

## DISPOSABLE PLASTIC CUP

### Introduction:

The disposable plastic cups are manufactured by thermoforming technique. They are fast replacing conventional cups. Ice-cream and other dairy products are packed in disposable cups. Besides Ice-cream industry, hotels, restaurants, canteens etc. have been increasingly using disposable cups as against conventional glass-wares or ceramic cups. Disposable cups are mainly used for food items and are made out of polypropylene or polystyrene sheets. Sheets having thickness 0.35mm to 18mm are used for these items in thermoforming machine. The disposable cups are gaining popularity due to attractive look, low weight for container, ease of transportation and low impermeability. Organizations like Railways, Airlines are using disposable cups for serving coffee, tea etc. now-a-days.

### Market Potential:

Due to the recent change in the life style of urban class the demand for disposable cups is increasing at a rapid rate. Plastic disposable cups are used by Ice-cream industry, hotels, restaurants, canteens etc. but the major customer of disposable cups is ice-cream industry. The per capita consumption of ice-cream in India is far below compared to the level of consumption in developed countries. However, the Indian Ice-cream industry is going faster and according to an estimate the annual rate of growth of Indian Ice-cream Industry is approximately 20 – 25%. Considering the above factors, demand of disposable cups is expected to increase faster in future. Huge quantities plastic disposable cups are being used during festivals/functions/party/picnic time. Besides organization like Railways, Airlines are using a good quantity of plastic disposable cups.

### Plant Capacity:

The production basis for a typical tiny unit would be as under:

Working hours/day	: 8 (1 shift)
Working days in a year	: 300
Annual Production capacity	: 60,00,000 Nos. plastic disposable cups.

The unit has been assumed to operate at 70%, 80% and 90% of its installed capacity in the first, second and third year and onwards of its operation.

### Raw Material:

The main raw material required for manufacturing plastic disposable cups is High Impact Polystyrene (HPIS) sheet(15 MT per annum).

### Process:

Polypropylene/Polystyrene sheet feeding reels of preset length is dragged from bobbin reel in the thermoforming plant. The conveyor chains carry the sheet through the heater assembly to the forming table. The heated sheet is punched to form the shape of the mould. The cups thus formed are stocked and the punched waster sheet is wound on scrap sheet winder. To get printed cups, the sheets are printed before forming into cup. Taking 200ml. cup as yard stick as it is mostly used for serving coffee/tea the installed capacity of the machine with 5 cavities mould is approximately 52500 cups per shift. In terms of weight, a 200ml cup made of 0.7mm thick High Impact Polystyrene sheet is approximately 2.58 gms. Therefore, the total weight of output per shift is 135 Kg. The average weight of sheet required per cup is 3.2gms. (which implies wastage of approximately 0.62gms per cup). As the raw material wastage is very high the scrap needs to be recycled. The scrap can be ground and extruded in sheet extruder.

### Machinery:

The major equipment required by the unit for manufacturing plastic disposable cups are as follows:

- Automatic thermoforming machine
- Die Punch for cups
- Other accessories (Air compressor)
- Sheet extruder and scrap grinder
- Testing equipment

**Location:**

The suitable locations for the project may be –

- Kokrajhar, Tezpur, Dibrugarh, Silchar in Assam.
- Dimapur in Nagaland.
- Naharlagun in Arunachal Pradesh.
- Agartala in Tripura.
- Barapani in Meghalaya.
- Imphal in Manipur
- Gangtok, Jorhang in Sikkim

**Infrastructure:**

The basic infrastructure required are :

Land	:	5,000 sq.ft.
Building	:	1,500 sq.ft.
Power	:	20 KW
Water	:	1,000 Ltr. Per day.
Manpower	:	15 Nos. (Administrative (4), Factory Staff (11),

**Total Capital Requirement:**

The total capital requirement including fixed capital and working capital is estimated at Rs 27.70 lakhs as follows. Of this, the project cost comprising fixed capital and margin money on working capital is Rs 26.30 lakhs.

**A. Fixed Capital: (Rs in lakh)**

Land		Rented
Building		Rented
Machinery		20.00
Miscellaneous fixed assets		3.50
Preliminary and pre-operative expenses		<u>1.50</u>
	<b>Total (A)</b>	<b>25.00</b>
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**B. Working Capital:**

Raw materials & Packing material	1 month	0.40
Finished goods	2 weeks	0.70
Working expenses	1 month	0.70
Receivables	2 week	<u>0.90</u>
	<b>Total (B)</b>	<b>2.70</b>
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	<b>Total (A)+(B)</b>	<b>27.70</b>

Note: Working capital may be financed as:

Bank Finance	.....	Rs 1.40 lakhs
Margin Money	.....	Rs <u>1.30 lakhs</u>
		<b>Rs 2.70 lakhs</b>
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**Means of Finance:**

The project cost of Rs 26.30 lakhs including margin money for working capital may be financed as under:

Promoter's contribution (35%)	....	Rs 9.20 lakhs
Term Loan (65%)	....	Rs <u>17.10 lakhs</u>
		<b>Rs 26.30 lakhs</b>
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### Operating Expenses:

The annual operating expenses are estimated at Rs 18.30 lakhs (70% capacity utilization) as given below:

	(Rs in lakhs)
1. Raw materials	5.00
2. Utilities	1.00
3. Wages & Salaries	6.00
4. Overheads	0.80
5. Selling expenses @ 2.5% on annual sales	1.00
6. Interest on term loan (13.50%)	2.30
7. Interest on Bank Finance for Working Capital (12%)	0.20
8. Depreciation @10%	<u>2.00</u>
	<b>18.30</b>
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### Sales Realization:

The basis on which average ex-factory sales realization from the sale of plastic disposable cups at 100% capacity utilization is as follows:

Items	Nos.	Unit Sales Price (Rs)	Annual Sales Price (Rs)
Plastic Disposable Cups	60,00,000	0.50	30,00,000
Sale of re-cycle materials	L.S.	--	2,00,000
TOTAL			32,00,000

Based on this the annual sales realization is estimated to be Rs 32.00 lakhs and at 70% capacity utilization the same is Rs 22.40 lakhs.

### Profitability :

Based on the sales realization and the operating expenses, the profit would be Rs 4.10 lakhs per year (70% capacity utilization). This works out to a return on investment of 17%. The plant will break even at 51% of the rated capacity.

### Highlight:

The major highlights of the project are as follows::	Rs 27.70 lakhs
Promoter's contribution	: Rs 9.20 lakhs
Annual sales realization (70% cap.)	: Rs 22.40 lakhs
Annual operating expenses (70% cap.)	: Rs 18.30 lakhs
Annual profit (pre-tax)	: Rs 4.10 lakhs
Pre-tax Return on Sales	: 18 %
Break Even Point	: 51%
No.of persons employed	: 15

### List of Machinery Suppliers:

1. M/s Klockner Windsor India Ltd.  
E-6-UZ Road, Wagle Industrial Estate,  
Thane (Maharashtra)  
PIN\_ 400 604
2. M/s Wonderpack Industries P.Ltd.  
72, 1st floor, Shivalaya Mansion,  
Hamington Road, Mumbai- 400 008

### List of Raw Materials Suppliers:

1. M/s Polychem Ltd.,  
7, Jamshedji Tata Road,  
Churchgate Reclamation,  
Mumbai – 400 020
2. M/s East Englio Plastics (India) Ltd.  
23, Camac Street,  
Kolkata – 700 016

3. M/s Isimat India Screen Printing Machinery Pvt. Ltd.  
29, Apurva Industrial Estate,  
Makvana Road, Andheri Kurla Road,  
Andheri (East), Mumbai – 400 059
3. M/s Hindustan Polymers Ltd,  
Copalapatnam,  
Vishakhapatnam – 530 027
4. M/s Solex Machines,  
C, 1/510, GIDC, Gundlav,  
396 035 Distt. Valsad,  
Gujarat
4. M/s Forenko, Govt. Industrial Estate,  
Plot No. 8, Kandivaili (West),  
Mumbai – 400 067.