

# **PRE-FEASIBILITY REPORT**

**For project of**

<b>Unsaturated Polyester Resin:</b>	<b>1000 MT/Month</b>
<b>Alkyd Resin:</b>	<b>120 MT/Month</b>
<b>Epoxy Resin:</b>	<b>50 MT/Month</b>
<b>Saturated Polyester Resin:</b>	<b>50 MT/Month</b>
<b>Vinyl Ester Resin:</b>	<b>50 MT/Month</b>

**(Under the Category 5 (f) of EIA Notification dated 14/9/2006**

**||Project Proponent ||**

**M/s. Kemz Resibond Pvt. Ltd**

**Site address:**

**Survey No: 84/1, 84/2,**

**Village –Fofadiya, Tal: Dabhoi, Dist: Vadodara-391210**

**Gujarat**

## **1.0 EXECUTIVE SUMMARY**

**M/s. Kemz Resibond Pvt. Ltd** has proposed to establish industrial unit of various types of resin at Survey No:84/1, 84/2, Village: Fofadiya, Tal: Dabhoi, Dist: Vadodara-391210.

Looking at prospective market scenario and considering the large market demand of the Resins, the company is keen to set up industrial unit with product capacity of Unsaturated Polyester Resin:1000 MT/Month. We also want to manufacture below products in the future Alkyd Resin: 120 MT/Month, Epoxy Resin: 50 MT/Month, Saturated Polyester Resin: 50 MT/Month, Vinyl Ester Resin: 50 MT/Month. The proposed site is well connected with National highway-48 whereas nearest city is Vadodara located at distance of @ 30 Km. The nearest Village is Nana Fofadiya at distance of @ 900 Meter. There is no national park, sanctuary or forest land in surrounding 10 Km radius. The project doesn't fall under CRZ boundaries.

Stack with Thermic Oil Heater will be installed for the proposed production capacity. Close Circuit System is provided with Reactors. D.G Set of 100 KVA will be used as a standby mode. The total water requirement for proposed project is 5.5 KL/Day and the waste water generation will be approximately 4.7 KL/Day. The waste water will be from processing because of some reactions are exothermic which will be evaporated hence there will be Zero discharge of industrial effluent. The details of project including site specific data, raw material consumption, product details, water consumption, socioeconomic structure etc is discussed in the upcoming sections.

The Cost of the proposed project is @ Rs. 4.7238 crores, which is inclusive of approx 5.0 Lacs for pollution control activities.

## **2.0 INTRODUCTION OF THE PROJECT/BACKGROUND INFORMATION**

**(i) Identification of Project Proponent. In case of mining project, a copy of mining lease /letter of intent should be given.**

M/s. Kemz Resibond Pvt. Ltd is a Small scale unit which is engaged in manufacturing of various types Resin.

### **Project Proponent/Promoters: (Table-1)**

<b>Sr No.</b>	<b>Name</b>	<b>Designation</b>	<b>Residential Address</b>
1	Mr. Kushank Agrawal	Director	I-203, Shivabhi Luxuria, Near Jijimata Temple, Makarpura Road, Maneja, Vadodara.
2	Dr. Ankita Agrawal	Director	I-203, Shivabhi Luxuria, Near Jijimata Temple, Makarpura Road, Maneja, Vadodara.

**Detail of Proposed Products: (Table-2)**

<b>Sr No.</b>	<b>Product Name</b>	<b>Proposed quantity (MT/Month)</b>
<b>1</b>	Unsaturated Polyester Resin	1000
<b>2</b>	Alkyd Resin	120
<b>3</b>	Epoxy Resin	50
<b>4</b>	Saturated Polyester Resin	50
<b>5</b>	Vinyl Ester Resin	50

**(ii) Brief Description of Nature of Project**

**M/s. Kemz Resibond Pvt. Ltd. being inspired by the growth and demand of synthetic resins, Industry has proposed to manufacture entire quantity of Resins (Unsaturated Polyester Resin, Alkyd Resin, Epoxy Resin, Saturated Polyester Resin, Vinyl Ester Resin). The proposed quantity of resins is as given in Table-2.**

The proposed resin manufacturing activity of M/s. Kemz Resibond Pvt. Ltd, comes under Sr. No. 5 (f) of EIA Notification, 14th September 2006 and subsequent amendments 25<sup>th</sup> June 2014 SO 1599 (E) of Ministry of Environment, Forests and Climate Change (MoEF&CC). The Proposed resin manufacturing is falls in Category 'B' and requires Environmental Clearance from State Environmental Impact Assessment Authority (SEIAA) of Gujarat State. This project is covered under Category B1 as per OM No: J-13012/12/2013-IA-II (I) Dated:24 Dec 2013.

**(iii) Need for the project and its importance to the Country and or Region:**

The UPRs are widely used in the building & construction industry. The growth of the construction industry is an important indicator of a country's development, as it creates investment opportunities across various related sectors. This growth in the construction industry is projected to propel the demand for FRP products. This would lead to growth in demand for UPRs in diverse applications. They are widely used as thermosetting resins with better product performance than other resins, such as epoxy, vinyl ester, acrylics, amides, and alkyd resins. They are easy to manufacture, cost-effective, easy to processing for conversion into a finished product, and readily modified for specific use. Buildings & construction, pipes & tanks, and automotive industries make extensive use of various UPRs, for making FRP fuel storage tanks, cooling tower components, beams, ladder rails, boat hulls, decks, and small automobile parts (both interior and exterior).

Vinyl ester is another variety of resin, whose important property is resistance to moisture, and offers commercial barrier coating. These resins are costlier than UPR. But, their corrosion resistance, mechanical, and thermal properties are much better than that of UPR. Therefore, the acceptance of epoxy, vinyl ester, acrylic, and polyurethane resins is becoming a restraint which is impacting the growth of the UPR market.

**(iv) Demand and Supply Gap:**

Rising global demand for paints & coatings in various industrial applications is one of the major drivers for growth of the resins market. Additionally, increasing demand for resins from different industries is fuelling the resins market. Unsaturated polyester resins (UPR) are known for their commercial usage in fiberglass reinforced plastics (FRP) which are utilized in building & constructions, marine, wind energy, electrical & electronics, pipes & tanks, and automotive/transportation. The unsaturated polyester resin market in India is suspended to grow substantially in the next five years. The market is mainly driven by domestic consumption basically by government, NGOs, and civic bodies. The Indian unsaturated polyester resin market showed strong growth in the last couple of years due to strong GDP growth, increased manufacturing activity, and core sector growth.

**(v) Imports v/s Indigenous Production:**

The state and pattern of growth of the economy determine the resin requirement. The requirements of resin may be fulfilled either through indigenous production and/or through imports. It is not possible for a developing country to import huge quantities of resin because of foreign exchange constraints where as it is better for a country to be self-sufficient in its resin requirements. The products manufactured will substitute the imports, saving foreign exchange to India.

**(vi) Export Possibility:**

There may be large opportunities to become a global supplier of quality resin. Also there exists abundant market opportunities in the neighboring regions of Asia, Africa and the Middle East.

**(vii) Domestic/Exports Markets:**

The finished goods will be sold in domestic market and would be largely exported to the Regulated International Market as per demand

**(viii) Employment generation (Direct & Indirect) due to the project:**

The proposed project will generate direct employment to 20 personnel.

### 3.0 PROJECT DESCRIPTION

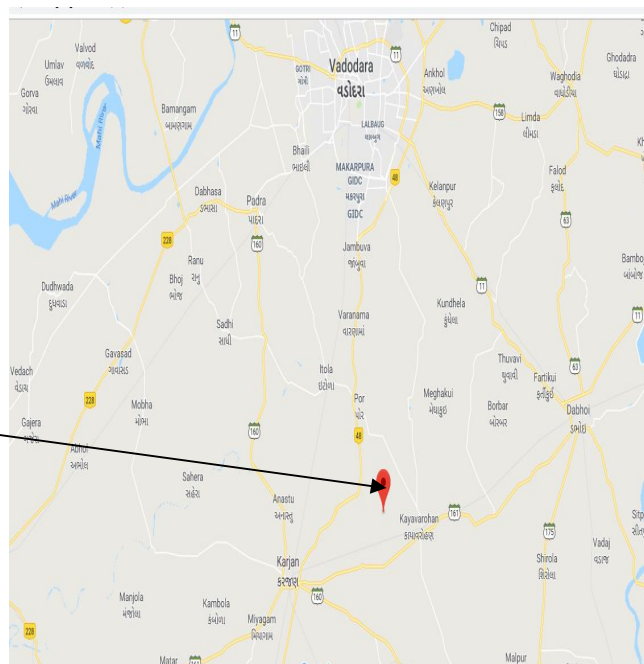
#### (i) Type of Project including interlinked and interdependent projects, if any.

M/s. Kemz Resibond Pvt. Ltd have proposed for setting up manufacturing unit of Synthetic Resins viz. Unsaturated Polyester Resin, Alkyd Resin, Epoxy Resin, Saturated Polyester Resin, Vinyl Ester Resin at Survey No:84/1, 84/2, Village: Fofadiya, Tal: Dabhoi, Dist: Vadodara-391210

#### (ii) Location (map showing general location, specific location, and project boundary & project site layout) with coordinates.

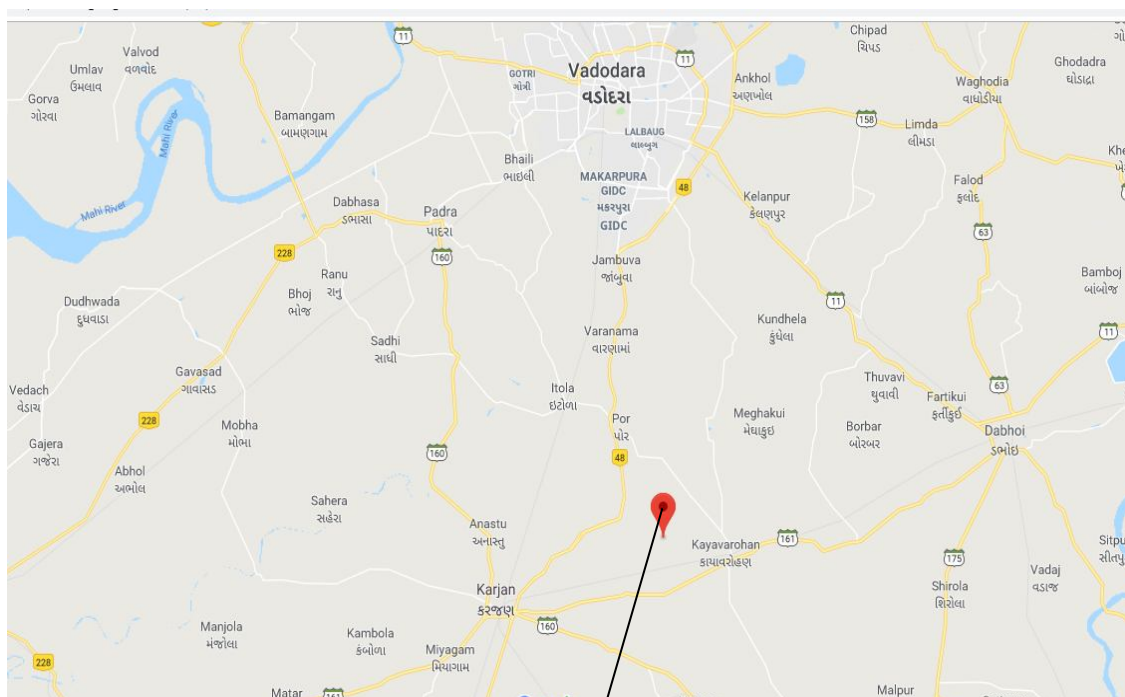
M/s **Kemz Resibond Pvt. Ltd** is located Survey No:84/1, 84/2, Village: Fofadiya, Tal: Dabhoi, Dist: Vadodara-391210. The site falls 22°05'08.47" N, 73°12'47.77" E, 22°05'08.30" N, 73°12'49.33" E, 22°05'03.41" N, 73°12'49.43" E, 22°05'03.37" N, 73°12'47.80" E

Location map of the project is as under: (figure-1)

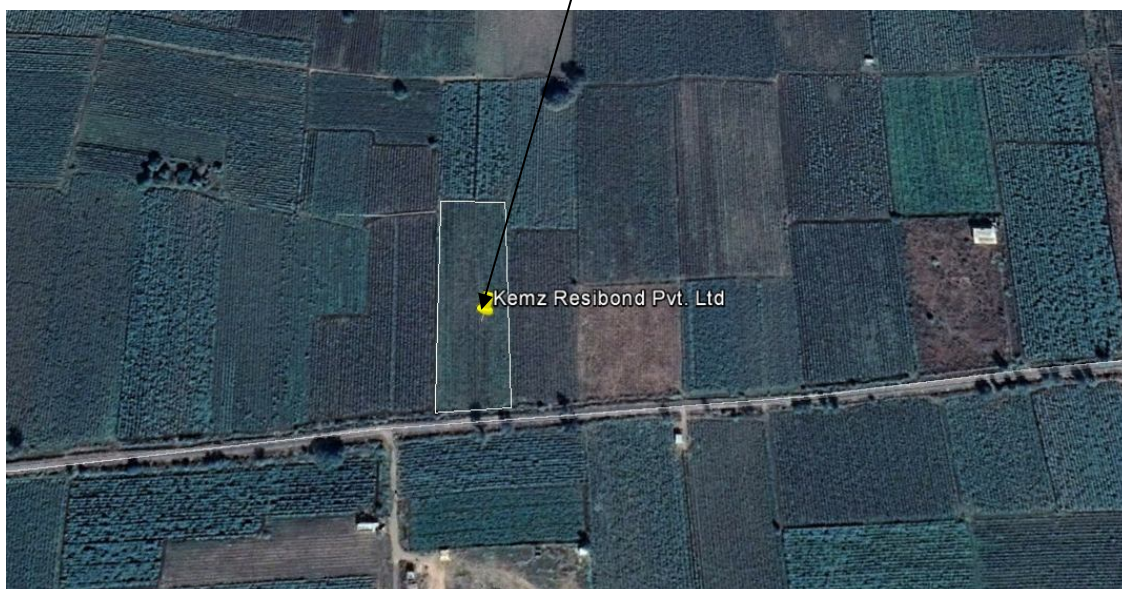




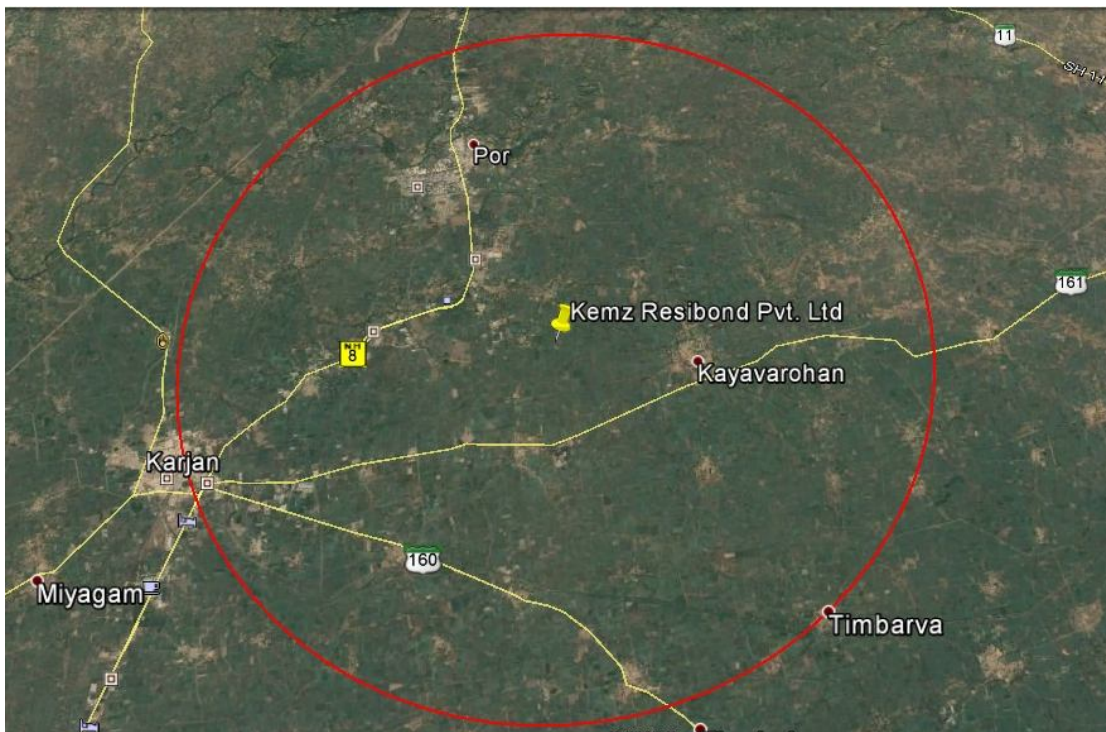
**(Figure 1)**



**(Figure 2)**



Location map (showing area within 10 km radius) **(figure-3)**



The project site is located at Survey No:84/1, 84/2, Village: Fofadiya, Tal: Dabhoi, Dist: Vadodara-391210 and surrounded by industrial units. Indigenous raw materials & Chemicals are available from local market. Due to Developed location, proposed resin activity will be facilitated with good infrastructure and other facilities such as availability of skilled as well as unskilled workforce, contractors, superior communication facilities, transportation facilities etc. Nearest railway station is located at a distance of @ 12 km in SW direction at Karjan whereas Nana Fofadiya is the nearest village located at @ 900 m distance. Near town & city is Vadodara which is located at 22 Km whereas Nearest Air port (Vadodara) is located at 30 km in North direction.

**(iii) Details of alternate sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted.**

During our search of land for Project , One land at survey no. 672 , parikha village, dabhoi taluka, but there is GOUGAR land between survey no. 672 and road. So it was left and after that we have also find land survey no. 627, parikha village, dabhoi taluka. during search 1951, it was found that land was given for some trust by their anchesters. so it was again dropped. Finally we have selected this land which is fulfilling our all criteria such as No nearby eco-sensitive area is present , No nearby huminity is affected due to the more distance between plant and village. All the facility related infrastructure, power, utilities etc are available.

**(iv) Size and Magnitude of Operation:**

The manufacturing of different type of resins involves the following:

**(Table-3)**

<b>Sr No.</b>	<b>Product Name</b>	<b>Proposed quantity</b>
<b>1</b>	Unsaturated Polyester Resin	1000
<b>2</b>	Alkyd Resin	120
<b>3</b>	Epoxy Resin	50
<b>4</b>	Saturated Polyester Resin	50
<b>5</b>	Vinyl Ester Resin	50

**(v) Project description with process details (a schematic diagram/flow chart showing the project layout, components of the project etc. should be given)**

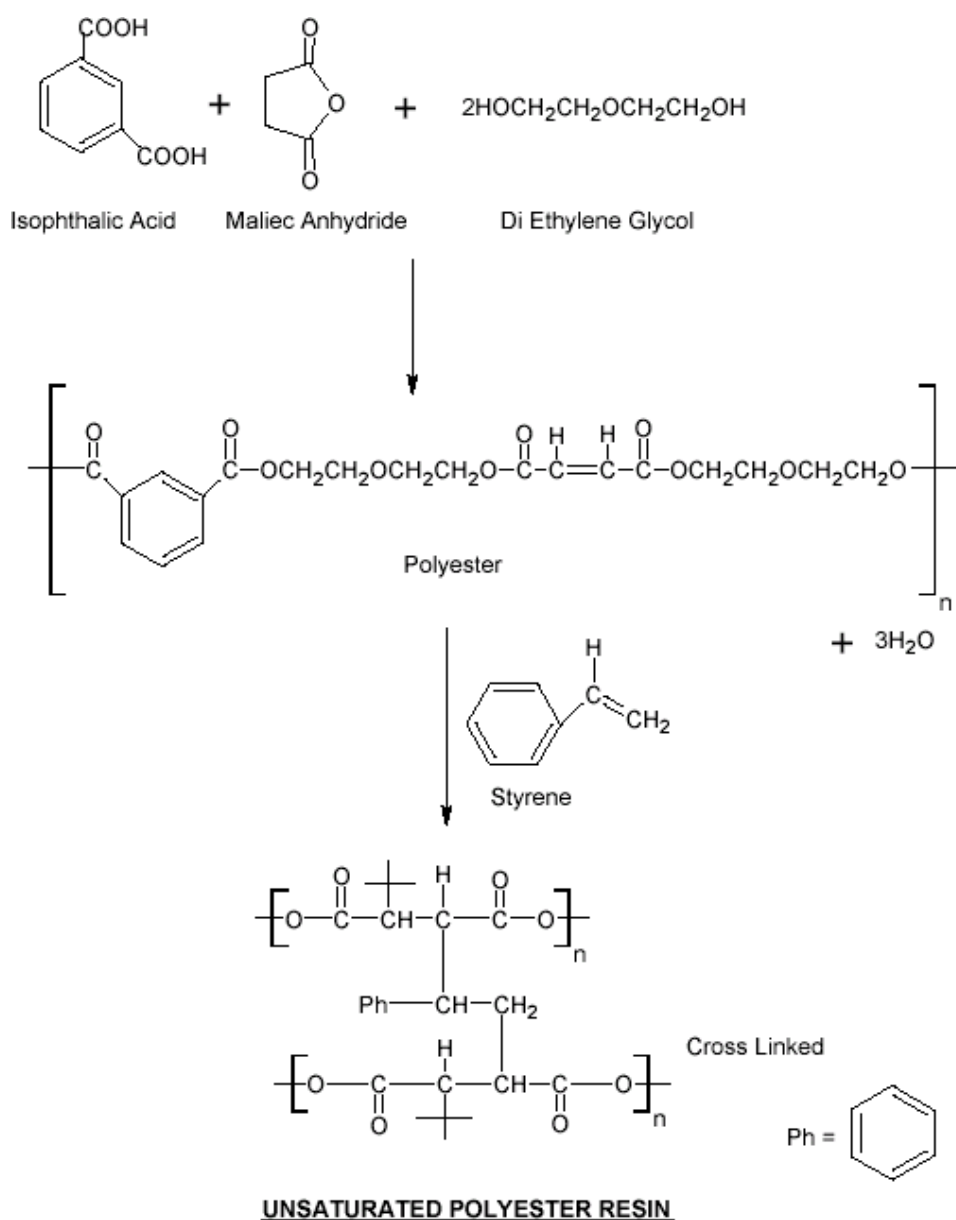
The proposed synthetic resins manufacturing processes are summarized as below

**(1) UNSATURATED POLYESTER RESIN:**

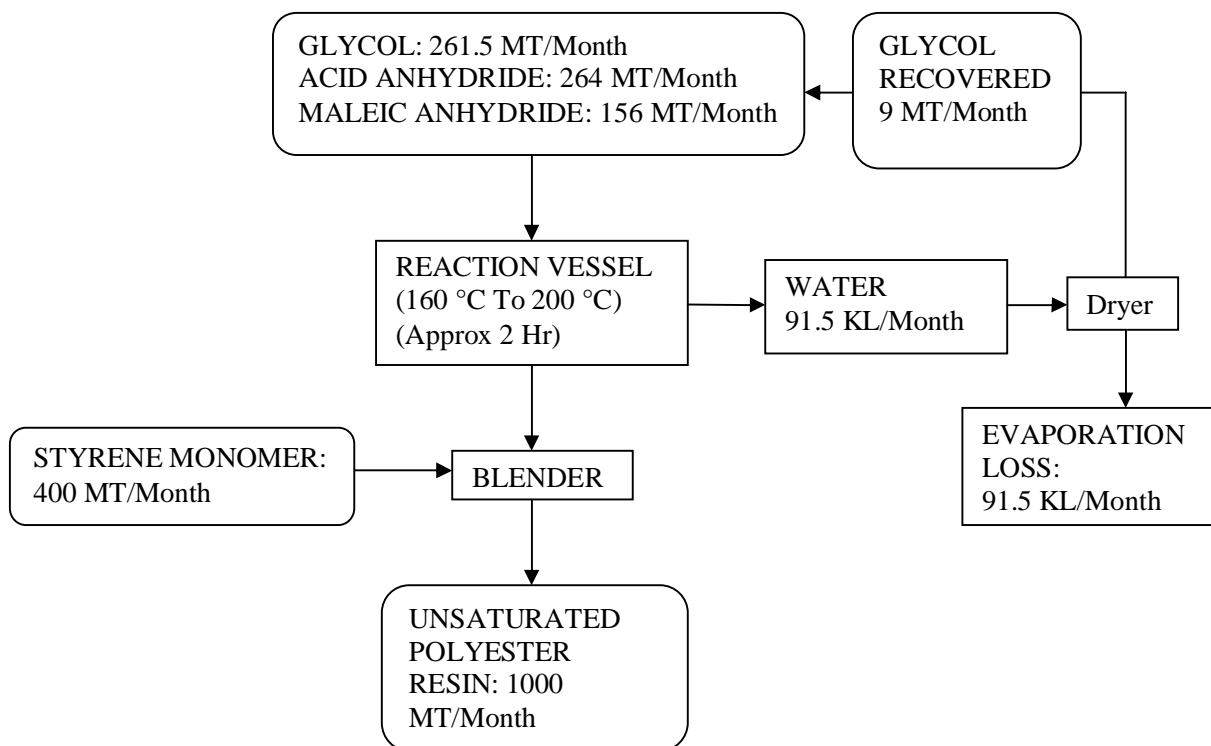
- In SS reactor charge Dihydroxy glycol and Dicarboxylic acids. Raise Temperature up to 160 °C with continuous agitation. Reflux at 160 °C in about 2 hours (approx). Remove the reaction water continuously to allow temperature to rise to 220 °C. Check the sample for acid value.
- Start vacuum distillation for removing access water/volatiles from reactor. Stop vacuum distraction and start cooling. Add inhibitor. Further cool to 160 °C.
- Discharge liquid resin from reactor into blender containing styrene monomer. During discharge resin temperature in blender should not increase 70°C. Circulate the water in jacket of blender to reduce blender temperature. Cool to room temperature. Testing like viscosity, gel time etc is carried out. Adjust if necessary.
- Weighted & packed in drums or carboys



## Reaction Chemistry



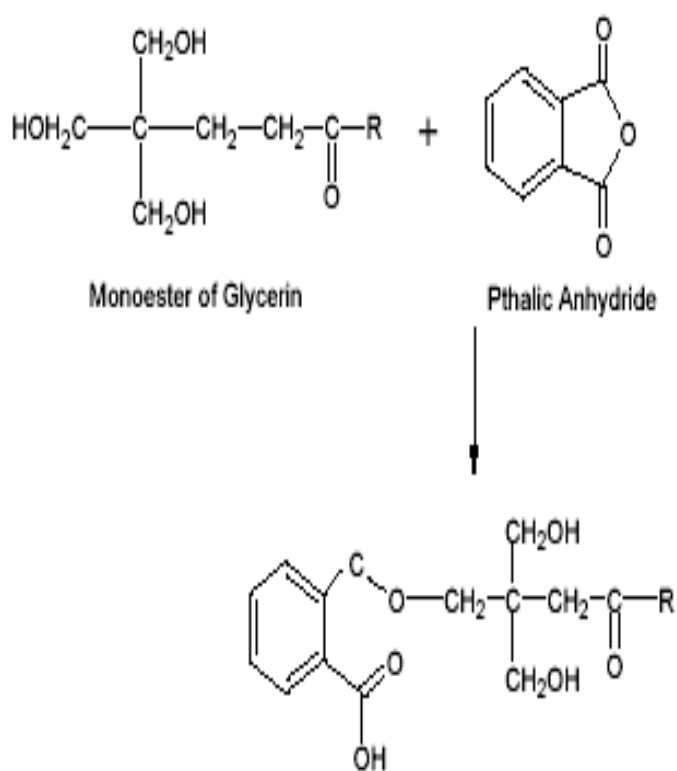
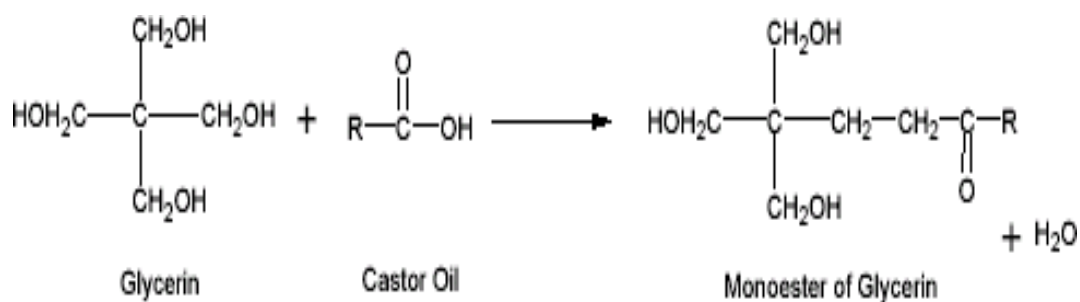
### Process Flow Chart with Material Balance



### (2) ALKYD RESIN:

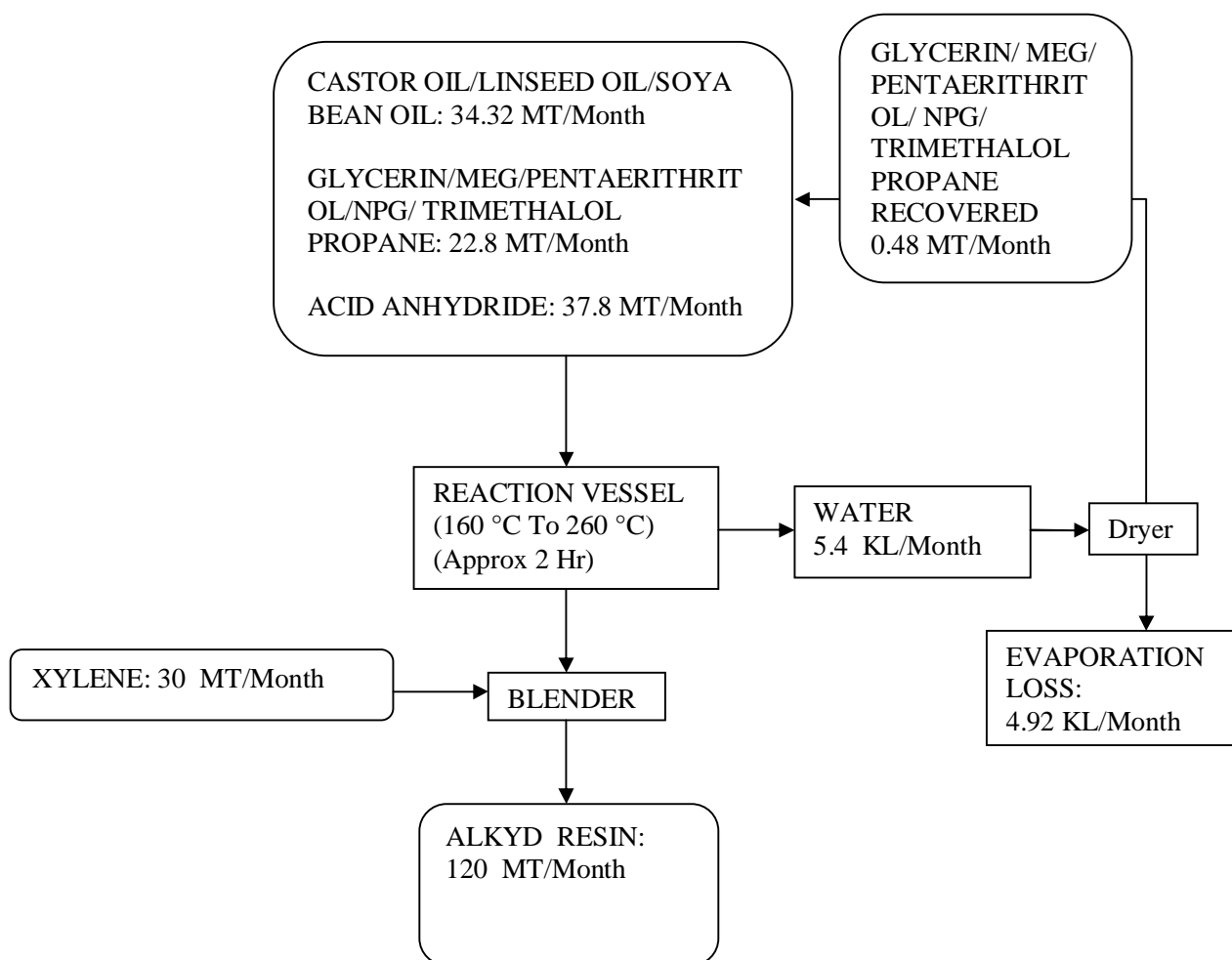
- Charge Caster oil/ Linseed oil/ Soya bean oil and Glycerin/ MEG/ pentaerithritol/ Neo penta glycol/ trimethalol, along with Pthaliec anhydride/ Maliec anhydride/adipic acid/rosin into the Reactor.
- Raise Temperature up to 160°C with continuous agitation. Reflux at 16°C in about 2 hours (approx). Remove the reaction water continuously to allow temperature to rise to 260°C. Check the sample for acid value.
- Start vacuum distillation for removing access water/volatiles from reactor.
- Stop vacuum distraction and start cooling. Add inhibitor. Further cool to 160°C.
- Discharge solid resin from reactor into blender containing xylene. Circulate the water in jacket of blender to reduce blender temperature. Cool to room temperature.
- Weighted & packed in drums or carboys.

## Reaction Chemistry



## ALKYD RESIN

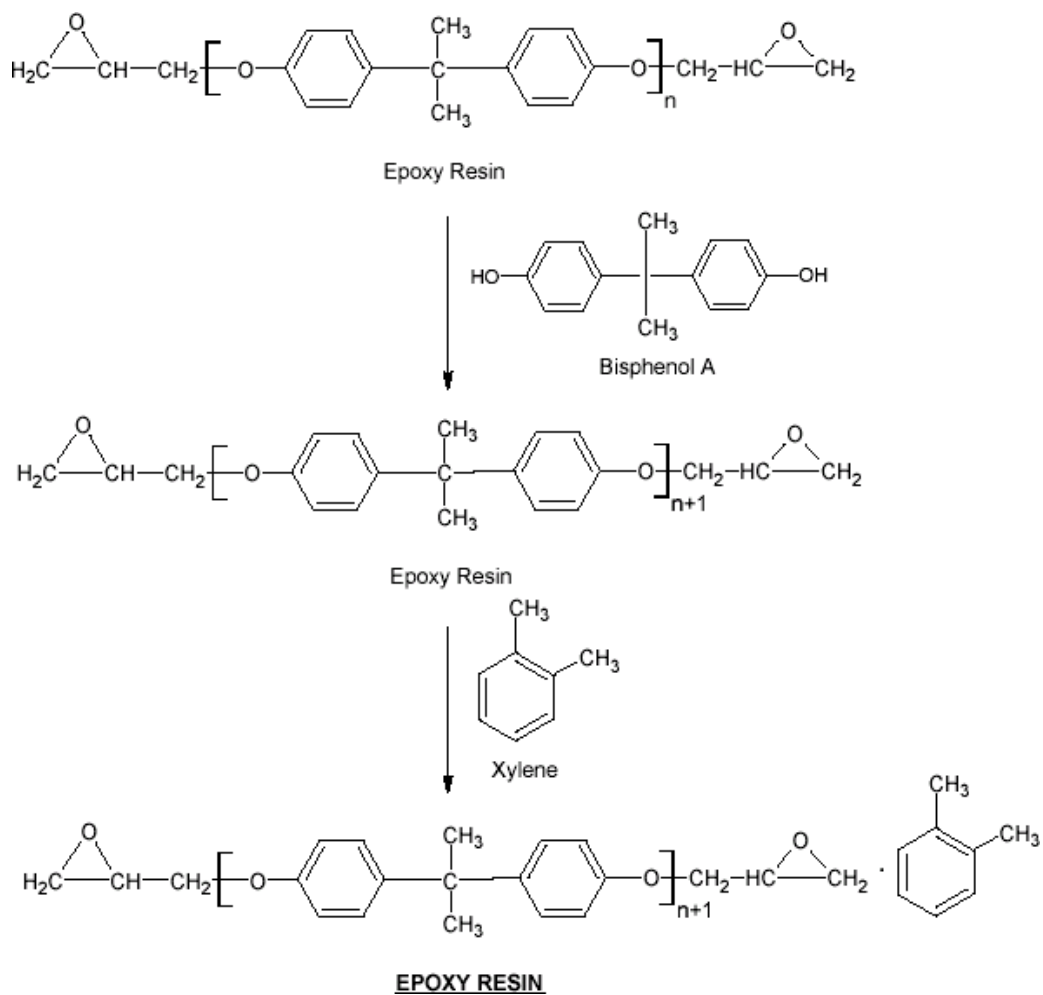
### Process Flow Chart with Material Balance



### (3) Epoxy Resin

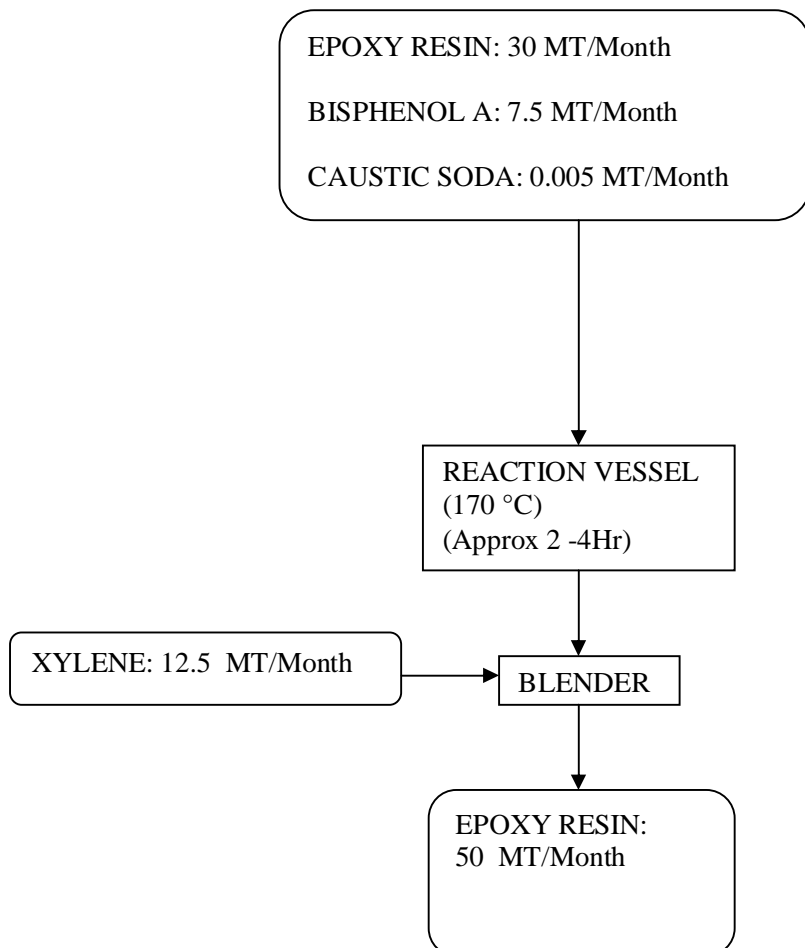
- Charge Epoxy resin and Bisphenol A in reactor. Heat to 170°C and maintain
- temperature for 2-4 hours. Check epoxy equivalent weight. Cool it to 80°C. Dilute it in xylene and cool to room temperature. Testing will be carried out and packed in drums and carboys.

## Reaction Chemistry





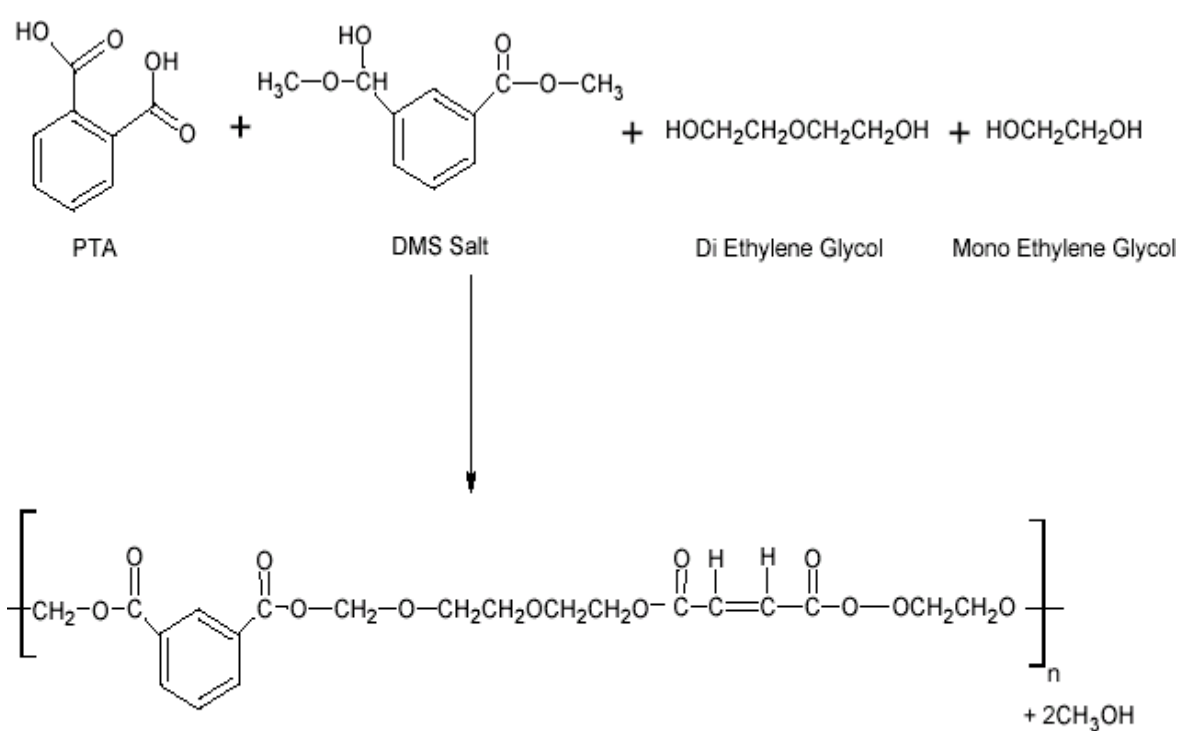
**Process Flow Chart with Material Balance**



**(4) Saturated Polyester Resin**

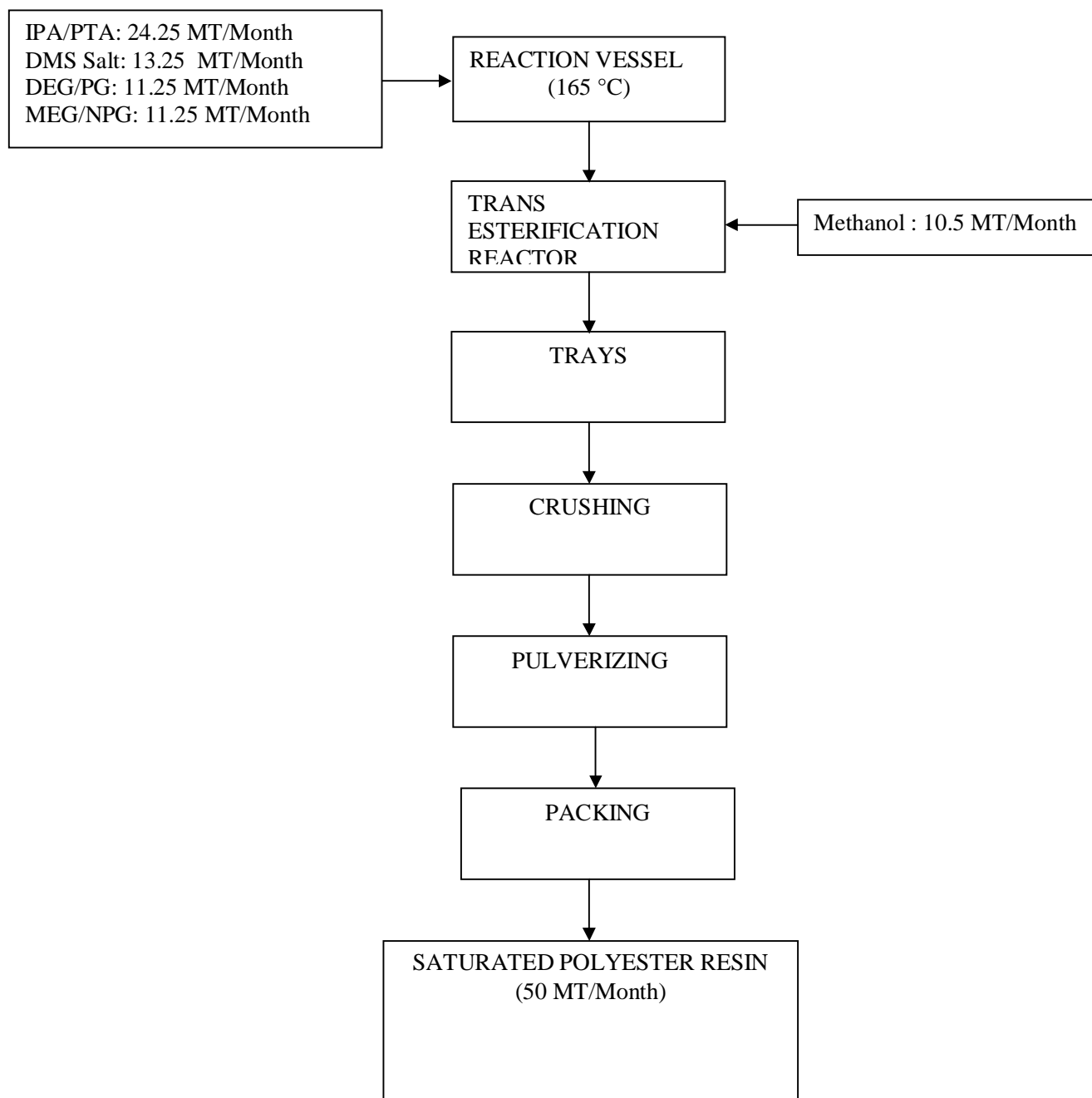
- Charge Isophthalic acid/purified terephthalic acid and 5 sodium dimethylisophthalate, along with di-ethylene glycol/polyethylene glycol and mono ethylene glycol with di butyl tin oxide in reactor.
- The mass will be heated to 165°C where methanol/water will start coming out and mass viscosity will be start increasing. The methanol/water will be condensed and removed. The mass heated up to 200°C and vacuum is applied and excess glycols and water will be removed. The polymer will be discharged in trays.
- Crushed, pulverized and packed in bags.

## Reaction Chemistry



### SATURATED POLYESTER RESIN

**Process Flow Chart with Material Balance**



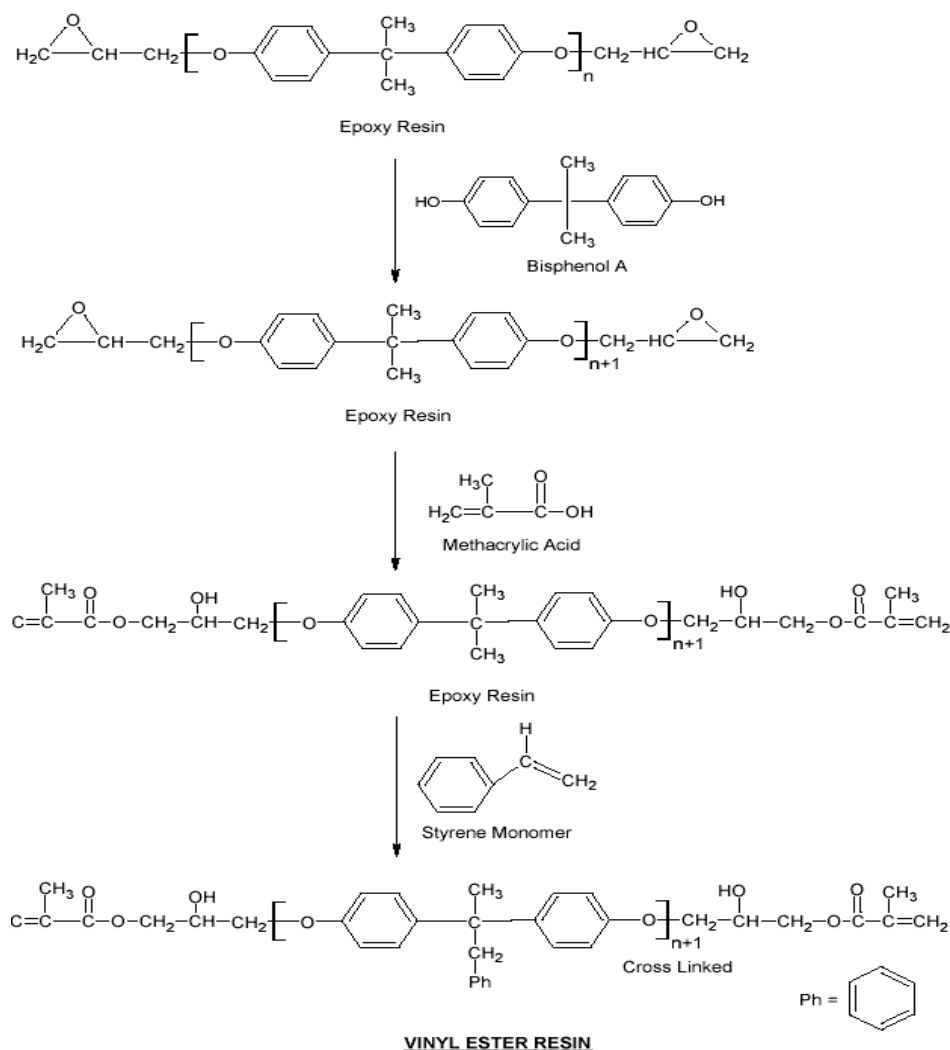
### (5) Vinyl Ester Resin

Charge Epoxy resin and Bisphenol A in reactor. Heat to 170 °C and maintain temperature for 2-4 hours. Check epoxy equivalent weight. Cool it to 100 °C. Add Methacrylic acid and additives in reactor. Maintain the temperature for 4-6 hours. Cool to 80 °C.

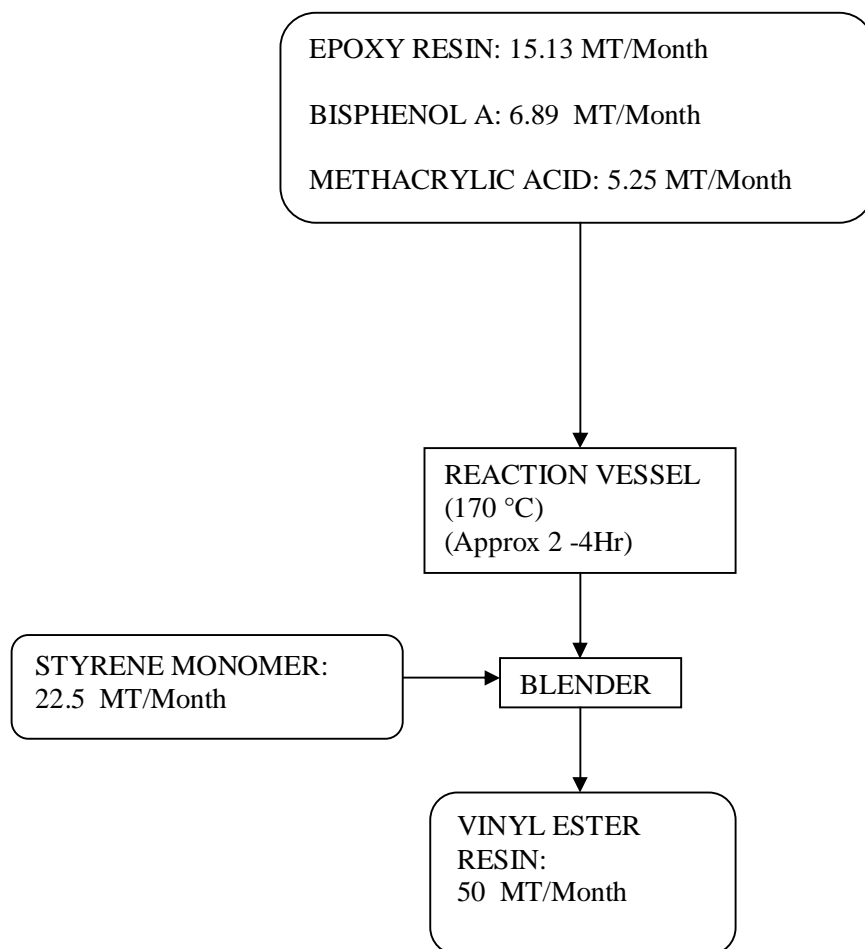
Discharge solid resin from reactor into blender containing styrene monomer. During discharge resin temperature in blender should not increase 70 °C. Circulate the water in jacket of blender to reduce blender temperature. Cool to room temperature. Testing like viscosity, gel time etc is carried out. Adjust if necessary.

Weighted & packed in drums or carboys

#### Reaction Chemistry



**Process Flow Chart with Material Balance**





**(vi) Raw material required along with estimated quantity, likely source, marketing area of final products/s, Mode of transport of raw Material and Finished Product.**

The raw materials with quantity and mode of transport details are given in **Table 4.**

Product	Raw Materials	Qty. MT/Month
<b>UNSATURATED POLYESTER RESIN</b>	Glycol (MEG/DEG/PG/NPG)	271
	Acid Anhydride (PA/IPA/PTA/AA)	264
	Maleic Anhydride (MA)	156
	Styrene Monomer	400
<b>ALKYD RESIN</b>	Castor Oil/Linseed Oil/ Soya bean Oil	34.32
	Glycerin/MEG/Pentaerithritol /NPG/ Trimethalol Propane	23.28
	Acid Anhydride (PA/MA/AA/Rosin)	37.8
	Xylene	30
<b>SATURATED POLYESTER RESIN</b>	Acid Anhydride (IPA/PTA)	24.5
	5 Sodium Di Methyl SulfoIsophate (DMS Salt)	13.5
	Glycol( MEG/DEG/PG/NPG)	23
	Di Butyl Tin Oxide	0.5
<b>EPOXY RESIN</b>	Epoxy Resin	30
	Bisphenol-A	7.5
	Caustic Soda	0.005
	Xylene	12.5
<b>VINYL ESTER RESIN</b>	Epoxy Resin	15
	Bisphenol A	7
	Methacrylic Acid	5.5
	Styrene Monomer	22.5

**(vii) Resource optimization/recycling and reuse envisaged in the project, if any, should be briefly outlined.**

If any Process Waste (Resin residue) generates, it will be reused back in process so far as possible. Non reusable resin residue will be disposed off to CHWIF site.

**(viii) Availability of water its source, energy/power requirement and source should be given.**

**Resource Requirements****Manpower Requirement**

The total requirement of manpower for the proposed resin manufacturing plant is estimated at around 20 numbers.

**Energy/power Requirements**

- Total connected load is 125 KW which is well enough to carry out proposed resin manufacturing activity.
- Electricity requirement is met through existing grid supply by MGVL
- Incase of power failure, Standby DG Sets of 100 KVA capacity is available.

**Fuel**

- LDO will be used as fuel in Thermic Oil Heater with quantity 44 Lit/Hr. Electricity will be used in Reactors.
- Diesel (10 Lit/Hr) will be used to run the D.G.set (100 KVA), if needed.

**Water Requirement**

-Total water requirement will be 5.5 KL/day. Bore well will be used as a water source. Out of 5.5 KL/day, 0.5 KL/day water will be used in cooling, 3.0 KL/day water will be used in Gardening/green belt development whereas 2.0 KL/day water will be used in domestic purpose. There is no use of any water in resin manufacturing process. Water breakup detail is given as below

**Table 6. Water breakup detail**

Sr No	Usage	Water consumption (KL/Day)	Waste water generation (KL/day)	Disposal of waste water
A	Domestic	2	1.2	To soak pit /septic tank system
B	Gardening	3	--	--
C	Industrial			To Primary ETP followed by Evaporation
	Processing	0	3.5	
	Cooling	0.5	0	
	<b>Total industrial (1+2)</b>	<b>0.5</b>	<b>3.5</b>	
	<b>Total (A+B+C)</b>	<b>5.5</b>	<b>4.7</b>	--

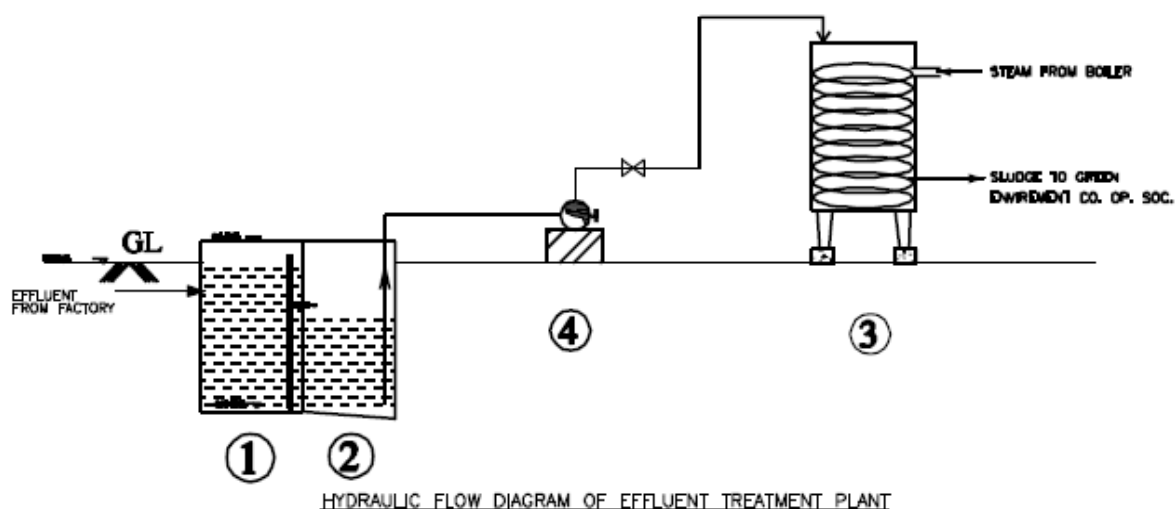
**(ix) Quantity of wastes to be generated (liquid and solid) and scheme for their management/disposal.**

**Water Environment & management**

From Processing @ 3.5 KL/Day effluent will generate. Industrial effluent will be treated in ETP having treatment units like collection cum neutralization tank and finally evaporated in evaporator. Unit will achieve Zero Discharge by evaporated in evaporator.

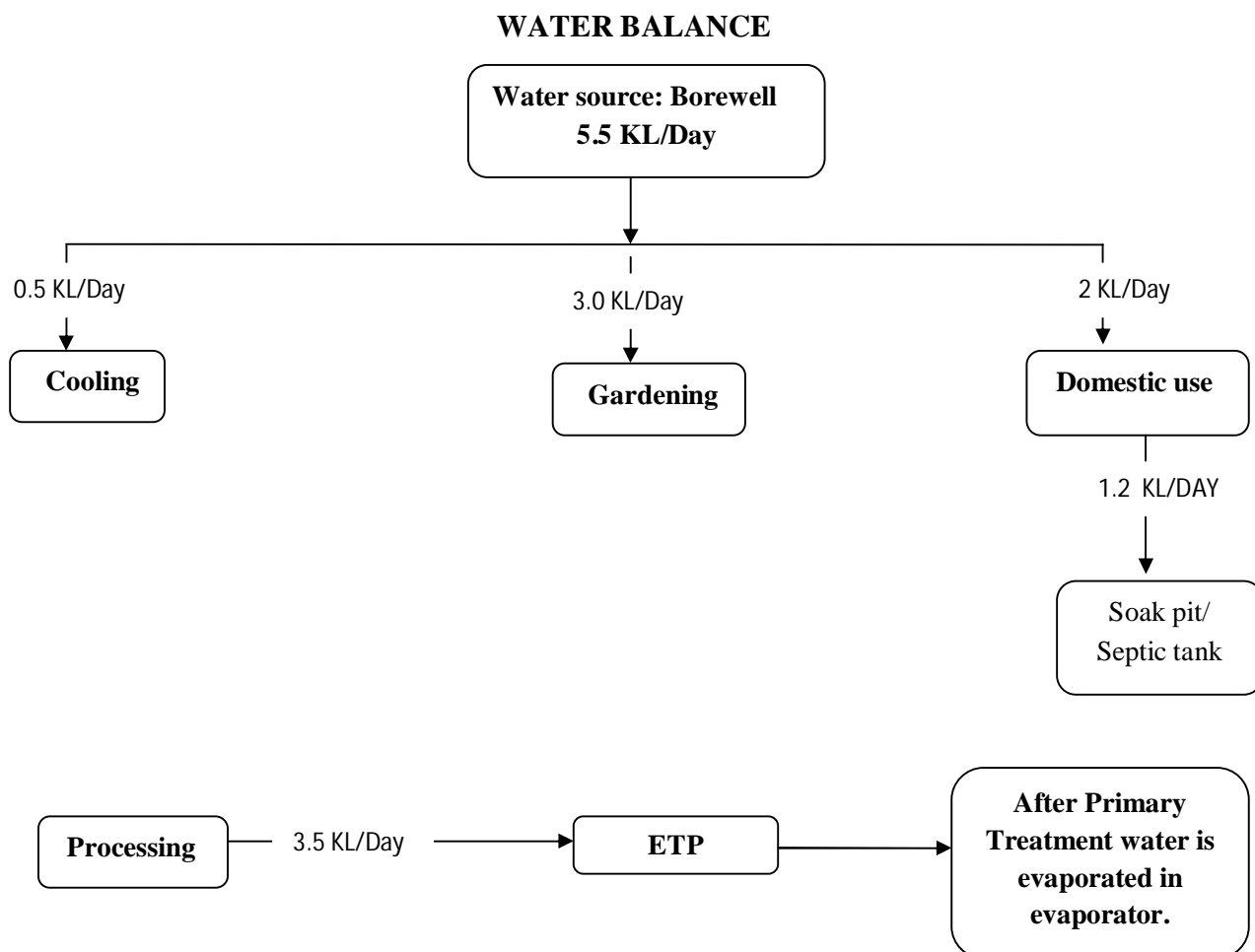
### Details of Effluent Treatment plant

Industrial effluent will be treated in an Effluent Treatment Plant (ETP) having evaporation system. Industrial effluent generated due to various industrial process/activity will be collected in collection cum neutralization tank for the collection of effluent & neutralize the effluent. pH which is generally 7 will be checked. From holding tank, the effluent will be pumped in to evaporation system to evaporate the effluent. The sludge/Residue remaining after evaporation will be collected in plastic (HDPE) bags and stored. This will ultimately be sent to the land fill (TSDF) site for the ultimate disposal.



**Table-7**                      **DETAILS OF ETP UNITS**

Sr. NO.	DESCRIPTION	SIZE
1	Collection cum NeautrilizationTank	1.5X1.5 x 2.0 (+0.5 FB)
2	Evaporation system	Capacity :300 liter/hour



### Air Environment & management

- Electricity will be used as fuel in Reactors .There will be no process emission from resin manufacturing as reactors will be with closed system.
- LDO will be used as a fuel in Thermic Oil Heater.
- Standby DG set will be intermittent source of flue gas emission with use of HSD (10 Lit/Hr) & operated only during power failure.

**Table 8: Details of Stack/vent**

Sr No.	Stack identification	Fuel & quantity	Stack height
1	Thermic Oil Heater	LDO (44 Lit/Hr)	10 Meter
2	Reactors	Electricity	Close Circuit System
3	D.G. Set (100 KVA) (Stand by Use)	HSD (10 Lit/Hr)	Acoustic Enclosure

**Hazardous Waste Management**

The proposed plant will generate the following hazardous wastes

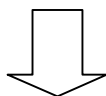
**Table 9:Details of Hazardous waste**

Sr No.	Name of the waste	Source	Proposed quantity per (MT/Year)	Mode of Disposal
1	Process Waste/Residue	Process	35	Reuse and Non-reusable disposed to CHWIF Site.
2	ETP Sludge/Evaporation Residue	ETP/ Evaporator	0.2	TSDf Site
3	Used Oil	Lubrication/ D.G.set	0.05	Reuse as Lubricant within premises.
4	Discarded drums/bags	Stores	15 HDPE Drums / 500 Bags	Sold To Recycler



**(x) Schematic representations of the feasibility drawing which give information of EIA purpose**

Application in Form I along with Pre-feasibility Report, relevant documents to State Level Expert Appraisal Committee (SEAC) **as per Sr. No. 5 (f) of EIA Notification, 14th September 2006 and subsequent amendments 25<sup>th</sup> June 2014 SO 1599 (E) of Ministry of Environment, Forests and Climate Change (MoEF&CC)**



**Decision of State Level Expert Appraisal committee (SEAC)**

#### **4.0 SITE ANALYSIS**

##### **(i) Connectivity**

The Unit is located at Survey No:84/1, 84/2, Village: Fofadiya, Tal: Dabhoi, Dist: Vadodara-391110. The project site is easily approachable by NH 48 (located at 3.8 Km in West direction from the same. The nearest railway station is Karjan Railway station is at 12 km in SW direction. Hence no new transportation Infrastructure / alteration of existing routes will be required. Existing transport route is already available. No closure or diversion is required for traffic movement

- **Road Connectivity**

NH 48 is located at around 3.8 Km in West direction from the project site.

- **Rail**

Nearest railway station is located at a distance of @ 12 Km in SW direction at Karjan Railway station

- **Airport**

The nearest airport is Vadodara airport at approximately @ 30 km from the site in North direction.

- **Communication**

The site has access of telephone, internet and mobile connectivity.

##### **(ii) Land Form, Land use and Land ownership**

The proposed resin activity will be carried out at Survey No:84/1, 84/2, Village: Fofadiya, Tal: Dabhoi, Dist: Vadodara-391210 which having total area 7551.74 m<sup>2</sup>. The land use for proposed resin manufacturing is industrial. Manufacturing unit land is Private land.

##### **(iii) Topography (along with map)**

It is a flat land and the average elevation is 440 m above MSL. Fig - 3 shows the 10 km radius around the plant site. The proposed project area comes in Seismic Zone-III which is classified as having a fairly medium probability of earthquake shocks. The latitude and longitude of project site are (A) 22°05'08.47" N, 73°12'47.77" E

(B) 22°05'08.30" N, 73°12'49.33" E (C) 22°05'03.41" N, 73°12'49.43" E

(D) 22°05'03.37" N, 73°12'47.80" E

**(iv) Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ), shortest distances from the periphery of the project to periphery of the forests, national park, wild life sanctuary, eco sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case of notified industrial area, a copy of the Gazette notification should be industrial area, a copy of the Gazette notification should be given.**

The plot is non agricultural land and industrial activity is carried out for resin manufacturing. There are no eco sensitive areas such as forest, national park, wildlife sanctuary, biosphere reserves and wildlife corridors etc. located within 10 km radius of project area.

**(v) Existing Infrastructure**

Total plot area is 7551.74 m<sup>2</sup>, No existing infrastructure is available and no construction work is going on.

**(vi) Soil Classification**

The Soils of Vadodara district can be broadly classified into three groups. They are black soils, alluvial soils and hilly soils.

**(vii) Climatic data from Secondary Sources:**

The unit is located in Vadodara District. The summer season is quite hot and long, but the winter gets cold and dry. During the monsoon season there is a good amount of rainfall as well. The summer season starts in the month of March and lasts till June. The weather conditions are hot for most of this season and it gets the hottest during the month of May. Temperatures range from a minimum of 23° Celsius and can rise up to a maximum of 36°Celsius. The temperatures rise much higher than 40° Celsius during certain years. The monsoon season starts in mid June and ends in the month of September. The city gets heavy rainfall from the South West Monsoon. These monsoons cause the humidity to rise and conditions for travellers might be uncomfortable during this time. Torrential rainfall is interspersed with dry periods. The winter season is spread across November to February. Due to the winds that blow in from the north, January is the coldest month. The temperature ranges from a minimum of 15°Celsius to a maximum of 30°Celsius. The best time to visit Vadodara is from October to February as the remaining months the weather is quite hot and scorching.

**(viii) Social Infrastructure Available**

Social Infrastructure facilities (both public and private) such as schools, hospitals, community halls, markets, colleges, railway station and religious buildings are located with 10 km radius from the site.

## **5.0 PLANNING BRIEF**

**(i) Planning Concept (type of industries, facilities, transportation etc.)**

**Town and country Planning/Development authority Classification**

The proposed resin production plant which is located at Survey No:84/1, 84/2, Village: Fofadiya, Tal: Dabhoi, Dist: Vadodara-391210 established in an area of @7551.54 m<sup>2</sup>. Transportation of materials will be mainly carry out on road and infrastructure which are already available.

**(ii) Population Projection**

The project will employ most of the workers @ 20 Nos. of workers during operation stage.

**LAND USE PLANNING (BREAKUP ALONG WITH GREENBELT ETC)**

The occupied plot no. 84/1, 84/2 having total area 7551.74 m<sup>2</sup> . Land use breakup is given in following table:

**Table 8.**

Sr no.	Land use	Area (square meter)
1	Built up area	1604
2	Parking Area	995
3	Open Area	835
4	Garden/green belt area	832
5	Worker Hosing Colony	3000
4	Internal Roads	285.74
	Total area	7551.74

**(iii) Assessment of Infrastructure Demand (Physical & Social)**

The infrastructure facility is already available which shall be used and properly maintained. Proposed resin manufacturing activity will provide employment for around 20 persons directly from local area.

**(iv) Amenities/Facilities**

Basic amenities/facilities is available as road, power supply, communication, water supply, medical and health etc. Site is well connected with road and other infrastructure facilities.

**6.0 PROPOSED INFRASTRUCTURE**

**(i) Industrial Area (Processing Area)**

Industry will establish plant in @ 7551.54 m<sup>2</sup> area.

**(ii) Resident Area (Non Processing Area)**

No residential area is proposed.

**(iii) Green Belt**

Greenbelt will be developed inside the plant boundary as per statutory norms.

**(iv) Social Infrastructure**

Existing infrastructure will be maintained. Direct & Indirect employment opportunity, sales tax, road tax to state government will be facilitated by project.

**(v) Connectivity (Traffic and transportation Road/Rail/Metro/Water ways etc.)**

Listed connectivity is already available from nearby area. No additional connectivity is required.

**(vi) Drinking Water Management (Source & supply of water)**

Drinking water shall be made available all the times to workers. The Water will be sourced from Bore well.

**(vii) Sewerage System**

Domestic effluent/ sewage of 1.2 KLD will goes to soak pit.

**(viii) Industrial Waste Management**

Effluent is collected, Neutralized and then Evaporated. Thus unit will maintain zero discharge.

**(ix) Solid Waste Management**

ETP sludge/evaporation residue generated from waste water treatment will be disposed off to TSDF site whereas Resin waste/process residue will be reused so far as possible and non reusable will be disposed off to CHWIF site. Discarded drums/ containers/ bags will sent to Authorized Recyclers whereas Used/spent oil will be reuse as lubricant in plant & machinery. Adequate temporary storage facility will be provided for each kind of waste.

**(x) Power Requirement**

Total connected load is 125 KW from Madhya Gujarat Vij Company Ltd. which is well enough to carry out proposed resin manufacturing activity. D.G Set (100 KVA) will be used as a stand by mode during power failure.

**7.0 REHABILITATION & RESETTLEMENT (R&R PLAN)**

**(Policy to adopted (Central/State) in respect of the project affected person including home oustees, land oustee and landless labour (A brief outline to be given).**

The proposed project does not involve any rehabilitation and resettlement

**8.0 PROJECT SCHEDULE AND COST ESTIMATES**

**(i) (Likely date of start of construction and likely date of completion (time schedule for the project to be given)**

Project will commenced within three month after getting Environmental Clearance.

**(ii) Estimated project cost along with analysis in terms of economic viability of the project**

The estimated capital cost of entire project is Rs. 4.7238 crores.



## **9.0 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)**

### **(i) Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any, in the area.**

Based on the growing demand in the state, the proximity of the project location to this market is an advantage with respect to reduction in Freight of resin to these markets & in nearby towns. The State Government will get revenue in the form land tax/surface rent; Sales tax/VAT, income tax etc. will be addition.