PROJECT REPORT

Of

ALKYD RESIN

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding **Alkyd Resin**.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]

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PROJECT AT A GLANCE

1	Name of the Entreprenuer		xxxxxxxxxx	
2	Constitution (legal Status)		xxxxxxxxxx	
3	Father / Spouse Name		xxxxxxxxxxxx	
4	Unit Address	:	xxxxxxxxxxxxxxxxxxxxxxx	
			District : xxxxxxx	
			Pin: xxxxxxx	State: xxxxxxxxxx
			Mobile xxxxxxx	
5	Product and By Product	:	**ALKYD RESIN**	
6	Name of the project / business activity proposed :		**ALKYD RESIN MANUFACTURING UNIT**	
7	Cost of Project	:	Rs.36.65 Lakhs	
8	Means of Finance			
	Term Loan		Rs.24 Lakhs	
	Own Capital		Rs.3.65 Lakhs	
	Working capital		Rs.9 Lakhs	
9	Debt Service Coverage Ratio	:	2.13	
10	Pay Back Period	:	5	Years
11	Project Implementation Period	:	5-6	Months
12	Break Even Point	:	25%	
13	Employment	:	9	Persons
14	Power Requirement	:	30.00	HP
15	Major Raw materials	:	Linseed oil, Penta Erythriol, Pthalic anhydride, Litharge, Xylene, Barrel	
16	Estimated Annual Sales Turnover (Max Capacity)	:	404.44	Lakhs
17	Detailed Cost of Project & Means of Finance			

COST OF PROJECT

(Rs. In Lakhs)

Particulars	Amount
Land	Own/Rented
Plant & Machinery	24.65
Furniture & Fixtures	2.00
Working Capital	10.00
Total	**36.65**

MEANS OF FINANCE

Particulars	Amount
Own Contribution	3.65
Working Capital(Finance)	9.00
Term Loan	24.00
Total	**36.65**

ALKYD RESIN

Introduction: Alkyd resins are any of a large group of thermoset resins that are essentially Polyesters made by heating polyhydric alcohol with polybasic acids or their anhydride and used chiefly in making protective coatings with good weathering properties. These resins are useful as film forming agents in paint, varnished and enamels & as thermosetting plastics that can be moulded into solid objects. Hence, alkyd resins are one of the important ingredients in the synthetic paint industry. The paint factories in India currently produce a variety of paint which can broadly be categorized as synthetic enamel. This type of paint is used for the exclusive use in internal / exterior walls and ceilings of architecture. This type consists of alkyd based products which are used as metallic & wood paints, varnishes & lacquers, antirust, etc.

Market Potential: Alkyd resin, which is used in the production of a wide variety of paints, is supplied to the Indian market both from domestic production and import. As Indian industries are producing paint of amount approximately Rs.15000 crores which needs Alkyd Resin of amount near

about Rs. 3000 crores. Due to construction of apartments, buildings, roads there is huge demand of paint in this sector. Increased demand of paint will need the basic raw material of paint i.e. alkyd resin simultaneously.

Raw Material: Major raw materials are as follows:

1. Linseed oil
2. Penta Erythriol
3. Pthalic anhydride
4. Litharge
5. Xylene
6. Barrel

Machinery Requirement: Major machinery & equipments are as follows:

S No.	Description	Qty.	Amount(Rs.)
1	Reactor	1	750000
2	Condenser(main)	1	200000
3	Separator	1	75000
4	Blender	1	75000
5	Vent Condenser	1	75000
6	Addition tank	1	75000
7	Resin pump(Reactor to blender)	1	25000
8	Resin pump (Blender to filter)	1	25000
9	Resin filter(Sparkler)	1	75000
10	Stand by Electric Genrator	1	225000
11	Thermic fluid heating system	1	275000
12	Oil Pump	1	25000
13	Weighing scale	1	15000
14	Finished product tank	1	50000
15	Water Hydrant	1	100000
16	Cooling tower & pump	1	300000
17	Other equipments & hand tools	Ls	100000
	Total Amount		**2465000**

Manufacturing Process: Two processes are used for the production of alkyd resins, namely the solvent and the fusion process. The solvent process uses a small amount of solvent, 5- 10%, in the etherification reaction to act as a reflux medium. The advantages of this process are:

- Uniformity of Product
- Increased speed of reaction and lower material losses.
- Light Color

In the solvent process, the production of alkyds can be carried out either in a single stage or a two stage process. Under the single stage process, the drying oil (linseed oil), polyalcohol and phthalic anhydride are converted simultaneously. This method of alkyd preparation is not satisfactory because of the incompatibility of the phthalic anhydride with drying oil (linseed oil) and the difficulty of controlling the reaction to produce the desired end-products.

In the first stage of the two stage solvent process, monoglyceride is produced from drying oil and polyalcohol and in the second stage the monoglyceride is esterified with phthalic anhydride to convert it into alkyd resin. This process is more satisfactory and is the one recommended for the envisaged plant because it eliminates the problems of the first option.

In the two- stage solvent process, the first operation is the alcholoysis reaction which takes place under different duration of time (varying form 40 minutes to 4 hours) and temperature (from about 240 to 260oC). The completion of this stage is shown by the solubility of the product in about twice its weight of methanol. Monoglyceride formation is checked by solubility method with methanol in the ratio 1:3. The confirmation test is done by compatibility test in which monoglyceride is heated separately in small quantity with pthalic anhydride and heated up to 225 degree Celsius. The reaction product is diluted with MTO to infinite.

Area: The industrial setup requires space for Inventory, workshop or manufacturing area, space for power supply utilities and auxiliary like Generator setup. Also some of the area of building is required for office staff facilities, documentation, office furniture, etc. Thus, the approximate total area required for complete industrial setup is 1500 to 2000Sqft.

Power Requirement: The power consumption required to run all the machinery could be approximated as 30 Hp

Manpower Requirement: There are requirement of skilled machine operators to run the machine set. Experience quality engineers are required for desired quality control. Some helpers are also required to transfer the material from one work station to other. Office staffs are required to maintain the documentation. The approximate manpower required is 9 including 1 Supervisor, 1 Plant operator, 2 unskilled worker, 1 Helper and 1 Security guard. 3 Skilled worker including Accountant, Manager and Sales person.

Bank Term Loan: Rate of Interest is assumed to be at 11%

Depreciation: Depreciation has been calculated as per the Provisions of Income Tax Act, 1961

Approvals & Registration Requirement:

Basic registration required in this project:

- GST Registration
- Udyog Aadhar Registration (Optional)
- Choice of a Brand Name of the product and secure the name with Trademark if require.
- NOC from State Pollution Control Board

Implementation Schedule:

S No.	Activity	Time required
1.	Acquisition of premises	1-2 Months
2.	Procurement & installation of Plant & Machinery	1-2 Months
3.	Arrangement of Finance	1.5-2 Months
4.	Requirement of required Manpower	1 Month
5.	Commercial Trial Runs	1 Month
	Total time Required (some activities shall run concurrently)	5-6 Months

FINANCIALS

PROJECTED CASH FLOW STATEMENT					
PARTICULARS	**I**	**II**	**III**	**IV**	**V**
SOURCES OF FUND					
Own Contribution	3.65	-			
Reserve & Surplus	4.37	7.49	8.80	16.74	21.37
Depriciation & Exp. W/off	3.90	3.32	2.83	2.42	2.06
Increase In Cash Credit	9.00				
Increase In Term Loan	24.00	-	-	-	-
Increase in Creditors	5.06	0.92	0.66	0.66	0.66
TOTAL :	**49.98**	**11.73**	**12.30**	**19.82**	**24.09**
APPLICATION OF FUND					
Increase in Fixed Assets	26.65	-	-	-	-
Increase in Stock	7.10	1.26	1.01	1.02	1.04
Increase in Debtors	8.07	1.55	1.25	1.29	1.32
Repayment of Term Loan	2.67	5.33	5.33	5.33	5.33
Taxation	-	1.12	1.76	4.18	6.41
Drawings	2.00	2.40	2.80	6.00	9.00
TOTAL :	**46.49**	**11.67**	**12.15**	**17.83**	**23.10**
Opening Cash & Bank Balance	-	3.49	3.55	3.69	5.68
Add : Surplus	3.49	0.06	0.15	1.99	0.99
Closing Cash & Bank Balance	**3.49**	**3.55**	**3.69**	**5.68**	**6.67**

PROJECTED BALANCE SHEET					
PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Capital Account					
Opening Balance	-	6.02	9.99	14.22	20.78
Add: Additions	3.65	-	-	-	-
Add: Net Profit	4.37	6.37	7.04	12.55	14.96
Less: Drawings	2.00	2.40	2.80	6.00	9.00
Closing Balance	6.02	9.99	14.22	20.78	26.73
CC Limit	9.00	9.00	9.00	9.00	9.00
Term Loan	21.33	16.00	10.67	5.33	-
Sundry Creditors	5.06	5.98	6.64	7.31	7.97
TOTAL :	**41.41**	**40.96**	**40.53**	**42.42**	**43.71**
APPLICATION OF FUND					
Fixed Assets (Gross)	26.65	26.65	26.65	26.65	26.65
Gross Dep.	3.90	7.22	10.05	12.47	14.53
Net Fixed Assets	22.75	19.43	16.60	14.18	12.12
Current Assets					
Sundry Debtors	8.07	9.62	10.87	12.16	13.48
Stock in Hand	7.10	8.37	9.37	10.39	11.43
Cash and Bank	3.49	3.55	3.69	5.68	6.67
TOTAL :	**41.41**	**40.96**	**40.53**	**42.42**	**43.71**
	-	-	-	-	-

PROJECTED PROFITABILITY STATEMENT

PARTICULARS	I	II	III	IV	V
A) SALES					
Gross Sale	242.14	288.63	326.16	364.76	404.44
Total (A)	**242.14**	**288.63**	**326.16**	**364.76**	**404.44**
B) COST OF SALES					
Raw Material Consumed	216.89	256.20	284.67	313.13	341.60
Elecricity Expenses	1.83	2.05	2.28	2.51	2.74
Repair & Maintenance	2.42	2.89	6.52	7.30	12.13
Labour & Wages	6.43	6.75	7.08	7.44	7.81
Depreciation	3.90	3.32	2.83	2.42	2.06
Cost of Production	231.46	271.21	303.39	332.80	366.35
Add: Opening Stock /WIP	-	3.49	4.10	4.63	5.18
Less: Closing Stock /WIP	3.49	4.10	4.63	5.18	5.74
Cost of Sales (B)	227.97	270.60	302.86	332.25	365.78
C) GROSS PROFIT (A-B)	14.16	18.03	23.29	32.51	38.65
	5.85%	**6.25%**	**7.14%**	**8.91%**	**9.56%**
D) Bank Interest (Term Loan)	2.60	2.13	1.54	0.95	0.37
ii) Interest On Working Capital	0.99	0.99	0.99	0.99	0.99
E) Salary to Staff	3.78	4.54	5.44	6.53	7.84
F) Selling & Adm Expenses Exp.	2.42	2.89	6.52	7.30	8.09
TOTAL (D+E)	**9.79**	**10.54**	**14.50**	**15.77**	**17.28**
H) NET PROFIT	4.37	7.49	8.80	16.74	21.37
	1.8%	**2.6%**	**2.7%**	**4.6%**	**5.3%**
I) Taxation	-	1.12	1.76	4.18	6.41
J) PROFIT (After Tax)	4.37	6.37	7.04	12.55	14.96

COMPUTATION OF MAKING OF ALKYD RESIN			
Item to be Manufactured Alkyd Resin			
Manufacturing Capacity per day		1,800	Kg
No. of Working Hour		8	
No of Working Days per month		25	
No. of Working Day per annum		300	
Total Production per Annum		5,40,000	Kg
Total Production per Annum		5,400	Barrel of 100 Kg
Year		Capacity Utilisation	ALKYD RESIN
I		40%	2,160.00
II		45%	2,430.00
III		50%	2,700.00
IV		55%	2,970.00
V		60%	3,240.00

COMPUTATION OF RAW MATERIAL					
Item Name		Quantity of Raw Material	Unit	Unit Rate	Total CostPer Annum (100%)
Linseed oil		360.00	MT	1,00,000.00	3,60,00,000.00
Penta Erythirol		60.00	MT	1,20,000.00	72,00,000.00
Pthalic anhydride		150.00	MT	65,000.00	97,50,000.00
Litharge		0.15	MT	1,50,000.00	22,500.00
Xylene		5.00	MT	88,000.00	4,40,000.00
Barrel		5,400.00	Pcs	150.00	8,10,000.00
Total					**5,42,22,500.00**
Total Raw material in Rs lacs					542.23

Raw Material Consumed	Capacity Utilisation		Amount (Rs.)		
I	40%		216.89		
II	45%		256.20	5% Increase in Cost	
III	50%		284.67	5% Increase in Cost	
IV	55%		313.13	5% Increase in Cost	
V	60%		341.60	5% Increase in Cost	

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL					
PARTICULARS	I	II	III	IV	V
Finished Goods					
(5 Days requirement)	3.49	4.10	4.63	5.18	5.74
Raw Material					
(5 Days requirement)	3.61	4.27	4.74	5.22	5.69
Closing Stock	**7.10**	**8.37**	**9.37**	**10.39**	**11.43**

COMPUTATION OF WORKING CAPITAL REQUIREMENT			
Particulars	**Amount**	**Margin(10%)**	**Net Amount**
Stock in Hand	7.10		
Less:			
Sundry Creditors	5.06		
Paid Stock	**2.04**	**0.20**	**1.84**
Sundry Debtors	8.07	0.81	7.26
Working Capital Requirement			**9.10**
Margin			1.01
MPBF			**9.10**
Working Capital Demand			**9.00**

BREAK UP OF LABOUR				
Particulars		Wages	No of	Total
		Per Month	Employees	Salary
Supervisor		15,000.00	1	15,000.00
Plant Operator		9,000.00	1	9,000.00
Unskilled Worker		8,000.00	2	16,000.00
Helper		6,000.00	1	6,000.00
Security Guard		5,000.00	1	5,000.00
				51,000.00
Add: 5% Fringe Benefit				2,550.00
Total Labour Cost Per Month				53,550.00
Total Labour Cost for the year (In Rs. Lakhs)			6	6.43

BREAK UP OF SALARY				
Particulars		Salary	No of	Total
		Per Month	Employees	Salary
Manager		12,000.00	1	12,000.00
Accountant cum store keeper		10,000.00	1	10,000.00
Sales		8,000.00	1	8,000.00
Total Salary Per Month				30,000.00
Add: 5% Fringe Benefit				1,500.00
Total Salary for the month				31,500.00
Total Salary for the year (In Rs. Lakhs)			3	3.78

COMPUTATION OF DEPRECIATION				
Description	Land	Plant & Machinery	Furniture	**TOTAL**
Rate of Depreciation		**15.00%**	**10.00%**	
Opening Balance	Leased	-	-	-
Addition	-	24.65	2.00	26.65
	-	24.65	2.00	26.65
		-	-	
TOTAL		24.65	2.00	26.65
Less : Depreciation	-	3.70	0.20	3.90
WDV at end of Ist year	-	20.95	1.80	22.75
Additions During The Year	-	-	-	-
	-	20.95	1.80	22.75
Less : Depreciation	-	3.14	0.18	3.32
WDV at end of IInd Year	-	17.81	1.62	19.43
Additions During The Year	-	-	-	-
	-	17.81	1.62	19.43
Less : Depreciation	-	2.67	0.16	2.83
WDV at end of IIIrd year	-	15.14	1.46	16.60
Additions During The Year	-	-	-	-
	-	15.14	1.46	16.60
Less : Depreciation	-	2.27	0.15	2.42
WDV at end of IV year	-	12.87	1.31	14.18
Additions During The Year	-	-	-	-
	-	12.87	1.31	14.18
Less : Depreciation	-	1.93	0.13	2.06
WDV at end of Vth year	-	10.94	1.18	12.12

REPAYMENT SCHEDULE OF TERM LOAN						11.0%	
Year	**Particulars**	**Amount**	**Addition**	**Total**	**Interest**	**Repayment**	**Cl Balance**
I	Opening Balance						
	Ist Quarter	-	24.00	24.00	0.66	-	24.00
	Iind Quarter	24.00	-	24.00	0.66	-	24.00
	IIIrd Quarter	24.00	-	24.00	0.66	1.33	22.67
	Ivth Quarter	22.67	-	22.67	0.62	1.33	21.33
					2.60	2.67	
II	Opening Balance						
	Ist Quarter	21.33	-	21.33	0.59	1.33	20.00
	Iind Quarter	20.00	-	20.00	0.55	1.33	18.67
	IIIrd Quarter	18.67	-	18.67	0.51	1.33	17.33
	Ivth Quarter	17.33		17.33	0.48	1.33	16.00
					2.13	5.33	
III	Opening Balance						
	Ist Quarter	16.00	-	16.00	0.44	1.33	14.67
	Iind Quarter	14.67	-	14.67	0.40	1.33	13.33
	IIIrd Quarter	13.33	-	13.33	0.37	1.33	12.00
	Ivth Quarter	12.00		12.00	0.33	1.33	10.67
					1.54	5.33	
IV	Opening Balance						
	Ist Quarter	10.67	-	10.67	0.29	1.33	9.33
	Iind Quarter	9.33	-	9.33	0.26	1.33	8.00
	IIIrd Quarter	8.00	-	8.00	0.22	1.33	6.67
	Ivth Quarter	6.67		6.67	0.18	1.33	5.33
					0.95	5.33	
V	Opening Balance						
	Ist Quarter	5.33	-	5.33	0.15	1.33	4.00
	Iind Quarter	4.00	-	4.00	0.11	1.33	2.67
	IIIrd Quarter	2.67	-	2.67	0.07	1.33	1.33
	Ivth Quarter	1.33		1.33	0.04	1.33	0.00
					0.37	5.33	

Door to Door Period	60	Months
Moratorium Period	6	Months
Repayment Period	54	Months

CALCULATION OF D.S.C.R					
PARTICULARS	**I**	**II**	**III**	**IV**	**V**
CASH ACCRUALS	8.27	9.69	9.87	14.97	17.02
Interest on Term Loan	2.60	2.13	1.54	0.95	0.37
Total	10.87	11.82	11.41	15.92	17.39
REPAYMENT					
Repayment of Term Loan	2.67	5.33	5.33	5.33	5.33
Interest on Term Loan	2.60	2.13	1.54	0.95	0.37
Total	5.27	7.46	6.87	6.29	5.70
DEBT SERVICE COVERAGE RATIO	**2.06**	**1.58**	**1.66**	**2.53**	**3.05**
AVERAGE D.S.C.R.			**2.13**		

COMPUTATION OF SALE					
Particulars	**I**	**II**	**III**	**IV**	**V**
Op Stock	-	36.00	40.50	45.00	49.50
Production	2,160.00	2,430.00	2,700.00	2,970.00	3,240.00
	2,160.00	2,466.00	2,740.50	3,015.00	3,289.50
Less : Closing Stock(10 Days)	36.00	40.50	45.00	49.50	54.00
Net Sale	2,124.00	2,425.50	2,695.50	2,965.50	3,235.50
Sale Price per Barrel	11,400.00	11,900.00	12,100.00	12,300.00	12,500.00
Sale (in Lacs)	**242.14**	**288.63**	**326.16**	**364.76**	**404.44**

COMPUTATION OF ELECTRICITY				
(A) POWER CONNECTION				
Total Working Hour per day		Hours	8	
Electric Load Required		HP	30	
Load Factor			0.7460	
Electricity Charges		per unit	7.50	
Total Working Days			300	
Electricity Charges				4,02,840.00
Add : Minimim Charges (@ 10%)				
(B) DG set				
No. of Working Days			300	days
No of Working Hours			0.3	Hour per day
Total no of Hour			90	
Diesel Consumption per Hour			8	
Total Consumption of Diesel			720	
Cost of Diesel			65.00	Rs. /Ltr
Total cost of Diesel			0.47	
Add : Lube Cost @15%			0.07	
Total			**0.54**	
Total cost of Power & Fuel at 100%				4.57
Year		**Capacity**		**Amount**
				(in Lacs)
I		40%		1.83
II		45%		2.05
III		50%		2.28
IV		55%		2.51
V		60%		2.74

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