

PROJECT REPORT

Of

MENTHOL CRYSTAL UNIT

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding **Menthol Crystal Unit**.

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 Entrepreneur : xxxxxxxx
- 2 Constitution (legal Status) : xxxxxxxx
- 3 Father / Spouse Name : xxxxxxxx
- 4 Unit Address : xxxxxxxxxxxxxxxxxxxxxxxx
- District : xxxxxx
Pin: xxxxxx State: xxxxxxxx
Mobile xxxxxx
- 5 Product and By Product : MENTHOL CRYSTALS
- 6 Name of the project / business activity proposed : MENTHOL CRYSTALS UNIT
- 7 Cost of Project : Rs.36.56 Lakhs
- 8 Means of Finance
Term Loan Rs.27.9 Lakhs
Own Capital Rs.3.66 Lakhs
Working capital Rs.5 Lakhs
- 9 Debt Service Coverage Ratio : 2.39
- 10 Pay Back Period : 5 Years
- 11 Project Implementation Period : 5-6 Months
- 12 Break Even Point : 33%
- 13 Employment : 8 Persons
- 14 Power Requirement : 20.00 HP
- 15 Major Raw materials : Mint Oil, Chemicals & other consumables, Packing material
- 16 Estimated Annual Sales Turnover (Max Capacity) : 143.70 Lakhs
- 17 Detailed Cost of Project & Means of Finance

COST OF PROJECT

(Rs. In Lakhs)

Particulars	Amount
	Own/Rented
Land	29.40
Plant & Machinery	1.60
Furniture & Fixtures	5.56
Working Capital	36.56
Total	36.56

MEANS OF FINANCE

Particulars	Amount
Own Contribution	3.66
Working Capital(Finance)	5.00
Term Loan	27.90
Total	36.56

MENTHOL CRYSTAL UNIT

Introduction: Mint oil and its derivative menthol is widely used as flavouring ingredient for various products such as tooth paste, dental cream, cough syrups, confectionery, pan masala, chewing gums and in pain relieving preparations. Mentha cultivation in India has proved quite remunerative to the growers, particularly to small holders and fitted well in the existing cropping system in mint growing area in the country, Mint growers consider mentha as a bonus crop as it does not disturb or replace the cultivation of any major winter (Rabi) or rainy season (Kharif) crop. Being a labour intensive crop mentha provides various employment opportunities in cultivation, distillation, processing field particularly in rural areas.



Uses & Market Potential: Mentha oil is obtained from the leaves/entire plant of various mentha species and varieties. The Japanese mint (*Mentha arvensis*) is mainly cultivated in our country. The oil of Japanese mint is used as a source of natural menthol and dementholized oil (DMO). Because of its refreshing aroma and cooling effect, Mints have very wide spread use as flavouring agent in different pharmaceutical preparations.

The mint oil and its derivatives, menthol and DMO are now being marketed at various locations in North India as also being exported. The marketing of Japanese mint oil and menthol is wide spread. India is the second largest country in production of mints and its derivatives. India is exporting mints and its derivatives throughout the world worth Rs. 60-70 crores annually.

Raw material: Major raw materials are as follows:

1. Mint Oil
2. Chemicals & other consumables
3. Packing material

Machinery Requirements: Basic machines & equipments are as follows:

S No.	Machine	Unit	Price
1.	Chilling plant cap. 492 litre, temp. (50°C) chart type	12	900000
2.	Centrifuge heavy duty R.P.M. 1200	4	300000
3.	S.S. reaction vessel 6 with stirrer cap. 400kg	6	600000
4.	Dryer capacity 100 kg 12 trays with Thermostat temperature control	2	600000
5.	Vacuum filter	4	200000
6.	S.S Tray for storage	24	240000
7.	Other machines & equipments	Ls	100000
	Total Amount		2940000

Manufacturing Process: Process of manufacture is

- Freezing of the mint oil.
- Removal of the oil crystals from the residual oil by centrifuging.
- Drying of the crystals.

After collection of the mint oil from farmers/brokers, it should be filtered prior to cooling as it usually contains some water and mucilaginous impurities, which prevent ready formation of the menthol crystals. For crystallization some producers use filter and centrifuge the oil. In the whole process menthol crystals and dementholized mint oil is formed which is packed and sent for sale.

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 20hp

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 8 including 1 Supervisor, 1 Plant operator, 1 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	3.66	-			
Reserve & Surplus	6.83	10.72	16.59	22.37	28.37
Depriciation & Exp. W/off	4.57	3.89	3.32	2.82	2.41
Increase In Cash Credit	5.00				
Increase In Term Loan	27.90	-	-	-	-
Increase in Creditors	1.37	0.19	0.12	0.12	0.12
TOTAL :	49.33	14.80	20.02	25.32	30.90
APPLICATION OF FUND					
Increase in Fixed Assets	31.00	-	-	-	-
Increase in Stock	4.71	0.58	0.50	0.51	0.52
Increase in Debtors	2.54	0.37	0.32	0.33	0.34
Repayment of Term Loan	3.10	6.20	6.20	6.20	6.20
Taxation	1.03	1.61	4.98	6.71	8.51
Drawings	5.00	6.00	7.00	10.00	15.00
TOTAL :	47.38	14.76	18.99	23.75	30.58
Opening Cash & Bank Balance	-	1.95	2.00	3.03	4.59
Add : Surplus	1.95	0.04	1.03	1.57	0.32
Closing Cash & Bank Balance	1.95	2.00	3.03	4.59	4.92

PROJECTED BALANCE SHEET					
PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Capital Account					
Opening Balance	-	4.46	7.58	12.19	17.85
Add: Additions	3.66	-	-	-	-
Add: Net Profit	5.81	9.11	11.61	15.66	19.86
Less: Drawings	5.00	6.00	7.00	10.00	15.00
Closing Balance	4.46	7.58	12.19	17.85	22.71
CC Limit	5.00	5.00	5.00	5.00	5.00
Term Loan	24.80	18.60	12.40	6.20	0.00
Sundry Creditors	1.37	1.56	1.68	1.80	1.92
TOTAL :	35.64	32.74	31.27	30.85	29.63
APPLICATION OF FUND					
Fixed Assets (Gross)	31.00	31.00	31.00	31.00	31.00
Gross Dep.	4.57	8.46	11.78	14.60	17.01
Net Fixed Assets	26.43	22.54	19.22	16.40	13.99
Current Assets					
Sundry Debtors	2.54	2.91	3.23	3.56	3.90
Stock in Hand	4.71	5.30	5.79	6.30	6.82
Cash and Bank	1.95	2.00	3.03	4.59	4.92
TOTAL :	35.64	32.74	31.27	30.85	29.63

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PROJECTED PROFITABILITY STATEMENT					
PARTICULARS	I	II	III	IV	V
A) SALES					
Gross Sale	93.96	107.95	119.42	131.33	143.70
By Product Sale	14.85	16.82	18.90	21.09	23.40
Total (A)	108.81	124.77	138.32	152.43	167.10
B) COST OF SALES					
Raw Material Consumed	58.80	66.89	72.03	77.18	82.32
Electricity Expenses	1.93	2.10	2.26	2.42	2.58
Repair & Maintenance	16.91	17.27	17.91	19.70	21.56
Labour & Wages	8.32	8.98	10.33	11.36	12.50
Depreciation	4.57	3.89	3.32	2.82	2.41
Cost of Production	90.53	99.13	105.84	113.48	121.36
Add: Opening Stock/WIP	-	2.75	3.07	3.39	3.73
Less: Closing Stock/WIP	2.75	3.07	3.39	3.73	4.08
Cost of Sales (B)	87.78	98.81	105.52	113.14	121.01
C) GROSS PROFIT (A-B)	21.03	25.95	32.80	39.29	46.09
	19.33%	20.80%	23.71%	25.77%	27.58%
D) Bank Interest (Term Loan)	3.03	2.47	1.79	1.11	0.43
ii) Interest On Working Capital	0.55	0.55	0.55	0.55	0.55
E) Salary to Staff	5.92	6.81	7.90	8.69	9.56
F) Selling & Adm Expenses Exp.	4.70	5.40	5.97	6.57	7.19
TOTAL (D+E)	14.20	15.23	16.21	16.91	17.72
H) NET PROFIT	6.83	10.72	16.59	22.37	28.37
	6.3%	8.6%	12.0%	14.7%	17.0%
I) Taxation	1.03	1.61	4.98	6.71	8.51
J) PROFIT (After Tax)	5.81	9.11	11.61	15.66	19.86

COMPUTATION OF MAKING OF MENTHOL CRYSTALS			
Item to be Manufactured Menthol Crystals(Flakes)			
Manufacturing Capacity per day		30	Kg
No. of Working Hour		8	
No of Working Days per month		25	
No. of Working Day per annum		300	
Total Production per Annum		9,000	Kg
Total Production per Annum		9,000	Kg
Year		Capacity	MENTHOL CRYSTALS
		Utilisation	
I		60%	5,400.00
II		65%	5,850.00
III		70%	6,300.00
IV		75%	6,750.00
V		80%	7,200.00

COMPUTATION OF RAW MATERIAL

Item Name	Quantity of Raw Material	Unit	Unit Rate of	Total CostPer Annum (100%)
Mint Oil	22,500.00	Kg	400	90,00,000.00
Chemicals & other consumables		Ls		5,00,000.00
Packing Material		Ls		3,00,000.00
Total				98,00,000.00
Total Raw material in Rs lacs				98.00

Raw Material Consumed	Capacity	Amount (Rs.)	
	Utilisation		
I	60%	58.80	
II	65%	66.89	5% Increase in Cost
III	70%	72.03	5% Increase in Cost
IV	75%	77.18	5% Increase in Cost
V	80%	82.32	5% Increase in Cost

COMPUTATION OF SALE (Menthol Crystal)					
Particulars	I	II	III	IV	V
Op Stock	-	180.00	195.00	210.00	225.00
Production	5,400.00	5,850.00	6,300.00	6,750.00	7,200.00
Less : Closing Stock(10 Days)	180.00	195.00	210.00	225.00	240.00
Net Sale	5,220.00	5,835.00	6,285.00	6,735.00	7,185.00
Sale Price per kg	1,800.00	1,850.00	1,900.00	1,950.00	2,000.00
Sale (in Lacs)	93.96	107.95	119.42	131.33	143.70

Computation of By Product(Dementholized oil)				
Production	Capacity	Unit(Kg)	Rate	Total sale per annum
I	60%	1350	1,100.00	14.85
II	65%	1462.5	1,150.00	16.82
III	70%	1575	1,200.00	18.90
IV	75%	1687.5	1,250.00	21.09
V	80%	1800	1,300.00	23.40

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL					
PARTICULARS	I	II	III	IV	V
Finished Goods					
(10 Days requirement)	2.75	3.07	3.39	3.73	4.08
Raw Material					
(10 Days requirement)	1.96	2.23	2.40	2.57	2.74
Closing Stock	4.71	5.30	5.79	6.30	6.82

COMPUTATION OF WORKING CAPITAL REQUIREMENT			
Particulars	Amount	Margin(10%)	Net Amount
Stock in Hand	4.71		
Less:			
Sundry Creditors	1.37		
Paid Stock	3.34	0.33	3.01
Sundry Debtors	2.54	0.25	2.29
Working Capital Requirement			5.29
Margin			0.59
MPBF			5.29
Working Capital Demand			5.00

BREAK UP OF LABOUR				
Particulars	Wages		No of	Total
	Per Month	Employees	Salary	
Supervisor	20,000.00	1	20,000.00	
Plant Operator	16,000.00	1	16,000.00	
Unskilled Worker	12,000.00	1	12,000.00	
Helper	10,000.00	1	10,000.00	
Security Guard	8,000.00	1	8,000.00	
				66,000.00
Add: 5% Fringe Benefit				3,300.00
Total Labour Cost Per Month				69,300.00
Total Labour Cost for the year (In Rs. Lakhs)			5	8.32

BREAK UP OF SALARY				
Particulars	Salary		No of	Total
	Per Month	Employees	Salary	
Manager	20,000.00	1	20,000.00	
Accountant cum store keeper	15,000.00	1	15,000.00	
Sales	12,000.00	1	12,000.00	
Total Salary Per Month				47,000.00
Add: 5% Fringe Benefit				2,350.00
Total Salary for the month				49,350.00
Total Salary for the year (In Rs. Lakhs)			3	5.92

COMPUTATION OF DEPRECIATION				
Description	Land	Plant & Machinery	Furniture	TOTAL
Rate of Depreciation		15.00%	10.00%	
Opening Balance	Leased	-	-	-
Addition	-	29.40	1.60	31.00
	-	29.40	1.60	31.00
		-	-	
TOTAL		29.40	1.60	31.00
Less : Depreciation	-	4.41	0.16	4.57
WDV at end of Ist year	-	24.99	1.44	26.43
Additions During The Year	-	-	-	-
	-	24.99	1.44	26.43
Less : Depreciation	-	3.75	0.14	3.89
WDV at end of IIInd Year	-	21.24	1.30	22.54
Additions During The Year	-	-	-	-
	-	21.24	1.30	22.54
Less : Depreciation	-	3.19	0.13	3.32
WDV at end of IIIrd year	-	18.06	1.17	19.22
Additions During The Year	-	-	-	-
	-	18.06	1.17	19.22
Less : Depreciation	-	2.71	0.12	2.82
WDV at end of IV year	-	15.35	1.05	16.40
Additions During The Year	-	-	-	-
	-	15.35	1.05	16.40
Less : Depreciation	-	2.30	0.10	2.41
WDV at end of Vth year	-	13.04	0.94	13.99

REPAYMENT SCHEDULE OF TERM LOAN							11.0%
Year	Particulars	Amount	Addition	Total	Interest	Repayment	CI Balance
I	Opening Balance						
	Ist Quarter	-	27.90	27.90	0.77	-	27.90
	IInd Quarter	27.90	-	27.90	0.77	-	27.90
	IIIRD Quarter	27.90	-	27.90	0.77	1.55	26.35
	Ivth Quarter	26.35	-	26.35	0.72	1.55	24.80
					3.03	3.10	
II	Opening Balance						
	Ist Quarter	24.80	-	24.80	0.68	1.55	23.25
	IInd Quarter	23.25	-	23.25	0.64	1.55	21.70
	IIIRD Quarter	21.70	-	21.70	0.60	1.55	20.15
	Ivth Quarter	20.15		20.15	0.55	1.55	18.60
					2.47	6.20	
III	Opening Balance						
	Ist Quarter	18.60	-	18.60	0.51	1.55	17.05
	IInd Quarter	17.05	-	17.05	0.47	1.55	15.50
	IIIRD Quarter	15.50	-	15.50	0.43	1.55	13.95
	Ivth Quarter	13.95		13.95	0.38	1.55	12.40
					1.79	6.20	
IV	Opening Balance						
	Ist Quarter	12.40	-	12.40	0.34	1.55	10.85
	IInd Quarter	10.85	-	10.85	0.30	1.55	9.30
	IIIRD Quarter	9.30	-	9.30	0.26	1.55	7.75
	Ivth Quarter	7.75		7.75	0.21	1.55	6.20
					1.11	6.20	
V	Opening Balance						
	Ist Quarter	6.20	-	6.20	0.17	1.55	4.65
	IInd Quarter	4.65	-	4.65	0.13	1.55	3.10
	IIIRD Quarter	3.10	-	3.10	0.09	1.55	1.55
	Ivth Quarter	1.55		1.55	0.04	1.55	0.00
					0.43	6.20	

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
<u>CASH ACCRUALS</u>	10.38	13.01	14.93	18.48	22.27
Interest on Term Loan	3.03	2.47	1.79	1.11	0.43
Total	13.41	15.48	16.72	19.59	22.69
<u>REPAYMENT</u>					
Repayment of Term Loan	3.10	6.20	6.20	6.20	6.20
Interest on Term Loan	3.03	2.47	1.79	1.11	0.43
Total	6.13	8.67	7.99	7.31	6.63
DEBT SERVICE COVERAGE RATIO	2.19	1.78	2.09	2.68	3.42
AVERAGE D.S.C.R.			2.39		

COMPUTATION OF ELECTRICITY				
(A) POWER CONNECTION				
Total Working Hour per day		Hours	8	
Electric Load Required		HP	20	
Load Factor			0.7460	
Electricity Charges		per unit	7.50	
Total Working Days			300	
Electricity Charges				2,68,560.00
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%				3.22
Year		Capacity		Amount (in Lacs)
I		60%		1.93
II		65%		2.10
III		70%		2.26
IV		75%		2.42
V		80%		2.58

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