

## **P.P.AIR TIGHT CONTAINERS**

### **1. INTRODUCTION**

Household containers with tight fitting lids are produced from HDPE or PP resins by the process of injection moulding. They are made in different shapes and sizes for packing of food and non-food products. In fact, their end use applications are unlimited. The desirable characteristics are lead proofness and preventing air entry into the container through the lid recess. This helps to provide extended shelf-life to the food products, which are stored and also, prevent entry of insects.

With the vibrant middle income class in India, the market for consumer goods and consumer durables has registered high growth in the recent past. There has been preference for replacement of sheet metal, die cast aluminum, and wood, tin, glass/porcelain and other conventional materials by injection moulded plastic products.

PP airtight containers are used for storing a wide variety of food products including confectionery, biscuits, dry fruit, breakfast cereals and spice cartons.

### **2. MARKET POTENTIAL**

The Plastics ware sector constitutes 20% of PP consumption in injection moulded Sector. In 2004 Polypropylene consumption in Houseware & Thermoware was 99 KT and is expected to reach 180 KT by 2010-11.

### **3. BASIS & PRESUMPTIONS**

- (i) The output capacity is taken as 70 Kgs/hr. The unit will work at 20 hrs. per day for 25 working days in a month and 300 days in a year. The output capacity may vary from machinery to machinery and the cost of machinery may also vary from supplier to supplier.
- (ii) The time period for achieving the full envisaged capacity utilisation is six months
- (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 12 per cent
- (v) The margin money requirement for this project is 30 per cent
- (vi) The pay back period of this project is 5 years
- (vii) The rate of land is taken @ Rs. 500/-per sq. mtr. and construction charges are taken @ Rs. 3500 per sq. mtr. This may also vary from place to place.
- (viii) The present profile has to be updated taking into prevailing cost of land, building, machinery etc. at the time of implementation of the project

#### **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 Week
Time required for acquiring the loan		
Machinery procurement, erection and commissioning	:	Three months
Recruitment of labourer etc.	:	One month
Trial runs	:	One month

#### **5. TECHNICAL ASPECT**

##### **MANUFACTURING PROCESS**

Screw preplasticiser type (in line or out of line)

For moulding of PP items, it is preferred to use a screw preplasticised system (in line). The material is fed to the machine through a hopper. The barrel of the machine is heated with temperature setting required to melt the material. The material is injected into the mould halves by the forward movement of the screws into the cavity. The mould is cooled by the passage of cooling water to freeze the molten material.

The pressure of the screw is held for some time and then it retracts by screw rotation. At the end of the moulding and cooling cycle the mould halves open and the moulded item is extracted manually or automatically. Thus the entire moulding cycle comprising injection pressure, cooling and the idle time for extracting the mould is completed.

## 6. **QUALITY & STANDARD**

The containers may be manufactured as per the standard specification specified by the customers or as per IS : 10171

## 7. **PRODUCTION CAPACITY** (Per Annum)

- (a) Quantity (M.T.) : 420
- (b) Value (Rs.) : 4,62,00,000.00

## 8. **TOTAL POWER REQUIREMENT**

Total connected load (KW) : 170

## 9. **POLLUTION CONTROL MEASURES**

The unit does not create any pollution. However, a proper ventilation should be made in the processing area for the better circulation of the fresh air.

## 10. **ENERGY CONSERVATION**

Entrepreneurs may select energy efficient machinery and proper planning has also to be made for saving energy in the unit.

## 11. **FINANCIAL ASPECT**

### A. **FIXED CAPITAL**

- i) **LAND & BUILDING:** Area sq. mtrs. Rate Rs. per Sq. mtr.  
(Rs.)

Land	300	300	90,000.00
Building	170	3500	5,95,000.00
			-----
		Total :	
6,85,000.00			-----

ii) MACHINERY & EQUIPMENT:

(Rs.)	<u>Sr. No.</u>	<u>Description of machines</u>	<u>Qty.(Nos.)</u>
	(a)	Production Unit	
	1)	Injection Moulding m/c. 130 T	4
		86,00,000.00	
	2)	Scrap Grinder	
		1,00,000.00	
	3)	Cooling Tower	
		2,00,000.00	
	(b)	Testing Equipment & Other Accessories	
		1,00,000.00	
			-----
			90,00,000.00
	(c)	Electrification & Installation @ 10% of cost & machinery	
		9,00,000.00	
		(a) & (b)	
	(d)	Pre-operative expenses	
		1,00,000.00	
		Total cost of machinery & equipment ( a to d )	
		1,00,00,000.00	
	(e)	Cost of Moulds & Dies	
		4,00,000.00	
	(f)	Cost of Office Equipment/Furniture/Computers etc.	
		3,00,000.00	
		Total:	-----
			1,07,00,000.00

TOTAL FIXED CAPITAL (i) + (ii)  
1,13,85,000.00

B. WORKING CAPITAL

i) Staff and Labour (Per Month)

Designation (Rs.)	Nos.	Salary (Rs.)	
Production Engineer/Manager	01	20,000.00	20,000.00
Sales Executive	02	10,000.00	20,000.00
Accountant	01	10,000.00	10,000.00
Store Keeper-cum-Clerk	01	8,000.00	8,000.00
Watchman	03	4,000.00	12,000.00
Supervisor	03	5,800.00	17,400.00
Skilled Workers	12	5,000.00	60,000.00
Unskilled Workers	12	4,000.00	48,000.00
			1,95,400.00
Add perquisite @ 10% of the Salary			
			19,540.00
Total:			2,14,940.00
Or Say Rs.			2,15,000.00

ii) Raw Material (Per Month) Qty. (MT) Rate Rs./MT  
(Rs.)

	a)	Polypropylene	35	75,000	
26,25,038.00					
	b)	Colour			
15,000.00					
					-----
					26,40,000.00
					-----
	iii)	<u>Utilities</u> (per month):			(Rs.)
		a)	Power		2,55,000.00
			(60% of efficiency x 170 KW 500 hrs. x Rs. 5 per unit)		
		b)	Water		
2,000.00					
					-----
----				Total:	2,57,000.00
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	iv)	Other Contingent Expenses (Per month)			(Rs.)
		yy)	Repairs and Maintenance		
			3,000.00		
		zz)	Transportation Charges		5,000.00
		aaa)	Postage and stationery		2,000.00
		d)	Telephone/Fax/Computer		
			2,000.00		
		e)	Consumable Stores		
			2,000.00		
		f)	Advertisement & Publicity		
			4,000.00		
		g)	Insurance		10,000.00
		h)	Miscellaneous Expenses		
			2,000.00		
				Total:	-----
					30,000.00
					-----

**12. TOTAL WORKING CAPITAL ( Per Month )**  
(Rs.)

i) Staff and Labour	2.15.000.00
ii) Raw Material	
26,40,000.00	
iii) Utilities	2,57,000.00
iv) Other Contingent Exp.	30,000.00
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	Total: 31,42,000.00
	-----
Working Capital for 3 months	94,26,000.00

**13. TOTAL CAPITAL INVESTMENT**  
(Rs.)

A. Fixed Capital	
1,13,85,000.00	
B. Working Capital for 3 months	
94,26,000.00	
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	Total: 2,08,11,000.00
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**14. FIANCIAL ANALYSIS**

A. Cost of Production (per year) (300 days)	
(a) Total Recurring Cost	
3,77,04,000.00	
(b) Depreciation on building @ 5%	
29,750.00	
(c) Depreciation on machinery& equipment @ 10%	
10,00,000.00	

(d) Depreciation on Dies & Moulds @ 20%

80,000.00

(e) Depreciation on office equipment @ 20%

60,000.00

(f) Interest on total Capital Investment @ 12%

24,97,320.00

Total: -----  
4,13,71,070.00  
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Or Say Rs.

4,13,71,000.00

B. Sales/Turn over (per year)

<u>Item</u>	Qty.( MT)	Rate (MT)	Value (Rs.)
PP Air Tight Container	420	1,10,500	4,62,00,000.00

C. Net Profit (Per year)

Sales(Rs)	-	Cost of Production (Rs.)	=	Profit
(Rs.)				
4,62,00,000	-	4,13,71,000	=	
48,29,000.00				

D. Net Profit Ratio =  $\frac{\text{Net Profit} \times 100}{\text{Sales}}$   
=  $\frac{48,29,000 \times 100}{4,62,00,000.00}$  = 10.45 %

E. Rate of Return =  $\frac{\text{Net Profit} \times 100}{\text{Total Capital Investment}}$   
=  $\frac{48,29,000 \times 100}{2,08,11,000.00}$  = 23.20 %

F. Break-even Point

Fixed Cost (Per Year) Rs.



- a) Depreciation on Building @ 5%  
29,750.00
- b) Depreciation on Machinery & Equipment @ 10%  
10,00,000.00
- c) Depreciation on Moulds/Dies & Office Equipment  
2,80,000.00  
@ 20%
- d) Insurance 1,20,000.00
- e) Interest on total capital investment  
24,97,320.00
- f) 40% of salary and wages  
10,32,000.00
- g) 40% of other contingent expenses  
96,000.00

	Total:	50,55,070.00
	Or Say Rs.	50,55,000.00

Net Profit (Per Year)

$$\begin{aligned}
 \text{B.E.P. \%} &= \frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Net Profit}} \\
 &= \frac{50,55,000 \times 100}{50,55,000 + 48,29,000} \\
 &= \frac{50,55,000 \times 100}{98,84,000} \\
 &= 51.14 \%
 \end{aligned}$$