

PROJECT REPORT

Of

CHROME PLATING UNIT

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding Chrome Plating 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 : xxxxxxxxxxxx
- 2 Constitution (legal Status) : xxxxxxxxxxxx
- 3 Father / Spouse Name : xxxxxxxxxxxxxx
- 4 Unit Address : xxxxxxxxxxxxxxxxxxxxxxxxx
- District : xxxxxxxx
- Pin: xxxxxxxx State: xxxxx
- Mobile xxxxxxxx
- 5 Product and By Product : **CHROME PLATING OF METAL KITCHEN BASKET**
- 6 Name of the project / business activity proposed : **CHROME PLATING UNIT**
- 7 Cost of Project : Rs.12.87 Lakhs
- 8 Means of Finance
- Term Loan Rs.7.42 Lakhs
- Own Capital Rs.1.29 Lakhs
- Working Capital Rs.4.17 Lakhs
- 9 Debt Service Coverage Ratio : 3.12
- 10 Pay Back Period : 5 Years
- 11 Project Implementation Period : 5-6 Months
- 12 Break Even Point : 45%
- 13 Employment : 12 Persons
- 14 Power Requirement : 20.00 HP
- 15 Major Raw materials : Metal Cleaners, Chromium Trioxide, Nickel Sulphate, Acids, Plating Chemicals, Lead Anodes, Plating catalyst, Bus Bars and DM Water.
- 16 Estimated Annual Sales Turnover (Max Capacity) : 112.00 Lakhs
- 17 Detailed Cost of Project & Means of Finance

COST OF PROJECT

(Rs. In Lakhs)

Particulars	Amount
Land	Own/Rented
Plant & Machinery	7.44
Furniture & Fixtures	0.80
Working Capital	4.63
Total	12.87

MEANS OF FINANCE

Particulars	Amount
Own Contribution	1.29
Working Capital(Finance)	4.17
Term Loan	7.42
Total	12.87

CHROME PLATING UNIT

Introduction:

The chrome plating technique is an electroplating method for depositing a thin coating of chromium onto a substrate (metal or alloy). Electroplating is accomplished by transferring an electric current between two electrodes that are submerged in a chromic acid-based electrolyte solution. The substrate to be coated will be one of the electrodes. Chromium atoms are deposited in a layer on the electrode to be plated during the flow of current between the two electrodes. Electroplating a thin coating of chromium onto a metal item is known as chrome plating (or chromium plating). Chrome is the end result of chrome plating. The chromed coating might be ornamental, offer corrosion protection, make cleaning easier, or improve the hardness of the surface. For cosmetic reasons, a less costly chrome imitator is sometimes employed. Depending on the type of substrate being plated, there are several variants to this procedure. Different etching solutions, such as hydrochloric, hydrofluoric, and sulfuric acids, are required for different substrates. The etching of nimonic alloys with ferric chloride is very popular. When the component is electrically live, it may enter the chrome plating vat.



Uses & Market Potential:

Chrome plating is used to provide increased corrosion resistance, surface hardness, to ease the maintenance process of the metal or for purely decorative purposes. Chrome plating provides protection in environments that are conducive to corrosion in other base materials. Chrome Plating on Market size was valued at USD 581.04 Million in 2020 and is projected to reach USD 1058.06 Million by 2028, growing at a CAGR of 7.8% from 2021 to 2028. From 2020 to 2025, the electroplating market is expected to increase at a CAGR of 3.2 percent, reaching \$18.6 billion. An electrical current is used to deposit material on a workpiece in the electroplating process. It's a process that involves depositing a thin coating of metal on a substrate, which is a workpiece. Electroplating's main purpose is to change the physical characteristics of an item. The physical characteristics of the object are altered to improve its aesthetic appeal, wear resistance, thickness, and corrosion resistance. The increasing demand for metal consumer items is responsible for the market's expansion. Other factors that contribute substantially to market expansion include the rising usage of electroplating across several vertical industries, such as the automotive and aerospace industries, as well as military. Chromium is anticipated to increase at the fastest rate of 5.98 percent throughout the forecast period.

Product:

Chrome Plating of Metal Kitchen Basket

Raw Material:

The raw materials required are:

- Metal Cleaners
- Chromium Trioxide
- Nickel Sulphate

- Acids
- Plating Chemicals
- Lead Anodes
- Plating Catalysts
- Bus Bars
- De-Mineralized Water

Manufacturing Process:

The steps are:

- In the first stage to make chrome plating, raw materials are procured from the authorized vendors.
- Secondly, the metal which is supposed to get chrome plated are cleaned by metal cleaners which helps removing surface dirt, oil etc. from the metal. Next it is rinsed under the running water. Once the workpiece or object has been thoroughly cleaned so that there's no lingering debris, the product is ready for etching.
- Etching of the product component is done after rinsing the metal for which they are dipped in the tank of sulphuric acid.
- The dipped component is rinsed 2-3 times in water after which the metal gets ready for plating.
- Now on this surface nickel plating is done by dipping the metal in a nickel tank for 10-15 mins after which it is rinsed in water.
- The final stage is the chromium plating of the metal component and again after plating it is washed in water.
- The final product is now ready for packaging and scale.

Area:

The industrial setup requires space for Inventory, workshop or manufacturing area, space for power supply utilities and polishing area. Also, some of the area of building is required for office staff facilities, office furniture, etc. Thus, the approximate total area required for complete industrial setup is 2000-2500Sqft.

Cost of Machines:

S No.	Name of the machineries	Unit Price	Qty	Cost
1.	MOC PP Tank 10mm Size : 10'x 2.5'x2.5: Nickel Tank	42,000	1	42,000
2.	Nickel Filter	28,000	1	28,000
3.	1 HP Air Pump	17,500	1	17,500
4.	Rectifier 800Ams With Oil	1,55,000	1	1,55,000
5.	Titanium Basket	30,000	20 Nag.	30,000
6.	Nickel Tank Busbar Set	45,000	1	45,000
7.	Nickel Heater	3,500	2 Nag.	7,000
8.	Soaking Tank MoC PP 10mm Size: 3'x2.5'x2.5	17,500	1	17,500
9.	Anodic Cling Tank Moc PP 10mm Size: 3'x2.5'x2.5	17,500	1	17,500
10.	Anodic Busbar Set	25,000	1	25,000
11.	Rectifier 300Ams 12 Volts With Oil	68,000	1	68,000
12.	Heater	3,500	1	3,500
13.	Chrome Tank Size: 3'x2.5'x2.5' Moc MS	32,500	1	32,500

	3mm PVC 3mm FRP 3mm			
14.	Rectifier 600Ams 16Volts With Oil	1,25,000	1	1,25,000
15.	Chrome Busbar Set	25,000	1	25,000
16.	Chrome Anode	4,000	8 Nag.	32,000
17.	Heater	4,500	1	4,500
18.	Hot Dryer 50 Kg Capacity	69,000	1	69,000
TOTAL				7,44,000

Power Requirement- The estimated Power requirement is taken at 20 HP.

Manpower Requirement- Following manpower is required:

- Machine operator-2
- Skilled/unskilled worker-3
- Helper-4
- Manager cum Accountant-1
- Sales Personnel-2

FINANCIALS

PROJECTED BALANCE SHEET

PARTICULARS	I	II	III	IV	V
<u>SOURCES OF FUND</u>					
<u>Capital Account</u>					
Opening Balance	-	2.01	3.23	4.80	6.46
Add: Additions	1.29	-	-	-	-
Add: Net Profit	3.22	4.02	4.77	5.45	6.20
Less: Drawings	2.50	2.80	3.20	3.80	4.40
Closing Balance	2.01	3.23	4.80	6.46	8.25
CC Limit	4.17	4.17	4.17	4.17	4.17
Term Loan	6.59	4.94	3.30	1.65	-
Sundry Creditors	1.88	2.10	2.34	2.59	2.84
TOTAL :	14.65	14.45	14.61	14.86	15.27
<u>APPLICATION OF FUND</u>					
Fixed Assets (Gross)	8.24	8.24	8.24	8.24	8.24
Gross Dep.	1.20	2.22	3.09	3.83	4.47
Net Fixed Assets	7.04	6.02	5.15	4.41	3.77
Current Assets					
Sundry Debtors	3.44	4.02	4.52	5.05	5.60
Stock in Hand	3.06	4.14	4.62	5.11	5.62
Cash and Bank	1.10	0.26	0.32	0.29	0.27
TOTAL :	14.65	14.45	14.61	14.86	15.27

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PROJECTED PROFITABILITY STATEMENT

PARTICULARS	I	II	III	IV	V
<u>A) SALES</u>					
Gross Sale	68.88	80.48	90.46	100.96	112.00
Total (A)	68.88	80.48	90.46	100.96	112.00
<u>B) COST OF SALES</u>					
Raw Material Consumed	37.50	42.08	46.82	51.73	56.83
Electricity Expenses	2.24	2.46	2.69	2.91	3.13
Repair & Maintenance	1.38	1.61	1.81	2.02	2.24
Labour & Wages	12.10	13.91	16.14	18.40	20.60
Depreciation	1.20	1.02	0.87	0.74	0.64
Cost of Production	54.41	61.08	68.32	75.80	83.44
Add: Opening Stock /WIP	-	1.81	2.04	2.28	2.53
Less: Closing Stock /WIP	1.81	2.04	2.28	2.53	2.78
Cost of Sales (B)	52.59	60.86	68.08	75.55	83.18
C) GROSS PROFIT (A-B)	16.28	19.63	22.38	25.40	28.82
	23.64%	24.39%	24.74%	25.16%	25.73%
D) Bank Interest i) (Term Loan)	0.80	0.66	0.48	0.29	0.11
ii) Interest On Working Capital	0.46	0.46	0.46	0.46	0.46
E) Salary to Staff	8.69	10.87	12.61	14.37	16.53
F) Selling & Adm Expenses Exp.	3.10	3.62	4.07	4.54	5.04
G) TOTAL (D+E+F)	13.06	15.60	17.61	19.67	22.14
H) NET PROFIT	3.22	4.02	4.77	5.74	6.68
	4.7%	5.0%	5.3%	5.7%	6.0%
I) Taxation	-	-	-	0.28	0.48
J) PROFIT (After Tax)	3.22	4.02	4.77	5.45	6.20

PROJECTED CASH FLOW STATEMENT

PARTICULARS	I	II	III	IV	V
<u>SOURCES OF FUND</u>					
Own Contribution	1.29	-	-	-	-
Reserve & Surplus	3.22	4.02	4.77	5.74	6.68
Depreciation & Exp. W/off	1.20	1.02	0.87	0.74	0.64
Increase In Cash Credit	4.17	-	-	-	-
Increase In Term Loan	7.42	-	-	-	-
Increase in Creditors	1.88	0.23	0.24	0.25	0.25
TOTAL :	19.17	5.27	5.88	6.73	7.57
<u>APPLICATION OF FUND</u>					
Increase in Fixed Assets	8.24	-	-	-	-
Increase in Stock	3.06	1.08	0.48	0.50	0.51
Increase in Debtors	3.44	0.58	0.50	0.52	0.55
Repayment of Term Loan	0.82	1.65	1.65	1.65	1.65
Taxation	-	-	-	0.28	0.48
Drawings	2.50	2.80	3.20	3.80	4.40
TOTAL :	18.07	6.10	5.83	6.75	7.59
Opening Cash & Bank Balance	-	1.10	0.26	0.32	0.29
Add : Surplus	1.10	- 0.83	0.05	- 0.03	- 0.02
Closing Cash & Bank Balance	1.10	0.26	0.32	0.29	0.27

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL

PARTICULARS	I	II	III	IV	V
<u>Finished Goods</u>					
(10 Days requirement)	1.81	2.04	2.28	2.53	2.78
<u>Raw Material</u>					
(10 Days requirement)	1.25	2.10	2.34	2.59	2.84
Closing Stock	3.06	4.14	4.62	5.11	5.62

COMPUTATION OF WORKING CAPITAL REQUIREMENT

Particulars	Amount	Margin(10%)	Net Amount
Stock in Hand	3.06		
Less:			
Sundry Creditors	1.88		
Paid Stock	1.19	0.12	1.07
Sundry Debtors	3.44	0.34	3.10
Working Capital Requirement			4.17
Margin			0.46
MPBF			4.17
Working Capital Demand			4.17

REPAYMENT SCHEDULE OF TERM LOAN

11.0%

Year	Particulars	Amount	Addition	Total	Interest	Repayment	CI Balance
I	Opening Balance						
	Ist Quarter	-	7.42	7.42	0.20	-	7.42
	Iind Quarter	7.42	-	7.42	0.20	-	7.42
	IIIrd Quarter	7.42	-	7.42	0.20	0.41	7.00
	Ivth Quarter	7.00	-	7.00	0.19	0.41	6.59
					0.80	0.82	
II	Opening Balance						
	Ist Quarter	6.59	-	6.59	0.18	0.41	6.18
	Iind Quarter	6.18	-	6.18	0.17	0.41	5.77
	IIIrd Quarter	5.77	-	5.77	0.16	0.41	5.36
	Ivth Quarter	5.36		5.36	0.15	0.41	4.94
					0.66	1.65	
III	Opening Balance						
	Ist Quarter	4.94	-	4.94	0.14	0.41	4.53
	Iind Quarter	4.53	-	4.53	0.12	0.41	4.12
	IIIrd Quarter	4.12	-	4.12	0.11	0.41	3.71
	Ivth Quarter	3.71		3.71	0.10	0.41	3.30
					0.48	1.65	
IV	Opening Balance						
	Ist Quarter	3.30	-	3.30	0.09	0.41	2.88
	Iind Quarter	2.88	-	2.88	0.08	0.41	2.47
	IIIrd Quarter	2.47	-	2.47	0.07	0.41	2.06
	Ivth Quarter	2.06		2.06	0.06	0.41	1.65
					0.29	1.65	
V	Opening Balance						
	Ist Quarter	1.65	-	1.65	0.05	0.41	1.24
	Iind Quarter	1.24	-	1.24	0.03	0.41	0.82
	IIIrd Quarter	0.82	-	0.82	0.02	0.41	0.41
	Ivth Quarter	0.41		0.41	0.01	0.41	0.00
					0.11	1.65	

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>	4.42	5.04	5.64	6.20	6.83
Interest on Term Loan	0.80	0.66	0.48	0.29	0.11
Total	5.23	5.70	6.12	6.49	6.95
<u>REPAYMENT</u>					
Repayment of Term Loan	0.82	1.65	1.65	1.65	1.65
Interest on Term Loan	0.80	0.66	0.48	0.29	0.11
Total	1.63	2.31	2.12	1.94	1.76
DEBT SERVICE COVERAGE RATIO	3.21	2.47	2.88	3.34	3.94
AVERAGE D.S.C.R.			3.12		

Assumptions:

1. Production Capacity of Chrome Plating unit is taken at 500 Units per day. First year, Capacity has been taken @ 50%.
2. Working shift of 10 hours per day has been considered.
3. Raw Material stock and Finished goods closing stock has been taken for 10 days.
4. Credit period to Sundry Debtors has been given for 15 days.
5. Credit period by the Sundry Creditors has been provided for 15 days.
6. Depreciation and Income tax has been taken as per the Income tax Act,1961.
7. Interest on working Capital Loan and Term loan has been taken at 11%.
8. Salary and wages rates are taken as per the Current Market Scenario.
9. Power Consumption has been taken at 20 HP.
10. Selling Prices & Raw material costing has been increased by 3% & 2% respectively in the subsequent years.

DISCLAIMER

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