PROJECT PROFILE
ON
CHROMUM PLATING ON ABS PLASTIC

PRODUCT : CHROMUM PLATING ON ABS PLASTIC

QUALITY & STANDARDS : IS: 1068-1993 for Copper, Nickel and Chromium Electrode deposited coating

PRODUCTION CAPACITY : Quantity : 25,000 Sq. mtrs. Per Annum

Value : Rs.75,00,000/-

MONTH & YEAR : FEBRUARY, 2011

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1. INTRODUCTION:

Plastic can be readily moulded into intricate shapes and the light weight and ease of fabrication in plastics may be combined with certain desirable characteristics of metal by plasting the tensile impact properties and abrasion resistance of plastics are improved by metal coating. The applications of metallized plastic include P.C.B.S. draw pulls doorknobs automobile and electric appliances hardwares, frontguards, push buttons and regulators knobs for fan cooler etc. Plastics that can be plated are phenol formaldehyde, melamin , acrylics epoxide and Acrylonitrile Butadiene Styrene (ABS).

2. MARKET:

ABS Moulded Components with chrome finish are being increasingly used for various engineering and other automobile accessories computer hardwares. There exist sufficient scopes for new job plating units for plating of ABS plastic moulded components.

This item can also be marketed as ancillary items to other industries like Radio, T.V. Industries, Electronic and Electrical Industries, Automobile Industries etc. from the production of 1500 M.T. in 1950. The production of ABS has since increased 200000 M.T. A considerable part of this production is expected to be plated which is a fair demand for this industry.

3. BASIS & PRESUMPTIONS:

(i) The efficiency of the unit is calculated at 70% of the total production capacity. The unit will work 25 days a month on single shift basis and 300 days in a year.

(ii) The time period for achieving the full envisaged capacity utilization is six months after starting of production.

(iii) The labour wages are as per the prevailing rates in the market.

(iv) The rate of interest for fixed and working capital is taken as 14%

(v) The margin money requirement for the project is 30 per cent.

(vi) The pay back period of this project is 3 years.

4. IMPLEMENTATION SCHEDULE:

The time requirement for preparation of Project Report	:	Two months
Time requirement for selection of site	:	One month
Time required for registration as small scale unit	:	One month
Time required for acquiring the loan	:	Two months
Construction of building	:	Three months
Machinery procurement, erection and commissioning	:	One month
Recruitment of labourer etc.	:	One month
Trial runs	:	One month

5. TECHNICAL ASPECTS:

Process Outline

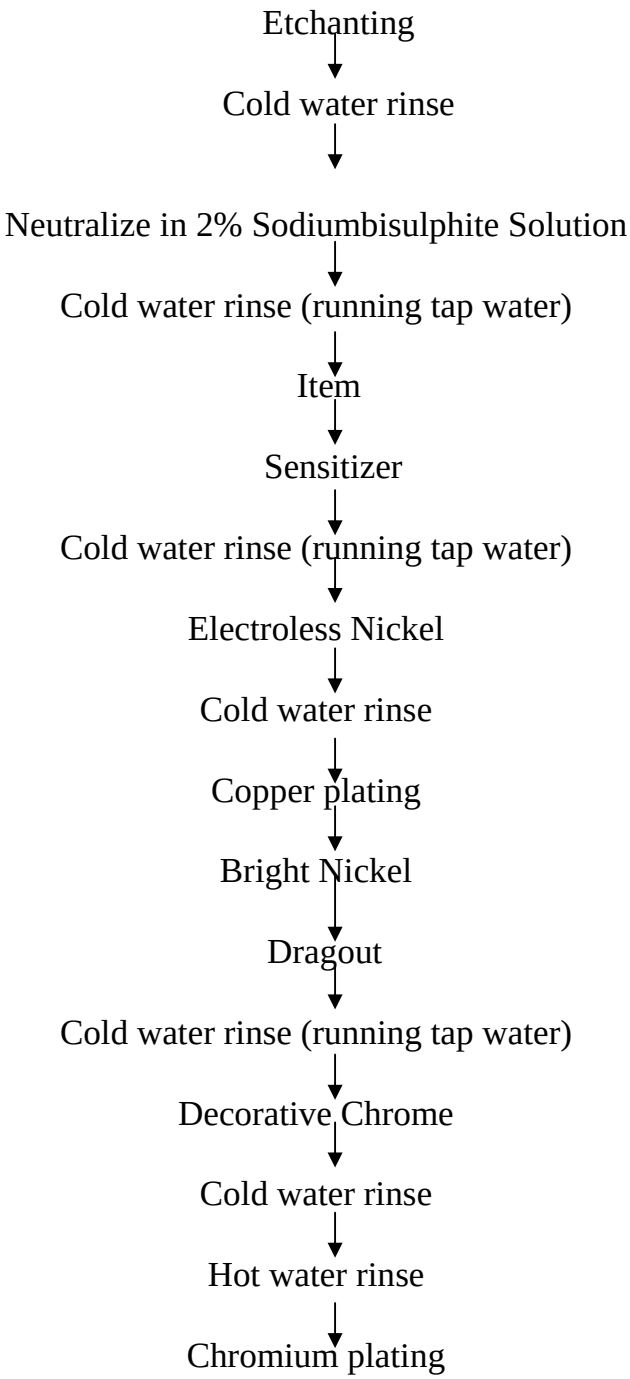
The process of electroplating on plastics is similar to that on metals with the difference that the former are made conducting by some treatments before electroplating. The preparatory operations on plastic substrates include etching or conditioning, sensitizing, activation and electroless plating.

The degree of adhesion of plate to plastic depends on a number of factors. The most important of which are the particular ABS resin the conditions under which the plastic was moulded and the conditioning treatment special grade of ABS specifically formulated for plating generally plate with greater adhesion than non-plating grades.

6. FLOW PROCESS CHART:

The following sequence of operation is usually followed for plating on **ABS:**

Preclean of item
↓
Cold water rinse
↓
Neutralization
↓
Cold water rinse


Etchanting
Cold water rinse
Neutralize in 2% Sodiumbisulphite Solution
Cold water rinse (running tap water)
Item
Sensitizer
Cold water rinse (running tap water)
Electroless Nickel
Cold water rinse
Copper plating
Bright Nickel
Dragout
Cold water rinse (running tap water)
Decorative Chrome
Cold water rinse
Hot water rinse
Chromium plating

7. QUALITY & STANDARD:

IS:1068-1993 for Copper, Nickel and Chromium electrodeposited coatings.

8. PRODUCTION CAPACITY (PER ANNUM):

Quantity : 25000 Sq. mtrs.
Value : Rs. 75,00,000/-

9. MOTIVE POWER REQUIREMENT:

The power requirement is 30 KWH, 3 Phase 440 Volts.

10. POLLUTION CONTROL MEASURES:

Since this unit has been classified as pollution making industry, the No Objection Certificate has to be taken from the State Pollution Control Board. However, a suitable arrangement has been made to control the pollution problem.

11. ENERGY CONSERVATION:

Proper insulation of bath and other related pipes should be made so that the wasting of energy can be saved.

12. FINANCIAL ASPECTS:

(i) Fixed Capital

Land & Building

		Area Sq. Mtrs.	Rate Rs./Sq. Mtr.	Value (Rs.)
Land	:	200 Sq. Mtrs.	2000/-	4,00,000/-
Building	:	100 Sq. Mtrs.	5000/-	5,00,000/-
			Total :	9,00,000/-

(ii) Machinery & Equipment

Sr. No.	Description of Machines	Qty.(Nos.)	Value (Rs.)
(a) 1.	Production Unit Oil Cooled Silicon Rectifier with stepless control, output current rating 1000 amps. Output voltage 12 V complete with Metal Panel etc.	1	2,00,000/-
2.	Filtration unit for Bright Nickel with 2 HP Motor and 16 plates	1	32,000/-
3.	Filter unit for Acid Copper with 2 HP Motor 16 plates 2800 RPM	1	32,000/-
4.	Bright Nickel Tank Capacity 1500 Ltr.	1	65,000/-
5.	Chrome tank cap. 300 litres	1	4,000/-
6.	Acid copper tank capacity 500 litres	1	15,000/-
7.	Drag out Tank	2	10,000/-
8.	Neutralization tank cap. 300 litres	1	5,000/-
9.	Sensitizing tank	1	5,000/-
10.	Etching tank 2'x2'x2' Ms/5mm L.L.	1	40,000/-
11.	Polishing machine motorized 2 HP	1	13,000/-
12.	Immersion Heaters 3 KW Lead banding M.S.	2	7,000/-
(b)	Testing Equipment like different Reagent, Glassware, P.H. Meter	L.S.	1,00,000/-
(c)	Pollution Control equipment unit		2,00,000/-
(d)	Electrification and Installation charges @ 10% of cost of machinery		70,000/-
	Total cost of machinery & equipment		7,98,000/-
	Cost of office equipment/working table/computer		1,50,000/-
	Total Rs.		9,48,000/-

(iii) Pre-operative Expenses 50,000/-
(Project cost, non-refundable)

Total Fixed Capital = (i+ii+iii)

Fixed Capital = 9,00,000

Machinery & Equipment 9,48,000

Pre-operative Expenses 50,000

= 18,98,000/-

13. WORKING CAPITAL (PER MONTH)

(A) Staff & Labour

Designation	Nos.	Salary (Rs.)	Total (Rs.)
Chief Chemist cum Manager	1	10,000/-	10,000/-
Skilled Worker	1	6,000/-	6,000/-
Workers	6	4,000/-	24,000/-
Accountant cum Store Keeper	1	5,000/-	5,000/-
Clerk cum Typist	1	4,500/-	4,500/-
Total salaries + perquisites @ 15%			49,500/- 7,425/- ---------- Total : 56,925/- Or say : 57,000/-

(B) Raw Materials

Sr. No.	Particulars	Qty. (kgs.)	Rate (Rs./kg or litre	Value (Rs.)
1	Bright Nickel Salt	80	430/kg.	34,400/-
2	Brightner (initial make up)	12	400/ltr.	4,800/-
3	Brightner Maintenance	22	400/ltr.	8,800/-
4	Decorative chrome salt	32	400/kg.	12,800/-
5	Nickel Anode (4”x4”)	40	2600/kg.	1,40,000/-
6	Copper Anode	17	480/kg.	8,160/-
7	Soak Cleaner	32	100/kg.	3,200/-
8	Neutralizer	32	50/ltr.	1,600/-
9	Sensitizer	32	1800/ltr.	57,600/-
10	Etchant	77	185/ltr.	14,245/-
11	Immersion Nickel Concentrate (A)	42	350/ltr.	14,700/-
12	Immersion Nickel (B)	42	330/ltr.	13,860/-
13.	Acid Copper Brightner (Additive)	17	350/ltr.	5,950/-
14	Misc. chemicals viz. caustic soda, sulphuric acid, copper wire, PH Paper, Hydrogen Peroxide activated Carbon	L.S.		20,000/-
			Total : Or say :	3,40,115/- 3,40,000/-

(C) Utilities (Per Month) (Rs.)

Power :	30 KWH @ 5.50 per unit (30 KWH X 8 Hrs. x 25 days x 5.50)	33,000/-
Water :	L.S.	5,000/-
	Total :	38,000/-

(D) Other Contingent expenses (Per Month) (Rs.)

Postage & Stationery	2,000/-
Telephone	2,000/-
Consumable Stores	1,500/-
Repairs & Maintenance	3,500/-
Transportation charges	2,000/-
Advertisement & Publicity	2,000/-
Insurance	3,000/-
Miscellaneous Expenditure	2,000/-
Total :	18,000/-

14. TOTAL WORKING CAPITAL (PER MONTH) (Rs.)

(A+B+C+D) WORKING CAPITAL (PER MONTH):	57000/-
Raw Materials:	340000/-
Utilities (Per Month):	38000/-
Other Contingent expenses (Per Month):	18,000/-
	4,53,000/-

15. TOTAL CAPITAL INVESTMENT:

(a) Fixed Capital ..		18,98,000/-
(b) Working Capital for 3 months ..		13,59,000/-
	Total :	32,57,000/-

16. FINANCIAL ANALYSIS:

1) Cost of Production (Per Year) (Rs.)

Total recurring cost per year	54,36,000/-
Depreciation on Building @ 5%	25,000/-
Depreciation on machinery @ 10%	79,800/-
Depreciation on Office Equipment @ 20%	30,000/-
Interest on total capital investment @ 14%	4,55,980/-

Total cost of production 60,26,780/-

2) Sales/Turnover (per year)

Item	Qty. (sq. mtrs.)	Rate/sq.mtr (Rs.)	Amount (Rs.)
Chromium Plating on ABS job work on various types	25000	300	75,00,000/-

3)

Turnover (Rs.)	Cost of Production (Rs.)	Profit (Rs.)
75,00,000	60,26780	14,73,220

4) Net Profit Ratio = $\frac{\text{Net Profit x 100}}{\text{Turnover Per Year}}$

= $\frac{14,73,220 \times 100}{75,00,000}$ = 19.64%

5) Rate of Return = $\frac{\text{Net Profit x 100}}{\text{Total Investment}}$

= $\frac{14,73,220 \times 100}{32,57,000}$ = 45.23%

6) Break-even Point

Fixed Cost	(Rs.)
a) Depreciation on Building	25,000/-
b) Interest on total investment	4,55,980/-
c) Insurance	36,000/-
d) 40% of salary and wages	2,73,600/-
e) 40% of other contingent expenses	86,400/-
Total :	87,6980/-
say :	8,77,000/-

B.E.P. % = $\frac{\text{Fixed Cost x 100}}{\text{Fixed Cost + Net Profit}}$

= $\frac{8,77,000 \times 100}{8,77,000 + 14,73,220}$

= 37.31%

17. NAMES & ADDRESSES OF MACHINERY SUPPLIERS:

1. M/s. Grauer & Well (India) Ltd.,
Sukh Sagar, 6th Floor
N.S. Patkar Marg Coupatty
Mumbai-400 007.

2. M/s. Canning Mitra Phoenics Ltd.,
Eucharstic Congress Building III,
Mumbai-400 039.

3. M/s. Modern Engineering Co.,
Plot No. 1/33, Phase IV, GIDC,
Vithal Udyognagar – 388 121
Dist. Anand (Gujarat)

4. M/s. S.S. Engineering,
C-1-B, Hatkesh Udyognagar
Kashmira Byander Road
Mumbai-401 104.

5. M/s. Technocrat (India)
Plot No. 21, Gali No. 28 (Opp: Gali No. 4)
Railway Line Side
Anand Parbat Industrial Area
Near Rohtak Road
New Delhi-110 005.

6. M/s. Rectiers & Controls
17/3, Mathura Road
Faridabad-121 002.

7. M/s. Jindal Rectifiers
4/B, 4th Floor, DCM Building
16, Barakhamba Road
New Delhi-110 001.

7. M/s. Vijay Industries
B/10, Phase-II
Mayapuri Industrial Area
New Delhi-100 064.

18. NAMES & ADDRESSES OF RAW MATERIAL SUPPLIERS:

1. M/s. Mahavir Chemical Industries
Mahavir Estate
B/h. Shah Chambers
Nr. C.T.M. Cross Lane\
Amraiwadi, Ahmedabad.

2. M/s. Delta Chemicals
6, Deta House
J-1, Cama Zone, Goregaon (E)
Mumbai-4000 099.

3. M/s. Komal Agency
4, Sivangi Colony
Near Darpan Cinema
Andheri (E), Mumbai-400 099.

4. M/s. Manish Sales Corporation
178, Chetan Cloth Market
Sarangpur Gate
Ahmedabad-380 001.

5. M/s. Techno Enterprises
R 15/59, New Rajnagar
Ghaziabad (U.P)

6. M/s. Shankar & Co.,
200, Chawan Bazar
Delhi-110 016.

7. M/s. Ranject Engineering Works
FA 310, Mansarovar Garden
New Delhi-110 015.

8. M/s. Shree Chamunda Enterprise
1163/3, Patel Vas
Nava Asazwa
Ahmedabad-380 016 (Gujarat).

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