PROJECT PROFILE (UP DATED)

PRODUCT	:	SILVER PLATING
QUALITY	:	Is :1067 -1968 Is :1771 -1970 Is :5925 -1970
PRODUCTION CAPACITY	:	Qty. 10,000 Sq. mtrs (Annual) Value : Rs. 30 crores
MONTH & YEAR	:	March 2011
PREPARED BY	:	Metal Finishing Division Micro Small & Medium Enterprises – Development Institute 34, Industrial Estate, Nunhai, Agra

A. INTRODUCTION

Silver in its pure from is a soft white lustrous metal which is extremely meleable and ductile and is capable of taking a high polish. It is resistant to most common acids except nitric acid. Silver may be deposited as a shoft matt or hard bright coating. The silver plating is one of the oldest application of electo-deposition and still holds pride of place as a finish for the articles.

Now-a-days the ready made silver salts are available in the market, therefore, his project profile is based on that.

B. MARKET

The silver has got very wide range of application. It is mostly used for decorative purposes of ornamental articles, table wares, gift articles and in jewellery industries. Apart from these decorative uses its conductivity makes it ideal for electrical contacts in relays, high frequency components and wave guides to give a high surface conductivity, Where most of these components. It is also being used in electronic equipments, light reflectors, air craft engine bearings etc.

C. BASIS AND PRESUMPTION

(1) The efficiency of machinery is considered at 75%.the unit will work on single shift basis i.e. 8 hrs. per day, 254 days in a month and 300 days in a year.
(2) The time period to achieve the full envisaged capacity utilization is one year.
(3) The labour wages are as per the prevailing rates in market.
(4) The interest rates for fixed and working capital is taken as 12%.
(5) The margin money requirement will be 30% of this project to run the unit.
(6) The pay back period of this project is 5 years.
(7) The land requirement is 200 sq. mtrs. And the built up area is 100 sq. mtrs.

D. **IMPLEMENTATION SCHEDULE**

Time required for preparation of project report	- One month
Selection of site	-One month
Time required for registration as SSI unit	-One week
Time required for acquiring the loan	-Three months
Machinery commissioning and errection	-Two months
Recruitment of labourers etc.	-One month
Trial runs	-One month

E. **FINANCIAL ASPECTS**

(1) Process outline: The article which is to be silver plating first we have to be ensured that the article should be perfectly polished, and cleaned. If the base metal is highly polished, the plating finish will be of the high order hence sequence may be followed.

Degreasing – Acid pickling – water swill – Buffing/ polishing – Soak cleaning – water swill – Electrolytic cleaning and water swilling etc.

Then article are hanged on cathode bar of the plating bath where plating is done. Anode is of the pure silver metal. Then D.C. current between anode and cathode is passed and thereby plating process starts. The time of plating depends upon the thickness of coating required. After being silver plated – drag out – water swill – then the article should be mopped with white lime polish on a soft brown cloth mop.

Preparation of the Bath (plating tank): In preparing the silver bath, first dissolved the potassium cyanide and then silver cyanide should be dissolved in the potassium cyanide solution, then other chemicals may be dissolved in the above solution. The bath must be filtered prior to use.

May composition of the bath have already been prepared and suggested. A typical composition of bath is given below for heavy deposit of silver at high current density.

Silver Cyanide	45 to 50	Gram per	Liters
Potassium Cyanide	45 to 55	"	"
Potassium Hydroxide	10 to 15	"	"
Potassium carbonate	45 to 80	"	"
Potassium Nitrate	40 to 6	"	"
Temperature	25 C to 30 C		

Now –a-day the ready made silver salts are available in the market in which the required proportions of the chemicals are mixed. Therefore the ready made salt can be used in the bath preparation.

(2) **Quality Specification:** As per ISI Specification

Is : 1771- 1970 Electroplated coatings of silver for general engineering purposes (first revision)

Is : 1067 – 1968 Electroplated coatings of silver for decorative and protective purposes (1^{St} revision)

Is : 5925 – 1970 Silver plating for general engineering purposes.

(3) Production Capacity (Per month)

(a) Quantity : 10,000 sq. mtrs.

(b) Value : Rs. 30 crores

(4) Approximate motive power requirement is 15 K.W.H.

(5) Pollution control : Suitable arrangement has been made in the project profile.

(6) Energy Conservation : Not required

F. FINANCIAL ASPECTS

(1) Fixed Capital

Land and Building

Land 200 sq. mtrs. @ 1000/Sq. mtrs	Value :	Rs.	2,00,000
Built up area 100 sq. mtrs. @ 7000/Sq. mtrs		Rs.	7,00,000
Total cost of land and building		Rs.	9,00,000

(2) Machinery & Equipment

Sr. No.		Indigenous/ Imported	Qty.	Price (Rs.)
1.	Oil Cooled silicon rectifier with step-less control out put current rating 1000 amp. Output voltage 12 V Complete with metal panel.	Indigenous	1	2,00,000
2.	Silver Plating tank 3 mm MS & 3 mm lead lined 2.25 mtr. length 1.50 " width 1.5 " height with duct and blower for fume	- do -	2	2,00,000

extraction and thermostatic
control equipment

3.	Cleaning/swilling tanks 3 mm MS & 3mm lead lined 1.5 x 1 x 1 mtrs.		Indi-genous	2	10,000
4.	Etching tank 3 mm M.S 1.5 m x 1 m x 1 mtr. with lip duct & blower arrangement		- do -		50,000
5.	Immersion heaters 3 KW lead bounding M.S.		- do -	2	10,000
6.	(a)	Filter machine			40,000
	(b)	Testing equipment like different reagents, glassware for laboratory apparatus for testing the voltage etc.			2,00,000
	(c)	Pollution control equipment			2,00,000
	(d)	Energy Conservation – not needed			
	(e)	Electrification and installation charges @ 10% of cost of machines and equipment			1,00,000
		Total cost of machinery & equipment etc.			11,00,000
	(f)	Cost of Jigs & Other fixture			10,000
	(g)	Cost of office equipment/ Working table etc.			2,00,000
		Total cost			13,10,000
3.	Pre-operative expenses				90,000
	Total Fixed Capital (1 + 2 + 3) (9,00,000 + 13,10,000 + 90,000)				23,00,000

4. Working Capital (Per month)

(i) Personal

Designation	No.	Salary	Total (Rs.)
Manager –cum-Chief Chemist	1	10000	10,000
Skilled Worker	1	6000	6,000
Accountant/Store Keeper	1	6000	6,000
Worker	4	4000	16,000
Clerk cum typist	1	4000	4,000
Peon cum Watchman	1	4000	4,000
	Total Salaries		**46,000**
	+ Perquisites @ 15% of Salaries		6,900
		Total:	52,900
		Say	**53,000**

(ii) Raw Material including Packaging

Requirement (Per month)

Particulars	Indigenous/	Qty.	Rate/kg	Value (Rs.)
Fine Silver (99.99 %)	Indigenous	65 kg.	58000/-	37,70,000
Silver salt	- do -	96 kg.	27000/-	25,92,000
Brightner	- do -	2 ltrs.	12000/-ltrs.	24,000
Misc. Chemicals		L.S.		30,000
				64,16,000

(iii) Utilities (Per month)

Power	15 K.W.H. units @ Rs. 6 per unit	18,000
Water	L.S.	2,000

			20,000

(iv)	**Other Consignation Expenses**	**(Per month)**	
	Postage and Stationery		1,000
	Telephone		5,000
	Consumable Stores		1,000
	Repair and Maintenance		4,000
	Transport Charges		5,000
	Advertisement and Publicity		3,000
	Insurance		2,000
	Taxes		1,000
	Miscellaneous Expenditure		2,000
		Total	**24,000**

(v)	**Total recurring expenditure (per month)**	
	(I+II+III+IV)	65,13,000
(vi)	**Total working Capital**	
		1,95,39,000

5. Total Capital Investment

(i) Fixed Capital		23,00,000
(ii) Working Capital		7,81,56,000
	Total	**8,04,56,000**

G. MACHINERY UTILISATION

The suggested plant and machinery & is sufficient to achieve the target.

H. FINENCIAL ANALYSIS

1. Cost of Production (Per Year)

Total recurring cost per year	23,44,68,000
Depreciation on building @ 5%	35,000
Depreciation on Machinery & Equipment@ 10%	1,10,000
Depreciation on Office Equipment @ 20%	40,000
Interest on total capital investment @ 12%	96,54,720
Total cost of production	**23,43,07,720**
Or Rs.	**23,43,00,000**

2. Turn Over (Per Year)

Item	Qty.	Rate	Value (Rs.)
Silver Plating	10,000 Sq. Mtrs.	30,000	30,00,00,000

3. Net Profit (Per Year)

T.O.	-	C.P.	=	Profit
30,00,00,000	-	23,43,00,000	=	6,57,00,000

4. Net Profit Ratio = $\frac{\text{Net Profit per year x 100}}{\text{Turn Over per year}}$

= $\frac{6,57,00,000 \times 100}{30,00,00,000}$ = 21.9%

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

= $\frac{6,57,00,000 \times 100}{8,04,56,000}$ = 81 %

6. Break-even Point (% of total production envisaged)

(i) Fixed Cost

(a) Depreciation (on machine & equipment)	1,10,000
(b) Depreciation on office equipment	40,000
(c) Depreciation on building	35,000
(d) Interest on total investment	96,54,720

(e) Insurance		24,000
(f) 40% of salary and wages		2,54,400
(g) 40% other contingent expenses		1,05,600
	Total Fixed Cost (FC)	**1,02,23,720**
	Say	**1,02,24,000**

(ii) Net Profit (Per Year) 6,57,00,000

$$BEP\% = \frac{F.C. \times 100}{F.C. + Profit}$$

$$= \frac{1,02,24,000 \times 100}{1,02,24,000 + 6,57,00,000}$$

$$= \frac{1,02,24,000 \times 100}{7,59,24,000} = 13.4\%$$

XXL. LIST OF MACHINERY AND EQUIPMENT SUPPLIES

1. M/s. Jindal Electrical, 390 A Ind. Area, A Ludhiana - 141003
2. M/s. Usha Rectifier Co-op (I) Ltd. 12/1 Mathura Rd. Faridabad
3. M/s. Delta Chemicals P. Ltd. Kamani Chambers, Nicol Road, Ballard Estate Bombay-1
4. M/s. Bright Metal Indls. AK.-13 Arakashan Road, Paharanganj, New Delhi-55
5. M/s. Delta Chemicals P. Ltd. Delta House, J-1 Cama Indls. Jone Goregoan (E) Bombay-63

RAW MATERIAL SUPPLIERS

(i) M/s. Delta Chemicals P.Ltd Delta House, J-1 Cama Indls. Jone Goregoan (E) Bombay-63

(ii) M/s. Platewal Processes & Chemicals, Padra Road Atladra, Vadodara-390012

(iii) M/s. Canning Mitra Phoenic Ltd. Eucharistic Congress Bldg. III,5, Convent street, Bombay-39