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Anti-Corrosive Paints Based on CNSL Resin

PRODUCT CODE	:	35221
QUALITY AND STANDARDS	:	Standard Anti-Corrosive Paints
PRODUCTION CAPACITY	:	Qty. : 100 M.T. (per year)
MONTH AND YEAR OF PREPARATION	:	January, 2003
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Introduction

Corrosion is a natural phenomenon. Due to various types of pollution, corroding factors are on the increase. Hence corrosion prevention is of prime importance in day-to-day activities. One of the natural products with versatile utility in prevention of corrosion in CNSL (Cashew Nut Shell Liquid). This oil is available in plenty from cashew industry as a by-product. CNSL is treated and polymerized to give resins which will act as good coating materials. These resins are used in anti-corrosive protective coatings.

The most important use is in painting marine vessels and finishing boats. These paints are used in chemical plants for protecting the machinery from corrosion. It is also used in structural application, where more exposure to heat and sun-light is there.

Market Potential

There is good market potential for these type of primers in the country; more so in the coastal states where finishing boats and vessels are in plenty. As Chemical industry is expanding rapidly, the concept of giving protection to chemical plants is also on the increase. As more and more stress is laid on preventive maintenance, increasing use of anti-corrosive paints is anticipated.

Basis and Presumptions

i. The production capacity is on single shift of 8 hours per day and 25 working days per month basis with 75% capacity utilization.

ii. The cost of Plant and Machinery, Raw-materials, selling price of finished products etc. are the price collected at the time of

preparation of project profile and may vary depending upon location, makers, market and other various reasons.

iii. The labour wages has been taken on the basis of the minimum wages Act of the State Government.

iv. Interest rate of 14% on fixed capital and 14% on working capital.

v. Margin money taken @ 25% of project cost.

IMPLEMENTATION SCHEDULE

One year

i. Project report preparation, registration, local application, etc. -2 months.

ii. Placing of order for machinery and equipments, delivery, erection, etc. -6 months.

iii. Electrification, procurement of raw-materials, trial production -3 months.

iv. Commercial production -1 month.

TECHNICAL ASPECTS

Process of Manufacture

The paint manufacture consists of the following basic procedures:

1. Mixing the pigment with sufficient vehicle (Resin Solution) to make paste which has the correct consistency for grinding.
2. Grinding the paste in a mill until the aggregates are broken down as indicated by the 'fineness of grind' test.
3. Letting down the ground paste with the remainder materials in the formula.
4. Tinting the batch to the required colour.
5. Testing to determine physical properties and performance requirements.
6. Straining, filling and packing.

In some cases, mixing and grinding are done in the same equipment. The term grinding is commonly used but the actual term is dispersion. Actually, grinding means reduction in size of the ultimate particles of pigment which does not occur in the large majority of cases. The purpose of grinding is to break down the aggregates and to disperse the ultimate particles in the vehicle. The work required for dispersion is performed by the mill or dispersing equipment, and it may be facilitated by addition of grinding aids.

The degree of dispersion in a batch of paste being ground usually is determined with a hegman grind gauge. The gauge reading at this location is taken as a measure of the degree of dispersion of the pigment. The dispersion reading for enamel paint should be at least 7 on hegman gauge whereas a flat paint may be in the range of 4 to 6 hegman gauge.

The dispersion force or action is different in the various types of equipment. In some cases, it is chiefly a shearing action in the others, it is attrition of pigment aggregates against one another, and impact or crushing occurs to a limited extent. The most common action is shearing which is a lateral motion such as cutting or tearing.

High molecular weight is necessary for high viscosity and strong back, but

large molecules do not wet the particles or penetrate the aggregate as efficiently as small molecules. For this reason volatile solvents appear to wet pigments quite readily. However, a good dispersion in a solvent may flocculate when the vehicle is added in the let down stage, therefore, enough resin is used in a solvent dispersion to coat the pigment particles and prevent flocculation.

Production Capacity (per annum)

Standard Anti-Corrosive Paints

1. Capacity – Quantity 100 MTs
2. Value Rs. 62 Lakhs

FINANCIAL ASPECTS

A. Fixed Capital

(i) Land and Building	(Rs.)
Land 500 sq. mts.	2,00,000
Built-up area: office, store etc. 500 sq. ft.	2,50,000
Factory shed 2000 sq. ft.	3,00,000
Total	7,50,000

(ii) Plant and Machinery		(Rs.)
a.	Mild steel ball mill-500 Ltrs.cap. with 10 HP motor-1 No.	2,00,000
b.	Planetary mixer 200 Ltrs with 5 HP motor	80,000
c.	Triple roll mill-1 No. 6" × 12"	1,70,000
d.	Paint storage tank 1000 ltrs. 3 Nos.	75,000
e.	Platform weighing balance-1 No.	20,000
f.	Solvent storage barrels - 200 ltrs. 15 Nos.	15,000
g.	M.S.(Mild Steel) Varnish Kettle 200 ltrs.-2 Nos.	26,000
h.	Laboratory equipments like balance, oven glass apparatus, viscometer, etc.	1,50,000
i.	Installation and electrification	73,600
	Total	8,09,600
	or say	8,10,000

B. Working Capital

(i) Staff and Labour (per month)		(Rs.)
a.	Chief Chemist/Paint Technologist-1 No.	9,000
b.	Skilled workers-4 Nos.	12,000

Staff and Labour (per month) Contd.		(Rs.)
c.	Unskilled workers-2 Nos.	3,600
d.	Store Clerk-cum-typist-1 No.	2,000
e.	Sales representative-1 No.	4,000
f.	Peon/watchman-1 No.	1,800
		32,400
	Perks @ 15%	4,860
	Total	37,260
	or say	37,000

(ii) Raw Materials (per month)		Kg.	(Rs.)
a.	CNSL Resin	2,500	1,50,000
b.	M.T.O. (Mineral Turpentine Oil)	3,500 ltrs.	70,000
c.	Red oxide	1,000	12,000
d.	Zinc chromate	200	30,000
e.	Bentonite	500	2,000
f.	China clay	500	2,000
g.	Linseed oil	500	30,000
h.	Cobalt napthenates	20	4,000
i.	Rosin	200	10,000
j.	Packaging drums and labels	450	30,000
	Total		3,40,000

(iii) Utilities (per month)	(Rs.)
Power	6,000
Water	1,000
Fuel	5,000
Total	12,000

(iv) Other Contingent Expenses (per month)		(Rs.)
a.	Postage and Stationery	1,000
b.	Telephone	700
c.	Taxes	2,000
d.	Repair and Maintenance	6,000
e.	Travelling and Transport	10,000
f.	Advertising and publicity	5,000
g.	Miscellaneous Expenses	2,000
	Total	26,700
Total recurring expenses		4,15,700
For three months		12,47,100

C. Total Capital Investment

a. Fixed Capital	8,10,000
b. Working Capital	12,47,100
Total	20,57,100

(i) Cost of Production and Profitability (Rs. in Lakhs)	
i. Total Cost of raw materials	40,80,000
ii. Staff and labour	4,44,000
iii. Power, water and fuel	1,44,000
iv. Other expenses	3,20,000
v. Interest on fixed capital @ 14% p.a.	2,87,994
vi. Depreciation	81,000
Total	53,56,994

(ii) Receipt by sale of 100MT of paints @ Rs. 62/ kg.	62,00,000
(iii) Gross Profit	Rs. 8,43,006
(iv) % Profit on Total Investment	Rs. 40.98%
(v) Net Profit Ratio	Rs .13.60%

(vi) Break-even Point

(1) Fixed Cost	(Rs.)
Depreciation	81,000
Interest	2,87,994
40% Salary and Wages	1,77,600
40% other contingent expenses	1,28,160
Total	6,74,754

$$B.E.P. = \frac{\text{Fixed Cost} \times 100}{\text{F.C.} + \text{Profit}}$$

$$= \frac{6,74,754 \times 100}{6,74,754 + 8,43,006}$$

$$= 44.46\%$$

Addresses of Machinery Manufacturer and Suppliers

1. M/s. Sphere Engineers Pvt.Ltd.
   Plot No. A-287,
   16/2, Wagle Indl. Estate,
   Thane, Mumbai-400604.
2. M/s. Sallon Dynamics
   4 Krishna Building,
   6th Khetwadi Lane,
   Mumbai-400004.
3. M/s. Bonazo Enterprises
   63, Najafgarh Road,
   New Delhi-110015.
4. M/s. Raymer Engg. Corpn.
   Crown Bldg., Uranwala Street,
   P.O. Box No. 4019, Grant Road,
   Mumbai-400021.
5. M/s. Torrance overseas Engineers Pvt. Ltd.
   754, Anna Salai,
   Chennai-600002.
6. M/s. Kusum Engg. Co. Ltd.
   25, Swallow Lane,
   Kolkata-700001.
7. M/s. Dalal Engg. Pvt. Ltd.
   36/37, Jolly Maker Chamber-II,
   Nariman point,
   Mumbai-400021.
8. M/s. Western Mfg. Co.(Bombay) Pvt. Ltd.
   Vulcan Insurance Bldg.,
   Near Nariman Road,
   Mumbai-400001.
9. M/s. The Oriental Machinery Supplying Agency Limited
   25, Rajendra Nath Mukherjee Road,
   Kolkata-700001.
10. M/s. The Pioneer Engg. Company
    57, Apollo St., Fort,
    Mumbai-400001.
11. M/s. The Ken Indl. Products Pvt.Ltd.
    7, Convent Road,
    Kolkata-700014.
12. M/s. The Terrance and Sons Ltd.
    20, Choranghee Road,
    Kolkata-700016.
13. M/s. National India Engg. Co. Pvt. Ltd.
    Botawalla Bldg.,
    Nariman Circle, Fort,
    Mumbai-400001.

Addresses and Raw Material Suppliers

1. M/s. Amrutlal Bhura Bhai and Co.
   Anand Bhawan,
   Prince Street,
   Mumbai-400002.
2. M/s. Allied Trading Co.
   39, Nagdevi Street,
   Mumbai-400003.
3. M/s. Universal Paints Corpn. Pvt. Ltd.
   39, Nagadevi St.,
   Mumbai-400003.
4. M/s. Gandhi Parekh Investment Corpn. Private Limited
   Allice Bldgs., Dr. D.N. Road, Fort,
   Mumbai-400001.
5. M/s. Techno Enterprises Pvt. Ltd.
   P-22, Swallow Lane,
   Kolkata-700001.