3	**3.5**	PID Based Gas Detector	180
*4.	Ethanol	mg/m^3	**7.8**	PID Based Gas Detector	1900

Part D: REMARKS: --

Part E: ABBREVIATIONS: - -- Parameters are not covered under NABL Scope, NM-Not Mentioned.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

Recognitions
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precitech Laboratories PVT. LTD.

TEST CERTIFICATE

Our Ref. No.	**PL/WA/20210118077**	**Issue Date**	January 27, 2021
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Work Place Air Monitoring		
Sample Collection Date	18/01/2021	**Sample Receipt Date**	18/01/2021
Analysis Start Date	19/01/2021	**Analysis Completion Date**	19/01/2021
Part B: SAMPLING DETAILS			
Sample Collection	Collected By us		
Sampling Procedure	PID Based Gas Detector		
Sampling Instrument	ION Science (PID GAS DITECTOR)		
Sampling Location	Inside Plant-1		
Sampling duration	NM		
Any Other Information	NM		

Part C: TEST RESULTS

Sr. No.	Test Parameters	Unit	Results	Test Method	Specification / Limits
*1.	n- Butanol	mg/m^3	**28.5**	PID Based Gas Detector	150
*2.	Ammonia (as NH_3)	mg/m^3	**7**	PID Based Gas Detector	18
*3.	n-Hexane	mg/m^3	**23.4**	PID Based Gas Detector	180
*4.	Ethanol	mg/m^3	**96**	PID Based Gas Detector	1900

Part D: REMARKS: --

Part E: ABBREVIATIONS: - -- Parameters are not covered under NABL Scope, NM-Not Mentioned.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

QF No. PL/QF/7.8/05

Recognitions
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TEST CERTIFICATE

Our Ref. No.	**PL/WA/20210118078**	**Issue Date**	January 27, 2021
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Work Place Air Monitoring		
Sample Collection Date	18/01/2021	**Sample Receipt Date**	18/01/2021
Analysis Start Date	19/01/2021	**Analysis Completion Date**	19/01/2021
Part B: SAMPLING DETAILS			
Sample Collection	Collected By us		
Sampling Procedure	PID Based Gas Detector		
Sampling Instrument	ION Science (PID GAS DITECTOR)		
Sampling Location	Inside Plant-2		
Sampling duration	NM		
Any Other Information	NM		

Part C: TEST RESULTS

Sr. No.	Test Parameters	Unit	Results	Test Method	Specification / Limits
*1.	n- Butanol	mg/m^3	**5.5**	PID Based Gas Detector	150
*2.	Ammonia (as NH_3)	mg/m^3	**6.8**	PID Based Gas Detector	18
*3.	n-Hexane	mg/m^3	**3.1**	PID Based Gas Detector	180
*4.	Ethanol	mg/m^3	**6.5**	PID Based Gas Detector	1900

Part D: REMARKS: --

Part E: ABBREVIATIONS: - -- Parameters are not covered under NABL Scope, NM-Not Mentioned.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

QF No. PL/QF/7.8/05

Recognitions
NABL (ISO/IEC 17025: 2017) Accredited Testing Lab and ISO 45001:2018 Certified Lab
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Annexure 5: Noise Monitoring Report

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TE ST CERTIFICATE

Our Ref. No.	**PL/N/20201019072**	**Issue Date**	October 26, 2020
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Noise Level Monitoring (Day Time)		
Sample Collection Date	19/10/2020	**Sample Receipt Date**	19/10/2020
Analysis Start Date	20/10/2020	**Analysis Completion Date**	20/10/2020
Part B: SAMPLING DETAILS			
Sample Collection	Collected by us		
Sampling Location	Outside Production Plant		
Sampling Procedure	IS 9989:1981		
Sampling Instrument	Digital Sound Level Meter		
Any Other Information	Time-06.00 am to 10.00 pm		

Part C: TEST RESULTS

Sr. No.	Specified Work Place	Unit	Results	Test Method	Specification/ Limits
*1.	Near Security Gate	dB(A)	**66.2**	IS 9989:1981	75
*2.	Near Cooling Tower	dB(A)	**70.2**	IS 9989:1981	75
*3.	Administration Office	dB(A)	**56.4**	IS 9989:1981	75
*4.	Near Boiler House	dB(A)	**71.8**	IS 9989:1981	75
*5.	Plant Center	dB(A)	**72.5**	IS 9989:1981	75
*6.	East Side	dB(A)	**66.2**	IS 9989:1981	75
*7.	West Side	dB(A)	**70.8**	IS 9989:1981	75
*8.	South Side	dB(A)	**71.3**	IS 9989:1981	75
*9.	North Side	dB(A)	**69.4**	IS 9989:1981	75

Part D: REMARKS: --

Part E: ABBREVIATIONS: - -- Parameters are not covered under NABL Scope.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

QF No. PL/QF/7.8/04

Recognitions
NABL (ISO/IEC 17025: 2017) Accredited Testing Lab and ISO 45001:2018 Certified Lab
Recognized Env. Lab. under EPA-1986 by Ministry of Environment & Forest
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precitech Laboratories PVT. LTD.

TE ST CERTIFICATE

Our Ref. No.	**PL/N/20201019073**	**Issue Date**	October 26, 2020
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Noise Level Monitoring (Night Time)		
Sample Collection Date	19/10/2020	**Sample Receipt Date**	19/10/2020
Analysis Start Date	20/10/2020	**Analysis Completion Date**	20/10/2020
Part B: SAMPLING DETAILS			
Sample Collection	Collected by us		
Sampling Location	Outside Production Plant		
Sampling Procedure	IS 9989:1981		
Sampling Instrument	Digital Sound Level Meter		
Any Other Information	Time-10.00 pm to 06.00 am		

Part C: TEST RESULTS

Sr. No.	Specified Work Place	Unit	Results	Test Method	Specification/ Limits
*1.	Near Security Gate	dB(A)	**54.2**	IS 9989:1981	70
*2.	Near Cooling Tower	dB(A)	**63.4**	IS 9989:1981	70
*3.	Administration Office	dB(A)	**40.5**	IS 9989:1981	70
*4.	Near Boiler House	dB(A)	**67.6**	IS 9989:1981	70
*5.	Plant Center	dB(A)	**68.1**	IS 9989:1981	70
*6.	East Side	dB(A)	**61.2**	IS 9989:1981	70
*7.	West Side	dB(A)	**60.5**	IS 9989:1981	70
*8.	South Side	dB(A)	**61.4**	IS 9989:1981	70
*9.	North Side	dB(A)	**59.7**	IS 9989:1981	70

Part D: REMARKS: --

Part E: ABBREVIATIONS: - -- Parameters are not covered under NABL Scope.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

QF No. PL/QF/7.8/04

Recognitions
NABL (ISO/IEC 17025: 2017) Accredited Testing Lab and ISO 45001:2018 Certified Lab
Recognized Env. Lab. under EPA-1986 by Ministry of Environment & Forest
Recognized Env. Auditors with Gujarat Pollution Control Board

Registered & Head Office :
1st Floor, Bhanujyot Complex, Plot No.C5/27,
B/h. Panchratna Complex, Nr. GIDC Char Rasta, Vapi - 396 195
Ph. : (0260) 2975850, 2970850, 2425542, 2420995, 2424901

precitech Laboratories PVT. LTD.

TE ST CERTIFICATE

Our Ref. No.	**PL/N/20210118081**	**Issue Date**	January 27, 2021
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Noise Level Monitoring (Day Time)		
Sample Collection Date	18/01/2021	**Sample Receipt Date**	18/01/2021
Analysis Start Date	19/01/2021	**Analysis Completion Date**	19/01/2021
Part B: SAMPLING DETAILS			
Sample Collection	Collected by us		
Sampling Location	Outside Production Plant		
Sampling Procedure	IS 9989:1981		
Sampling Instrument	Digital Sound Level Meter		
Any Other Information	Time-06.00 am to 10.00 pm		

Part C: TEST RESULTS

Sr. No.	Specified Work Place	Unit	Results	Test Method	Specification/ Limits
*1.	Near Security Gate	dB(A)	**67.2**	IS 9989:1981	75
*2.	Near Cooling Tower	dB(A)	**71.5**	IS 9989:1981	75
*3.	Administration Office	dB(A)	**57.3**	IS 9989:1981	75
*4.	Near Boiler House	dB(A)	**72.6**	IS 9989:1981	75
*5.	Plant Center	dB(A)	**73.1**	IS 9989:1981	75
*6.	East Side	dB(A)	**68.9**	IS 9989:1981	75
*7.	West Side	dB(A)	**71.4**	IS 9989:1981	75
*8.	South Side	dB(A)	**72.3**	IS 9989:1981	75
*9.	North Side	dB(A)	**70.8**	IS 9989:1981	75

Part D: REMARKS: --

Part E: ABBREVIATIONS: - -- Parameters are not covered under NABL Scope.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

QF No. PL/QF/7.8/04

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B/h. Panchratna Complex, Nr. GIDC Char Rasta, Vapi - 396 195
Ph. : (0260) 2975850, 2970850, 2425542, 2420995, 2424901

precitech Laboratories PVT. LTD.

TE ST CERTIFICATE

Our Ref. No.	**PL/N/20210118082**	**Issue Date**	January 27, 2021
Customer Name & Address	M/s. OM TITANATES, Shed No. C1/B-2805 & 2806, Chemical Zone, GIDC -Sarigam		
Customer Ref. No & Date	NM		
Part A: SAMPLE PARTICULARS			
Sample Name	Noise Level Monitoring (Night Time)		
Sample Collection Date	18/01/2021	**Sample Receipt Date**	18/01/2021
Analysis Start Date	19/01/2021	**Analysis Completion Date**	19/01/2021
Part B: SAMPLING DETAILS			
Sample Collection	Collected by us		
Sampling Location	Outside Production Plant		
Sampling Procedure	IS 9989:1981		
Sampling Instrument	Digital Sound Level Meter		
Any Other Information	Time-10.00 pm to 06.00 am		

Part C: TEST RESULTS

Sr. No.	Specified Work Place	Unit	Results	Test Method	Specification/ Limits
*1.	Near Security Gate	dB(A)	**55.1**	IS 9989:1981	70
*2.	Near Cooling Tower	dB(A)	**64.2**	IS 9989:1981	70
*3.	Administration Office	dB(A)	**41.7**	IS 9989:1981	70
*4.	Near Boiler House	dB(A)	**66.9**	IS 9989:1981	70
*5.	Plant Center	dB(A)	**67.4**	IS 9989:1981	70
*6.	East Side	dB(A)	**60.3**	IS 9989:1981	70
*7.	West Side	dB(A)	**61.2**	IS 9989:1981	70
*8.	South Side	dB(A)	**60.8**	IS 9989:1981	70
*9.	North Side	dB(A)	**58.7**	IS 9989:1981	70

Part D: REMARKS: --

Part E: ABBREVIATIONS: - -- Parameters are not covered under NABL Scope.

Note: This report is subjected to the terms and conditions mentioned overleaf

Verified by

(Prashant Bhidkar)
Authorised Signatory

********** End of Report **********

QF No. PL/QF/7.8/04

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Ph. : (0260) 2975850, 2970850, 2425542, 2420995, 2424901

Annexure 6: Performance evaluation Report of Process Gas Scrubber

PERFORMANCE EVALUATION REPORT

OF

PROCESS GAS SCRUBBER

FOR

M/S. OM TITANATS

Plot No. C-I-B-2865,
G.I.D.C. ESTATE,
SARIGAM-396 155
Dist: Valsad, Gujarat

PREPARED BY

ENVIRONMENT AUDIT CELL

SHREE TAPI BRAHMACHRAYSHRAM SABHA COLLEGE OF DIPLOMA ENGINEERING
SHREE SWAMI ATMANAND SARSWATI VIDYA SANKUL
OPP.KAPODRA POLICE STATION,
VARACHHA ROAD,
SURAT – 395 006,
PH.: (0261)2571671, 2571692, FAX: 0261-2571692
Email: stbs.envaudit08@gmail.com, stbs_29@yahoo.co.in
Web: www.stbscollege.org

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1. INTRODUCTION & METHODOLOGY

- ✓ M/s. Om Titanates located at Plot Bo. C-1-B 2865, GIDC, Sarigam, Dist: Valsad, Gujarat is engazed into the manufacturing of synthetic Organic Chemicals.
- ✓ The Company presently holds CCA no. AWH- 68681 issued by GPCB outward no. 306341 on dated 05/03/2015 and its subsequent amendment issued by GPCB outward no. 323181 on dated 03/08/2015 was valid up to 15/12/2019. However the company has applied for renewal to GPCB by inward no. 167827 on dated 13/12/2019 which is under process.
- ✓ The company has got Environment Clearance by MOEF letter no. F. No. J-11011/186/2012/IA II (I) on dated 16/05/2015.
- ✓ The company wants to carryout adequacy study of performance evaluation of existing scrubber installed at plant address for the control of HCl & NH_3.
- ✓ The company has approach us (Shree Tapi Brahmcharyashram Sabha College of Diploma Engineering, Surat) to assess the overall pollution load due to proposed activities and we are recognized as Schedule-I Environmental Auditor from GPCB and our authorization is issued by GPCB vide its letter no. GPCB/EA-218(2)/551742/20/01/2020 & it shall be valid up to 31/12/2021.
- ✓ We have visited the plant on dated 24/01/2020 and discuss with the technical representatives of the company and physical verification of scrubber and also we have collected samples from scrubber to check the quality of gaseous parameters (HCL & NH_3)
- ✓ We have carried out details study of pollution load on scrubber based on the sampling and analysis of related parameters and other related data submitted by the company i.e. mass balance, scrubber design data etc. Details of performance of existing scrubber is mentioned in this report.

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2. DETAILS OF PRODUCTS

LIST OF PRODUCT
(TABLE NO. - 01)

Sr. No.	Products Name	CAS No.	Production Capacity (MT/Month)
1	Tetra Butyl Titanate	5593-70-4	100
2	Tetra Iso Propyl Titanate	546-68-9	
3	TPT 20B (Blending Process only)	546-68-9/ 5593-70-4	
4	Tetra 2-Ethylhexyl Titanate (Blending Process only)	1070-10-6	
5	Titanium Acetyl Acetonate (Blending Process only)	17501-79-0	
6	Ethyl Titanates	3087-36-3	
7	Di Isopropyl Ethyl Amine	7087-68-5	15
8	Sodium/Potassium Ethyl Sulphate	...	22
9	Ammonium Chloride (By Product)	12125-02-9	94
	Total		**231**

Note:
- ✓ For Sr. No. 1 to 6 products, it shall be produce maximum 100 MT/month for individual or total of all.
- ✓ Sr. No. 9 Ammonium Chloride is a by-product which is generated from the main product Tetra Butyl Titanates

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3. MANUFACTURING PROCESS & MATERIAL BALANCE

1. TETRA BUTYL TITANATE (TBT)

Chemical Reaction:

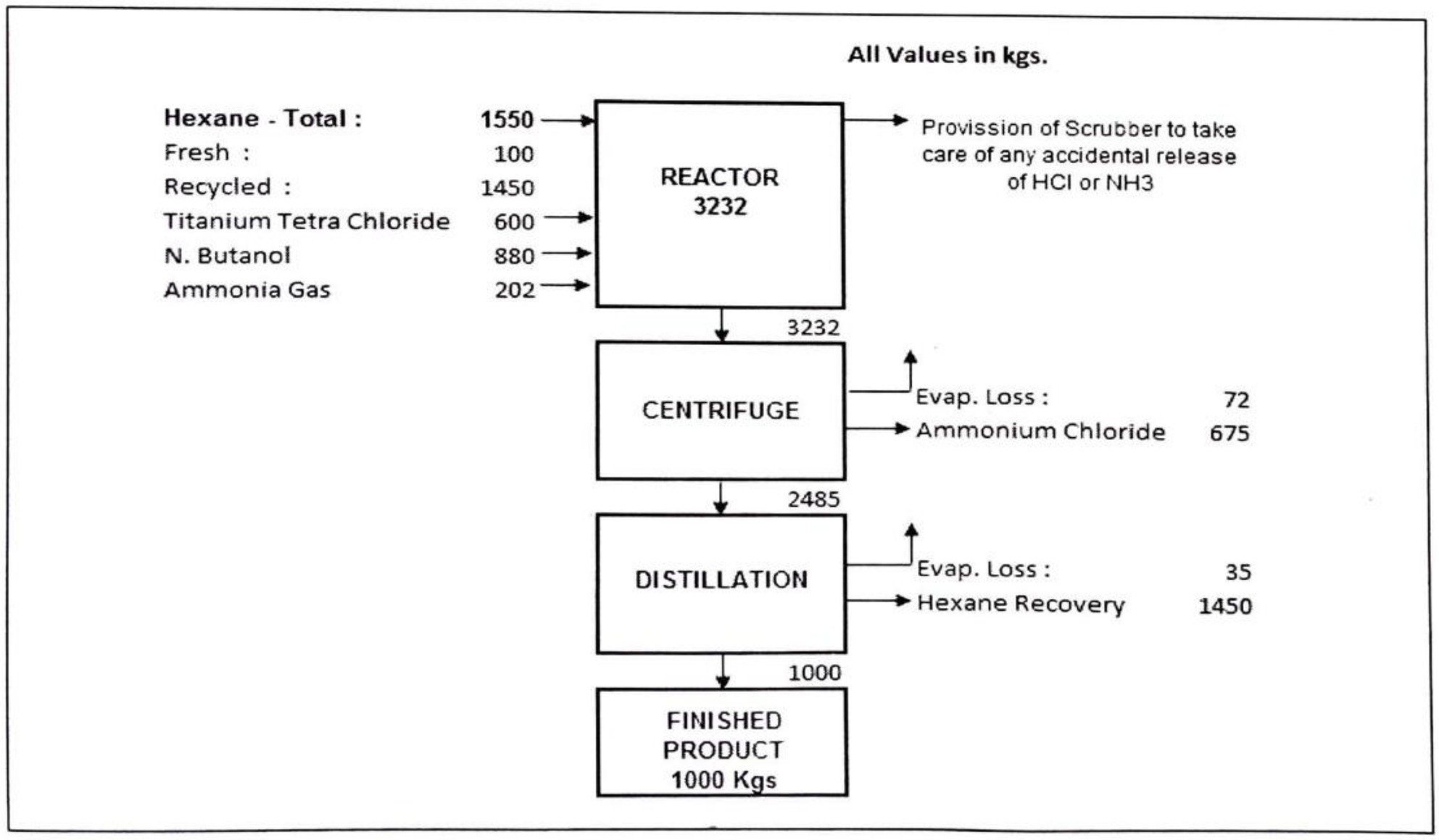
$$TiCl_4 + 4\,C_4H_9OH + 4NH3 \rightarrow Ti\,(OC_4H_9)4 + 4\,NH_4Cl$$

190 296 68 340 214

Manufacturing Process:

Butanol and titanium tetra chloride and solvent hexane are charged into a reactor under continuous stirring, where in hexane acts as a process carrier. Exothermic reaction is controlled by circulating cooling water in the jacket. Ammonium chloride formed as a solid product is removed by filtration, filled in airtight bags to recover as a product. As a safety measure, the reactor is connected with a water scrubber to take care of any accidental release of HCl or ammonia. The remaining organic mixture containing Tetra Butyl Titanate in Hexane is transferred to a distillation kettle to recover and recycle solvent hexane. Excess hexane is separated by distillation from the product itself and recycled back to the process. The bottom product is the main product thus there is no generation of any distillation residue.

Material Balance:



2. TETRA ISOPROPYL TITANATE (TIPT)

Chemical Reaction:

$$TiCl_4 + 4\,C_3H_7OH + 4\,NH_3 \rightarrow Ti\,(OC_3H_7)_4 + 4\,NH_4Cl$$

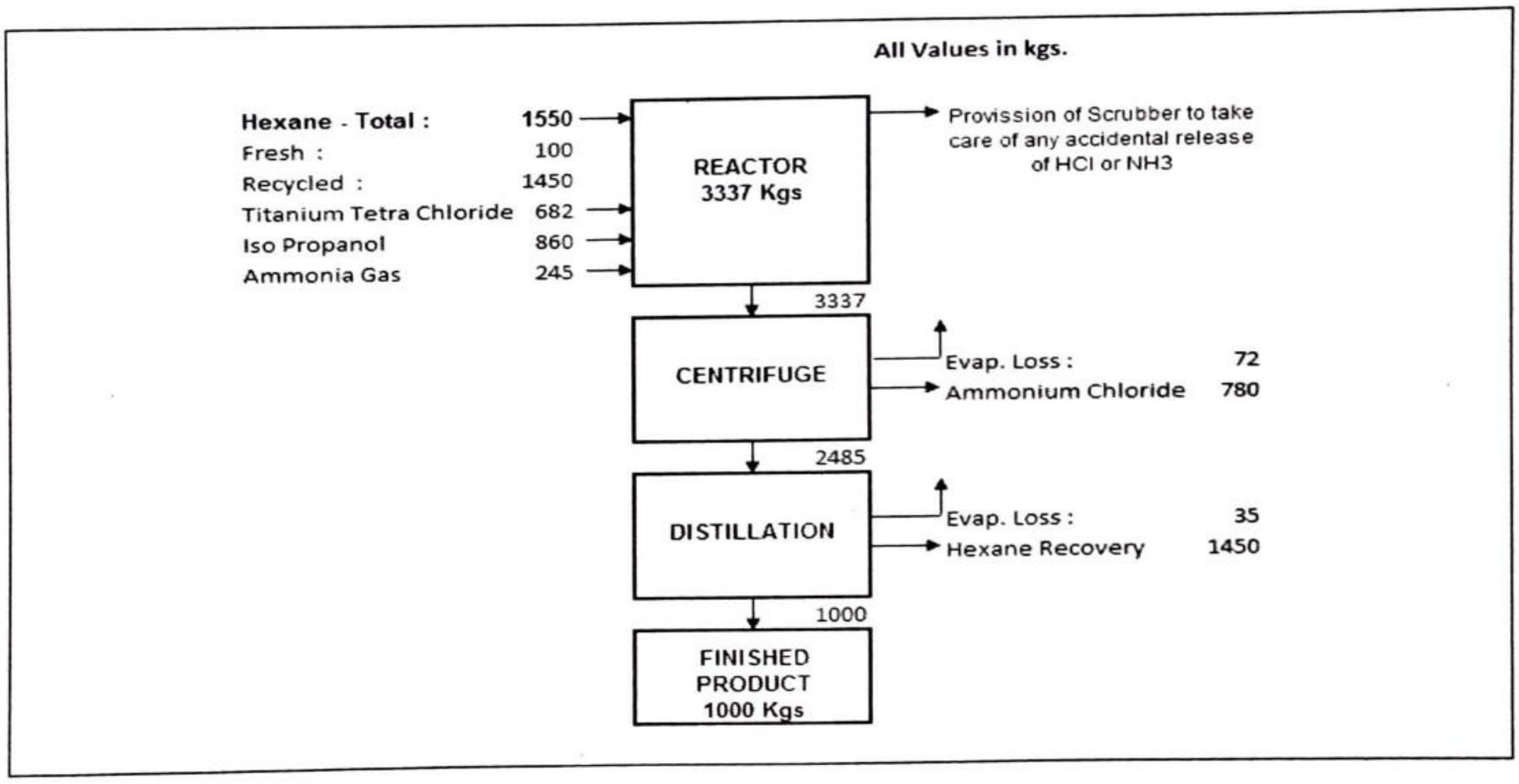
190 240 68 284 214

Scanned by TapScanner

Manufacturing Process:

Iso Propanol and titanium tetra chloride and solvent hexane are charged into a reactor under continuous stirring, wherein hexane acts as a process carrier. Exothermic reaction is controlled by circulating cooling water in the jacket. Ammonium chloride formed as a solid product is removed by filtration, filled in airtight bags to recover as a product. As a safety measure, the reactor is connected with a water scrubber to take care of any accidental release of HCl or ammonia. The remaining organic mixture containing Tetra Isopropyl Titanate in Hexane is transferred to a distillation kettle to recover and recycle solvent hexane. Excess hexane is separated by distillation from the product itself and recycled back to the process. The bottom product is the main product thus there is no generation of any distillation residue.

Material Balance:

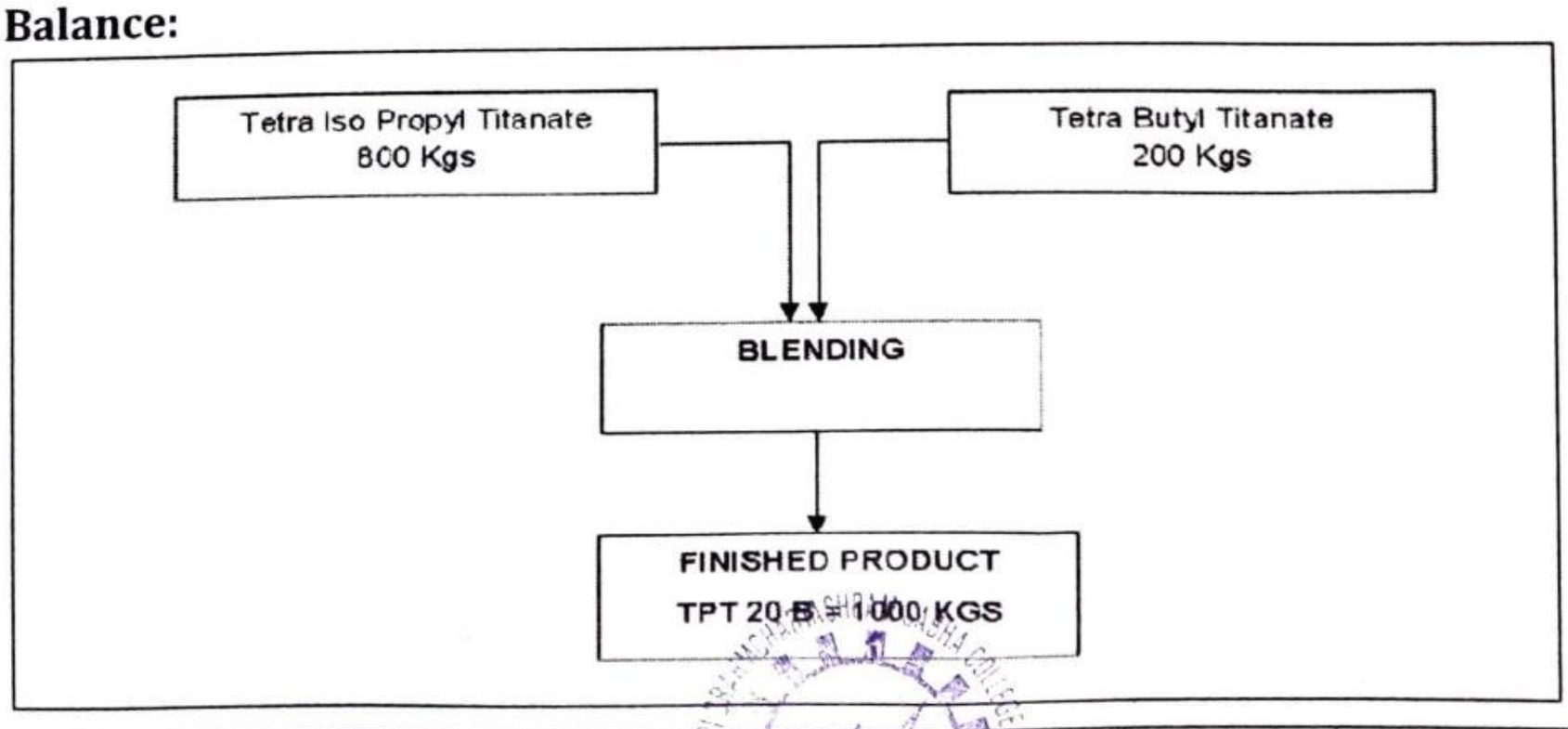


3. TPT 20 B (MIXED TITANATE – BLENDING ONLY)

Manufacturing Process:

It is only blending process so no any chemical reaction takes places. Tetra Butyl Titanate & Tetra Iso Propyl Titanate will be blended together to produce the finished product - TPT 20 B.

Material Balance:



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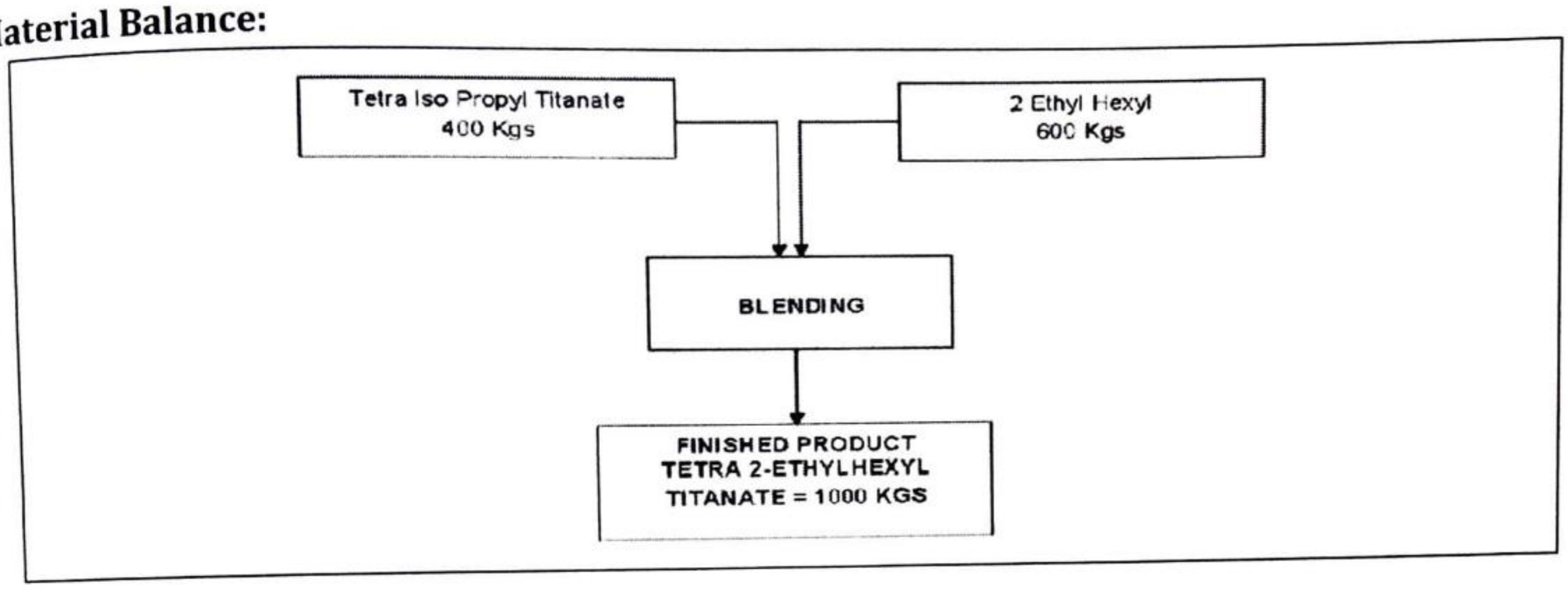
4. TETRA 2- ETHYLHEXYL TITANATE (BLENDING ONLY)

Manufacturing Process:

It is only blending process so no any chemical reaction takes places. Tetra Iso Propyl Titanate and 2 Ethyl Hexyl will be blended together to produce the finished product – Tetra 2-Ethylhexyl Titanate.

Material Balance:

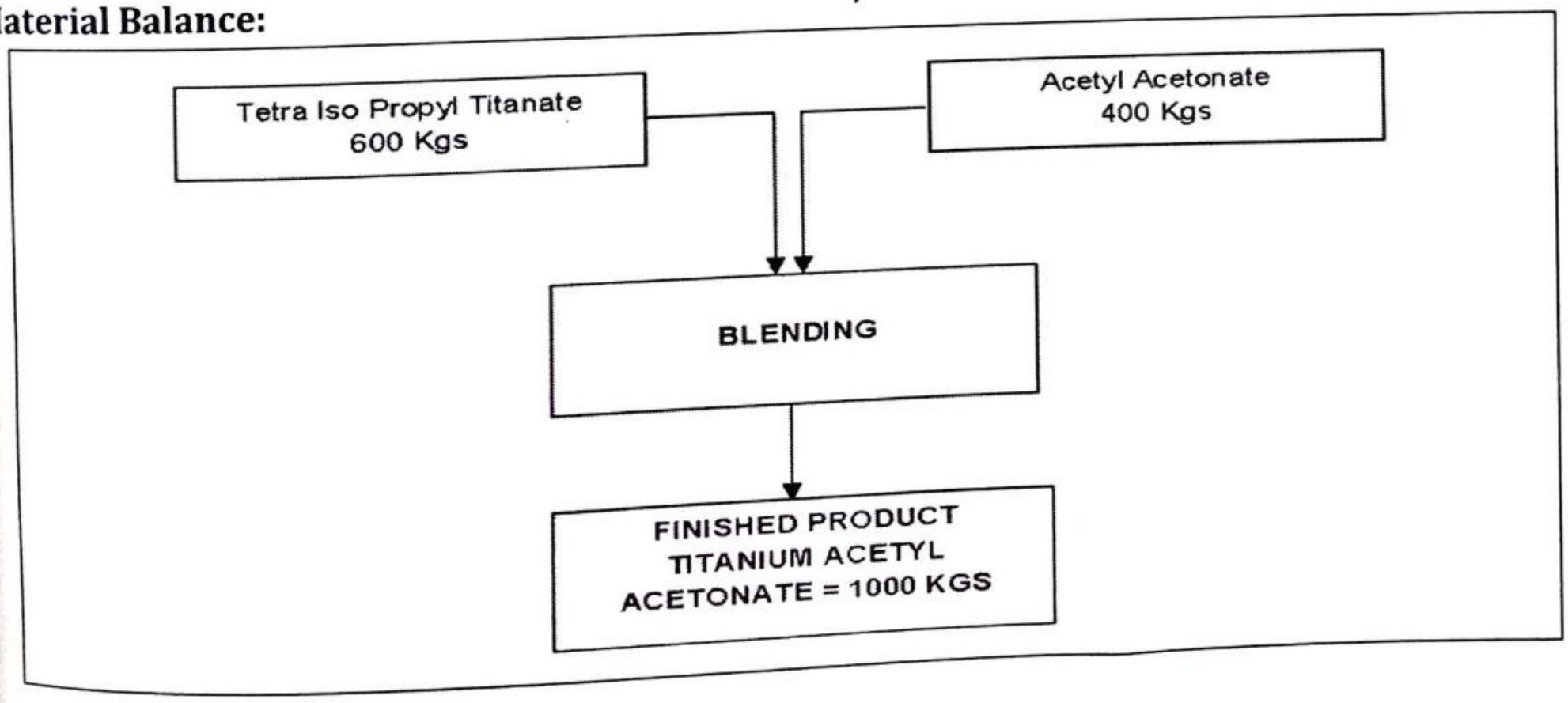


5. TITANIUM ACETYL ACETONATE (BLENDING ONLY)

Manufacturing Process:

It is only blending process so no any chemical reaction takes places. Tetra Iso Propyl Titanate and Acetyl Acetonate will be blended together to produce the finished product – Titanium Acetyl Acetonate.

Material Balance:



6. ETHYL TITANATE

Chemical Reaction:

$$\underset{190}{TiCl_4} + \underset{184}{4CH_3CH_2OH} + \underset{68}{4NH_3} \qquad \underset{228}{Ti(CH_3CH_2O)_4} + \underset{214}{4NH_4Cl}$$

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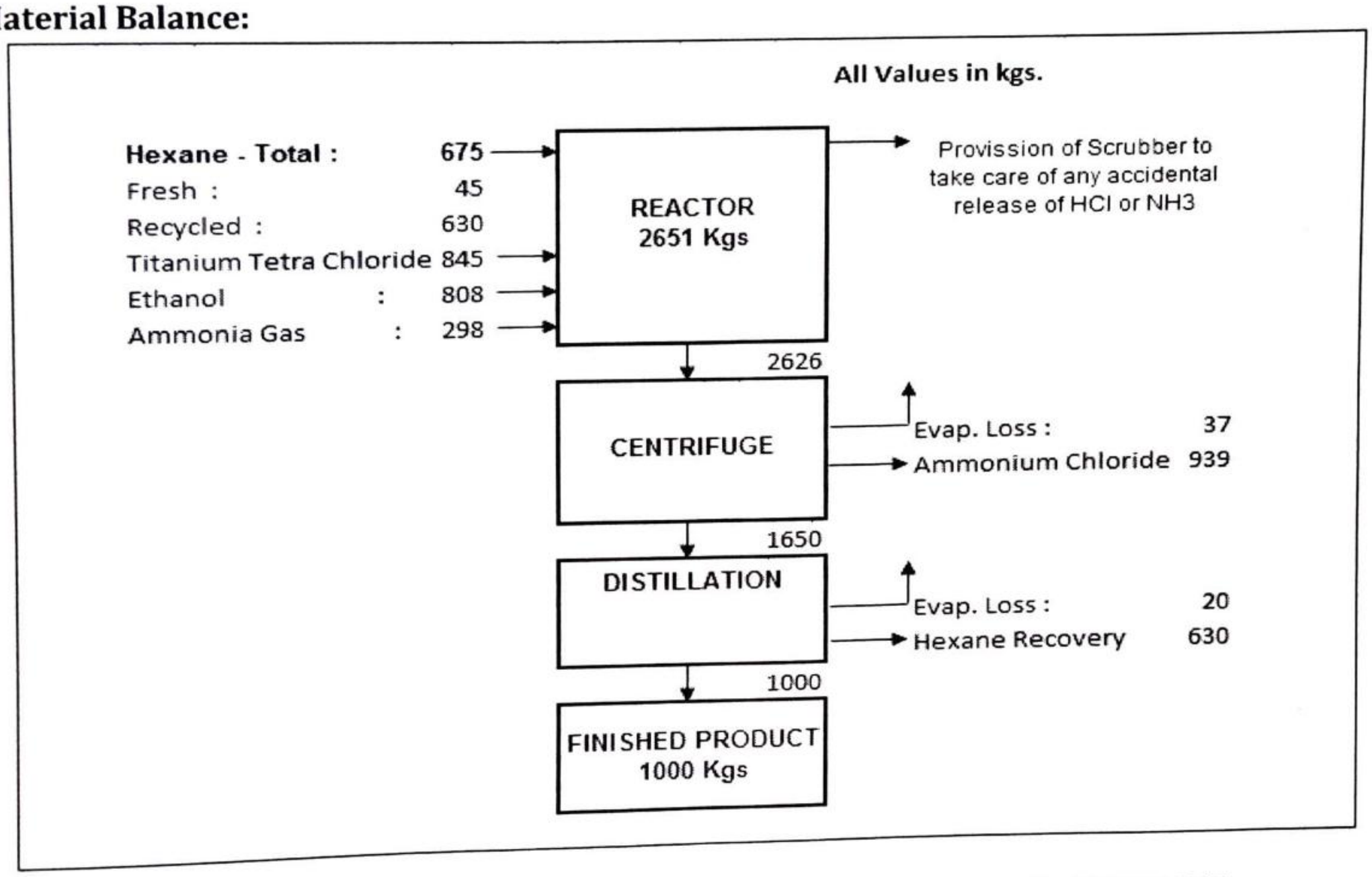
Manufacturing Process:

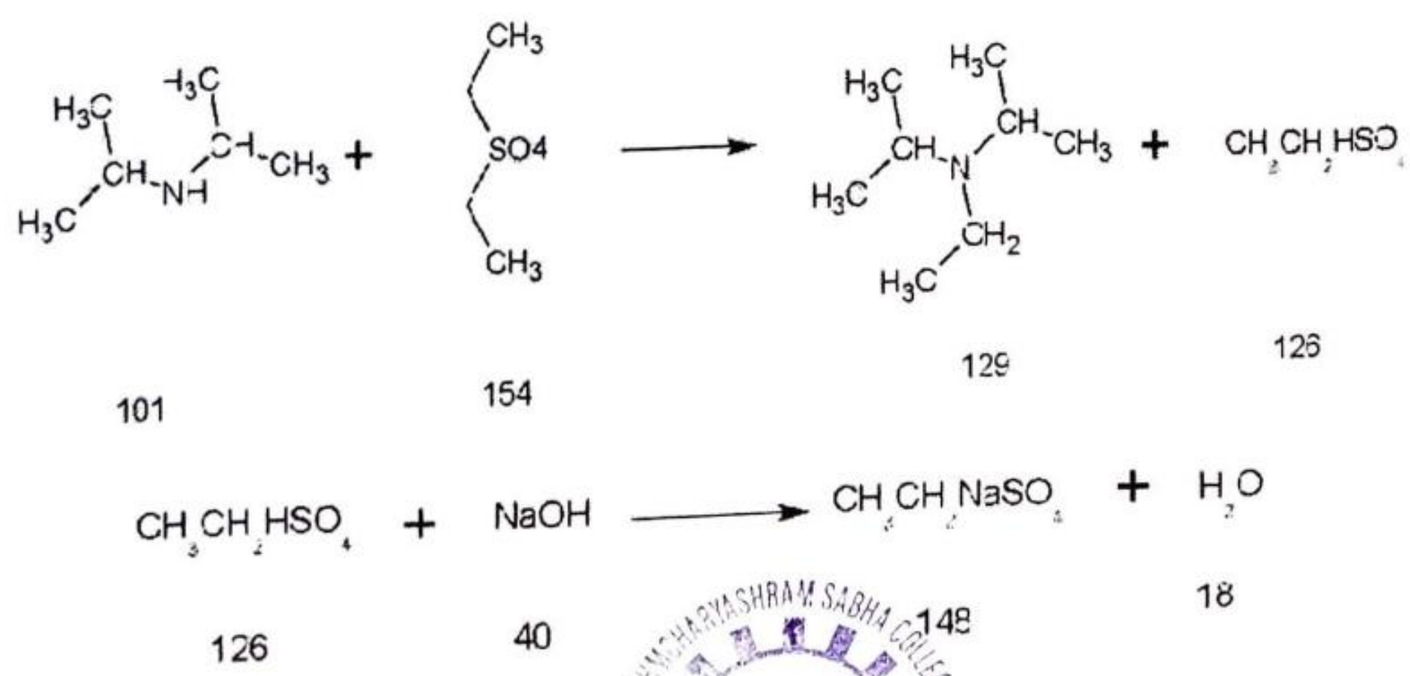
Ethanol and titanium tetra chloride and solvent hexane are charged into a reactor under continuous stirring, wherein hexane acts as a process carrier. Exothermic reaction is controlled by circulating cooling water in the jacket. Ammonium chloride formed as a solid product is removed by filtration, filled in airtight bags to recover as a product. As a safety measure, the reactor is connected with a water scrubber to take care of any accidental release of HCl or ammonia. The remaining organic mixture containing Ethyl Titanate in Hexane is transferred to a distillation kettle to recover and recycle solvent hexane. Excess hexane is separated by distillation from the product itself and recycled back to the process. The bottom product is the main product thus there is no generation of any distillation residue.

Material Balance:



7. DI ISOPROPYLETHYLAMINE (DIPEA) & SODIUM/ POTASSIUM ETHYL SULPHATE

Chemical Reaction:



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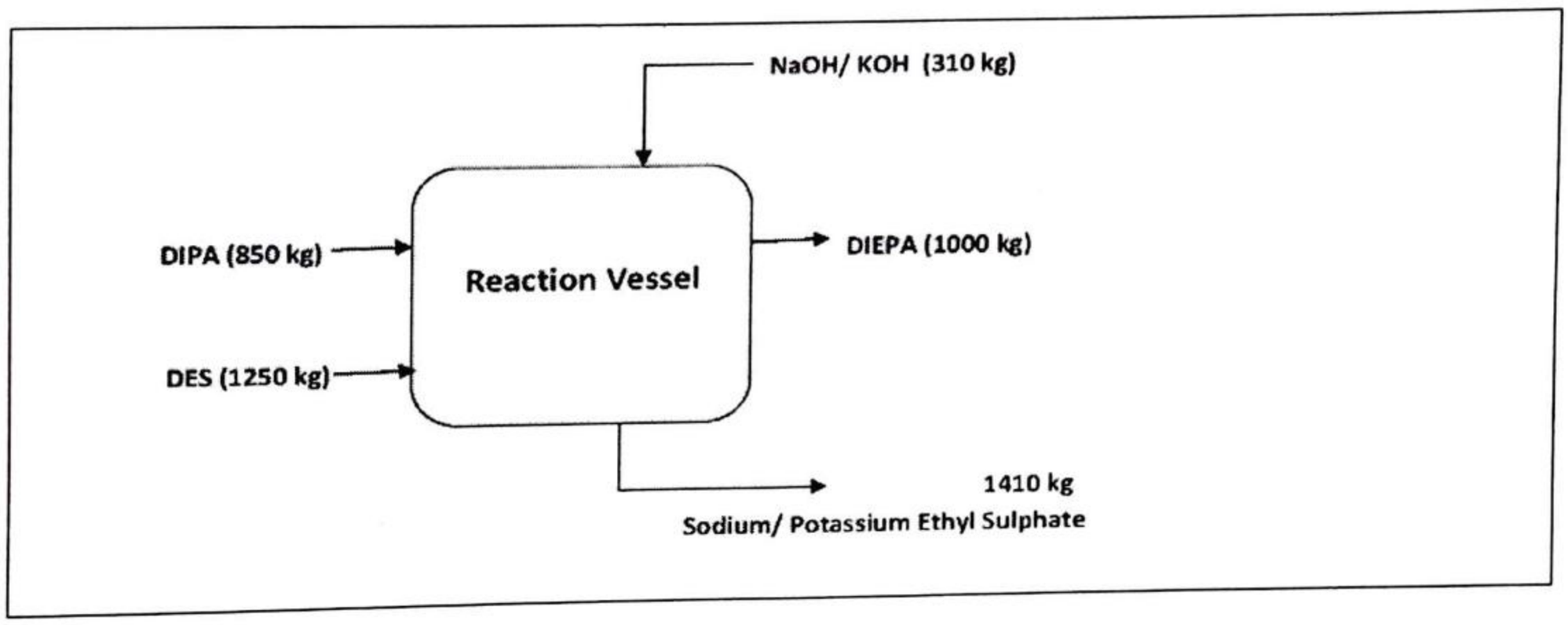
Manufacturing Process:

- Charge Di iso propyl amine (DIPA) in reactor.
- Heat up to 50°C.
- Add diethyl sulphate (DES) after 4 hrs.
- Complete the reaction & cool to room temperature.
- Add sodium hydroxide (NaOH) at room temperature.
- Separate aqueous layer contains sodium/ potassium sulphate salt from bottom.
- Fill the product in drum.

Material Balance:



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4. DETAILS OF PROCESS GAS SCRUBBER

As per manufacturing process, there is no any process gas emission but during ammonia purging, if accidental release, then it will pass through scrubber and also all the vent of all reactor are connected with scrubber.

DETAILS OF SCRUBBER & APCM WITH EMISSION PARAMETERS
(TABLE NO. - 02)

PROCESS GAS EMISSION					
Sr. No.	**Vent Attached To**	**Vent Height & Diameter**	**Air Pollution Control System**	**Air Pollution Control System**	**Emission Parameters with standard norms**
1.	Reactor	Height: 12 Meters Diameter: 250 mm	Dual Scrubber (Acidic+Water)*	HCl NH_3	20 mg/Nm^3 175 mg/Nm^3

Note:

- ✓ Unit has provided Acidic + Water scrubber to control the emission of NH_3 and HCl, Scrubbing liquid is then passed through evaporator having capacity of 200 kg/hr. and after that condensate water is reused into cooling tower and residue is send for disposal as per hazardous waste rule.
- ✓ *As per CCA, water and alkali scrubbing system is given in APCM but considering that HCl is already trapped in the reactor to form NH_4Cl, and that there are chances of carryover of excess NH_3 and also as per the instruction received from GPCB officials during site visit, the company has provided acidic + water scrubber.
- ✓ The company is advised to submit an official letter to GPCB informing about the same.

DETAILS OF SCRUBBER

Capacity of pump	: 30 m^3/hour
Capacity of blower	: 3 HP motor
Height of column	: 6 m
Scrubbing media	: Acidic (HCl solution) + water

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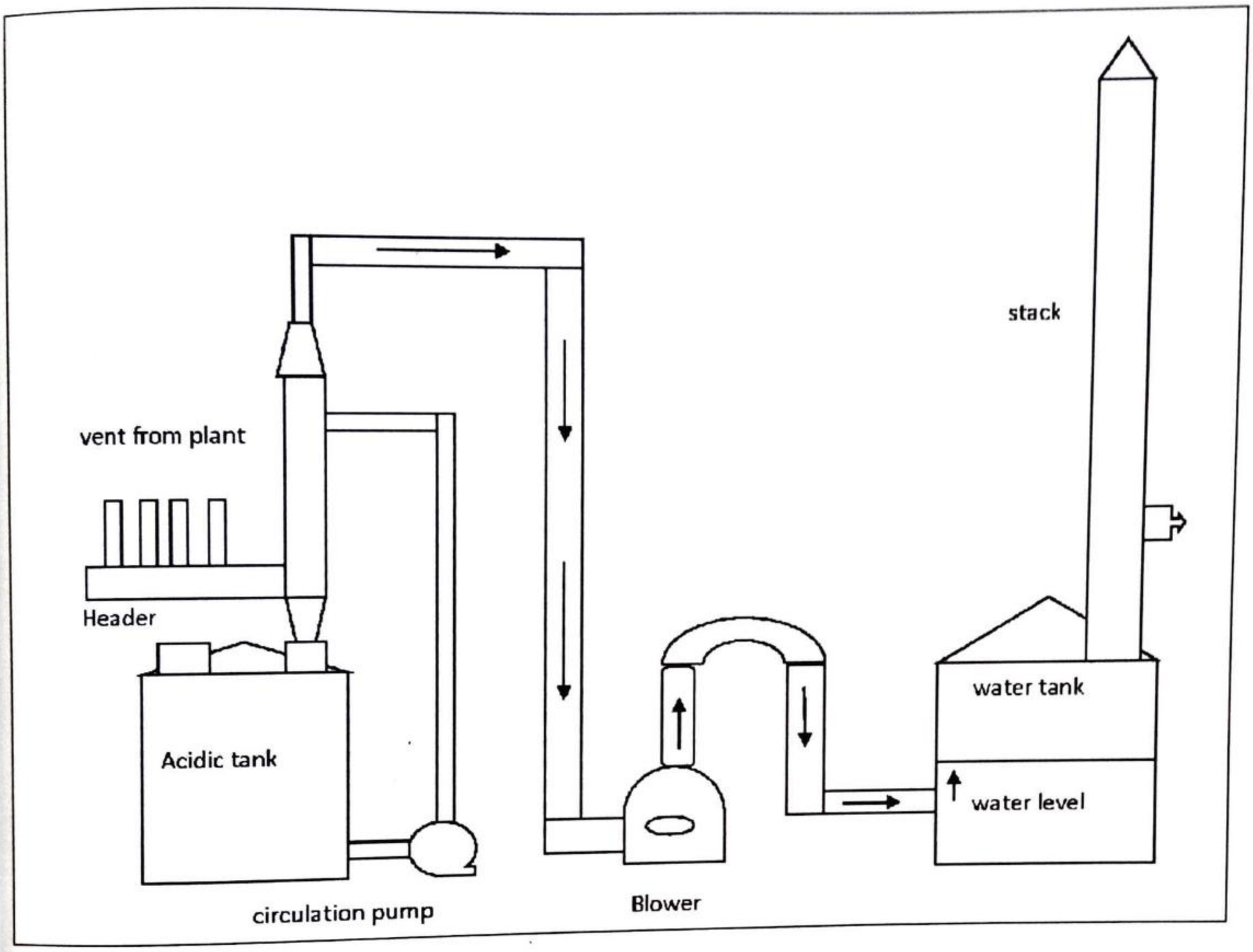
LINE DIAGRAM OF SCRUBBER



SOP OF SCRUBBER

OM TITANATE		Doc No:	OT/SOP/10
		Revision No:	00
		Date:	01.01.2020
		Prepared By:	Vikram
SECTION TITLE:	STANDARD OPERATING PROCEDURES	Approved By:	Prabhakar
DOCUMENT TITLE:	SOP for two stage scrubber	Pages:	1

Instruction:

Daily check list points,

1) Daily check pH of both tanks.
2) pH of tank-1 should be acidic.
3) pH of tank-2 should be neutral.
4) Daily change water from water tank no 2,
5) Daily check water level of both tanks,
6) Check blower suction, if there is any line chock.
7) Blower motor should be in running 24 hrs continue.
8) Always start circulation pump before start Ammonia charging in reactor.

Procedure:

1) If accidentally Ammonia released through vent due to vent valve may be pass, the released NH3 Goes to scrubber through vent line, column, through tank no 1, if excess then through blower to tank no 2 respectively.
2) If NH3 accidentally released it will be diluted in tank no 1due to circulation through column.
3) After all in control, check pH of the tank. If it's neutral, then transfer to evaporator. Or make neutral and then transfer to evaporator
4) Start heating to evaporator.
5) Collected distillate in receiver used in cooling tower.

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POLLUTION LOAD FOR SCRUBBER

(TABLE NO. - 03)

Details	Unit	Value
Vent Height	m	11
Vent Diameter	m	0.25
Temperature	°C	33
Primary scrubber bed Height	m	3
Primary Scrubbing Media	...	HCl soln.
Secondary scrubber bed Height	m	3
Secondary Scrubbing Media	...	Water
Area of Vent	m^2	0.049
Flue Gas Velocity	m/s	3.42
Volumetric Flow Rate	m^3/Sec	0.03
Gas Outlet Concentration		
HCl (As per our test report)	mg/Nm^3	BDL*
NH_3 (As per our Test report)	mg/Nm^3	17.45
Pollution Load/Emission Load		
For HCl	kg/day	--
For NH_3	kg/day	0.04523

Note:

- ✓ *BDL: Below Detectable Limit
- ✓ Above pollution load is based on the sample analysis results carried out by us and also we have checked previous analysis reports carried out by third party and GPCB which was under stipulated norms mentioned in CCA.

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5. CONCLUSIVE REMARKS & AUTHORIZED SIGNATORY:

After evaluation of pollution load and as per our physical verification of existing scrubber, following are our findings:

- ✓ For existing plant, scrubber is adequate to take generated emission load and also in our sample analysis report parameters are within prescribed norms as mentioned in CCA.
- ✓ The company has to maintain logbooks for the daily checking of pH for scrubbing liquid
- ✓ The company has to operate scrubber as per SOP and record for the same should be maintain.
- ✓ All reactors should be in closed loop system & all vent of reactors should be connected with scrubber
- ✓ Sampling point provided at scrubber stack but it is suggested to provide non corrosive valve instead of metal flange.

This adequacy report is prepared based on the current status of the company, status of existing scrubber found during site visit/physical verification and related data submitted by the company which is mentioned in this report

After evaluations of all details we certify that existing scrubber is adequate to take emission load (As per modification/suggestions given in this report) shall be adequate and officious to achieve the quality of process gas emission parameters mentioned in this report. However the company has to follows GPCB/CPCB/MOEF rules and regulations which may change time to time

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This certificate is subject to automatic cancellation in case of any change, in product profile/capacity, effluent treatment units/processes, quality& quantity of effluents (air + water + solid) & efficiency of EMS system/equipment's etc. any change in personal equipment or working condition should immediately be intimated to GPCB.

Authorized Signatory:

1. **Mr. A. N. Pachani**
   (B.E. Environment, P.D.I.S.)
   Environment Engineer
2. **Mr. P. B. Sabalpara**
   (B.E. Chemical)
   Chemical Engineer
3. **Mr. M. N. Khairnath**
   (B.Sc. Chemistry +M.Sc. + D.T.P.T.)
   Chemist
4. **Miss. A. S. Sojitra**
   (B.Sc. Micro, M.Sc. P.CH.)
   Microbiologist

NAME & ADDRESS OF SCHEDULE-I AUDITOR:
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Shree Swami Atmanand Sarswati Vidya Sankul
Near Kapodra Police Station, Varchha Road,
Surat – 395006, Gujarat

Date: 19/02/2020

Place: Surat

Prof. Y. S. Choupare
Principal
Shree Tapi Brahmcharyashram Sabha
College of Diploma Engineering

SHREE TAPI BRAHMCHARYASHRAM SABHA COLLEGE OF DIP. ENG.
॥ यंत्र विद्याम् उपासाहे ॥

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ABBREVIATIONS

CPCB	:	CENTRAL POLLUTION CONTROL BOARD
CCA	:	CONSOLIDATED CONSENT & AUTHORIZATION
EMS	:	ENVIRONMENT MANAGEMENT SYSTEM
EC	:	ENVIRONMENT CLEARANCE
GPCB	:	GUJARAT POLLUTION CONTROL BOARD
GIDC	:	GUJARAT INDUSTRIAL DEVELOPMENT CORPORATION
Hr	:	HOUR
KLD	:	KILO LITER PER DAY
KL	:	KILO LITER
MT	:	METRIC TON
min	:	MINUTE
PPM	:	PARTS PER MILLION
UOM	:	UNIT OF MEASUREMENT

INDEX

SR. NO.	DESCRIPTION	PAGE NO.
1	Introduction & Methodology	3
2	Details of products	4
3	Manufacturing process & material balance	5-9
4	Details of process gas scrubber	10-13
5	Conclusive Remarks & Authorised Signature	14-15

DETAILS OF TABLE

TABLE NO.	DESCRIPTION OF TABLE	PAGE NO.
1	List of Products	4
2	Details of scrubber & APCM with emission parameters	10
3	Pollution load for scrubber	13

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