

## **ROAD MARKING MATERIAL**

### **1. INTRODUCTION**

Road marking materials are substitute for conventional oil paints used for marking on the roads such as dividers, zebra marking, bumps, etc. Due to their technical superiority, long life, brightness, reflective properties and ease of application make road marking material as preferred products by government and private users. In fact, all tenders for state and national highways specify to use thermoplastic road marking materials.

Such materials are formulated using variety of chemicals and minerals and as per the prescribed Bureau of Indian standards. The main requirement is the use of hydro carbon resin and reflective glass beads.

### **2. PRODUCTS AND ITS APPLICATION**

Road marking thermoplastic materials have applications in state and national highways, private buildings, colony, shopping complexes, industrial establishments, educational campuses, etc. Such materials are heated at the time of application and applied using portable machines on the road.

There are mainly two colors used for this application. White one is widely used as road marking paint and yellow is used for very specific requirements such as bumps. Now government has notified that all bumps in the country will be colored with yellow thermoplastic paint to differentiate from zebra crossing and slow speed signs.

### **3. DESIRED QUALIFICATION FOR PROMOTER**

The desired qualification may be graduate in chemistry or paint technology. The formulations play important role in costing and quality of the end product. The testing

of raw materials and finished products are also required statutorily by NHAI and other agencies.

#### **4. INDUSTRY OUTLOOK/TREND**

Infrastructure sector in India is growing very fast with higher budgetary allocation by government at central and state level. The target of constructing 40kms of road per day will increase the demand for road markings. Moreover private places such as malls, campuses and commercial spaces also use road marking in their premises. The future of this industry is very bright as new road construction and old one both require marking again and again.

#### **5. MARKET POTENTIAL AND MARKETING ISSUES, IF ANY**

The government is committed to develop excellent infrastructure of roads throughout the country. In the current year, highest allocation of budget is made for road construction in various parts of the country. Moreover, per day construction of road has increased from 15 km to 28 km. This has created substantial demand for thermoplastic material. Moreover, exiting roads needs repainting periodically.

Apart from road construction application, it is also used in commercial and industrial establishments. The growth in GDP and high stress on construction activity has also led to increase demand of thermoplastic material.

#### **6. RAW MATERIAL REQUIREMENTS**

The major raw materials required are hydrocarbon resin, mineral powders, glass beads, plasticizer, lubricants, pigment, etc. All the raw materials except hydro carbon resin and glass beads are produced and available in India. Resin and glass beads are imported from China, South Korea, Europe, etc. The costing of the final product is mainly depends on the cost of resin and glass beads.

#### **7. MANUFACTURING PROCESS**

In fact, production of thermoplastic material is a physical mixing of appropriate ingredients in desired quantity. The choice of minerals and other additives will be

influenced by availability and cost. One can play around with this raw material and control cost.

In the manufacturing process, mineral powders, additives and hydrocarbon resins are first mixed in ribbon blender for about ten minutes and then resin and glass beads are added and mixed together for another twenty minutes. It is very important to have uniform distribution of all ingredients in the final product. At the end of process, material is removed by screw conveyor and filled in 25 kg. plastic woven bags. The product is tested in the laboratory particularly for reflective index using refractometer.

## 8. MANPOWER REQUIREMENT

For the production of PTFE tape following category of manpower will be required for day to day production. Annual wages are also worked out.

Sr. No.	Designation of Employees	Monthly Salary ₹	Number of employees required	Value Rs. in lacs
1	Unskilled man power	4,000	4	1.92
2	Supervisor	10,000	1	1.20
3	Skilled man power	5,000	2	1.20
4	Sales Man	6,000	1	0.72
5	Accountant	6,000	1	0.72
6	Office boy	4,000	1	0.48
	<b>Total</b>		10	6.24

## 9. IMPLEMENTATION SCHEDULE

The project can be implemented within six months from the date of tying up of finance as number of equipment are less and can be started in a rented premises.

## 10. COST OF PROJECT

The cost of project as per market rate of factory building, machinery, miscellaneous items, working capital margin and preliminary and pre-operative expenses works out as under:

Sr. No.	Particulars	₹ in Lacs
1	Land	30.00
2	Building	20.00
3	Plant & Machinery	15.00
4	Furniture, Electrical Installations	1.50
5	Other Assets	0.50
6	Margin for Working Capital	10.11
	<b>Total</b>	<b>77.11</b>

## 11. MEANS OF FINANCE

Based on the present norms of the bank, means of finance is worked out as under

Sr. No.	Particulars	₹ in Lacs
1	Promoter's contribution	23,13,300.00
2	Bank Finance	53,97,700.00
	<b>Total</b>	<b>77,11,000.00</b>

## 12. WORKING CAPITAL CALCULATION

Working capital required for storage of raw materials and finished goods, monthly overheads, goods in process, receivables and trade credit is worked out based on the present norms of the bank as under.

Sr. No.	Particulars	Gross Amt.	Margin %	Margin Amt.	Bank Finance
1	Inventories	13.53	40%	-	13.53
2	Receivables	17.08	40%	-	17.08
3	Overheads	1.14	50%	-	1.14
4	Creditors	-6.77	40%	-	-6.77
	<b>Total</b>	<b>24.99</b>		<b>-</b>	<b>24.99</b>

### 13. LIST OF MACHINERY REQUIRED AND THEIR MANUFACTURERS

For the production of road marking paint, the machinery required are screw conveyor, ribbon blender, weighing scale, liquid pump, sieve shaker & laboratory equipment for testing of final product.

- Varahi Industries  
Plot No. 83/6,  
Near Kotak Mahindra Bank Phase 1,  
G. I. D. C. Eatate, Vatva,  
Vatva Industrial Estate,  
Ahmedabad - 382445,  
Gujarat
- Watcco Engineering  
1 Shabari Giri,  
behind Tekawade petrol pump  
opp Akashwani Hadapsar,  
Pune,  
Maharashtra

### 14. PROFITABILITY CALCULATIONS

The profitability is worked out as under after taking into account all variable and fixed expenses as under.

Sr. No.	Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
1	Sales	143.5	164	184.5	184.5	184.5
2	Raw Materials & Other direct inputs	117.376	134.144	150.912	150.912	150.912
3	Gross Margin	26.124	29.856	33.588	33.588	33.588
4	Overheads except interest	4.774	5.456	6.138	6.138	6.138
5	Interest	1.351	1.544	1.737	1.737	1.737
6	Depreciation	1.911	2.184	2.457	2.457	2.457
7	Net Profit before tax	18.088	20.672	23.256	23.256	23.256

The proposed unit will have the production capacity of 500 MT per year. The unit cost of power is taken at Rs. 8. The depreciation on building is taken at the rate of 5% whereas for plant and machinery it is at 10%.

The sales price of road marking material is taken at the rate of Rs. 41,000 per MT.

## 15. BREAKEVEN ANALYSIS

The Break-Even point as percentage of targeted sales works out as under.

Sr. No.	Particulars		Value
			<b>Year-1</b>
1	Sales Realization	Rs. Lacs	205.00
2	Variable costs	Rs. Lacs	167.68
3	Fixed costs incl. interest	Rs. Lacs	6.82
4	BEP = $FC/SR-VC \times 100 =$		18.26%

## 16. STATUTORY/ GOVERNMENT APPROVALS

There is no specific statutory requirement for paint industry. However MSME & GST registration, IEC Code for Export of end products and local authority clearance may be required for Shops and Establishment, for Fire and Safety requirement and registration for ESI, PF and Labour laws may be required if applicable. Entrepreneur may contact State Pollution Control Board where ever it is applicable.

## 17. BACKWARD AND FORWARD INTEGRATION

For backward integration, promoter may think of mineral grinding and processing. In case of forward integration, it is possible to add more products related to road construction and safety such as signage, crash barriers and cat eyes.

## 18. TRAINING CENTERS/COURSES

Hydrocarbon resin suppliers provide technical information on how to formulate road marking material. This is very useful for new entrepreneurs moreover; help can be

taken from department of paint technology, Mumbai university and paint technology division of Harcourt Butler Technological Institute, Kanpur.

Udyamimitra portal ( link : [www.udyamimitra.in](http://www.udyamimitra.in) ) can also be accessed for handholding services viz. application filling / project report preparation, EDP, financial Training, Skill Development, mentoring etc.

Entrepreneurship development programs help to run businesses successfully and are available from Institutes like Entrepreneurship Development Institute of India (EDII) and its affiliates all over India.

**Disclaimer:**

Only few machine manufacturers are mentioned in the profile, although many machine manufacturers are available in the market. The addresses given for machinery manufacturers have been taken from reliable sources, to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further the same have been given by way of information only and do not carry any recommendation.