

Disposable Syringes

PRODUCT CODE	:	N.A.
QUALITY AND STANDARDS	:	As per drug control specification
PRODUCTION CAPACITY	:	Qty. Pieces
		2 ml 57.6 Lakhs
		5 ml 57.6 Lakhs
MONTH AND YEAR OF PREPARATION	:	January, 2003
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INTRODUCTION

Disposable Syringes are made of plastic material and are used in the field of medical and veterinary science. Due to their availability in sterilized condition, ready to use, and cost effectiveness, disposable syringes are fast replacing the age-old glass syringes. Moreover, the horror of AIDS worldwide has almost dispensed with the reuse of syringes and the demand of disposable syringe has increased phenomenally. Disposable syringes are mostly injection moulded from polypropylene. Syringes are available in sizes of 1 ml, 2ml, 5 ml, and 10 ml, in a variety of designs and consist of either two or three components construction. The number and size of injection moulding machines required depend upon syringe construction, number of mould cavities, annual production.

MARKET POTENTIAL

Disposable syringe has a wide market potential. The age-old glass syringes are very fast becoming obsolete. In the Eastern Region of the country there is no unit manufacturing this product. Some of the units manufacturing this product are in other parts of the country.

1. Steryware, Faridabad (2) Cadilac (3) Dispovan, Faridabad (4) Cadilac hospital product, Ahmedabad (5) Surgiplus, Ahmedabad (6) Transplastic Pondicherry (7) Disposable mediate, Chennai (8) Suru Chemicals, Mumbai (9) Albert David, M.P. (10) Manoj Surgical, Indore. Some of these units are 100% export-oriented units. In view of the fast expanding market the prospects of disposable syringe are very bright.

BASIS AND PRESUMPTIONS

The profile is drawn on the basis of the following presumptions:

Working hours/day	8 hours
Working days	25
Total No. of working hours	2400
Working efficiency	75%
Time period for achieving max. Capacity utilization	3rd year from the date on which Production will be started.
Labour charges	As per minimum wages act of State Govt.
Margin Money	25% of Capital Investment
Rate of interest on fixed and working capital	14%
Operative period of the project	10 years

Value of machinery and equipment is estimated on the basis of prevailing cost of the market.

IMPLEMENTATION SCHEDULE

Project implementation will take a period of 8 months from the date of approval of the scheme. Break-up of activities with relative time for each activity is shown below:

Nature of Activities	Period (per month) (Estimated)
1. Scheme Preparation and approval	0-1
2. SSI Provisional registration	1-2
3. Sanction of loan	2-3
4. Clearance from Pollution Control Board	2-5

5. Placement of order for delivery of M/c.	3-4
6. Installation of machines	4-5
7. Power connection	6-7
8. Trial run	6-7
9. Commencement of production	9 onwards

TECHNICAL ASPECTS

Process of Manufacture

Production of disposable syringe requires special injection moulding machines and special moulds. M/s. Klockner Windsor has introduced Ferromatic Injection Moulding machine for this purpose. Raw material required is polypropylene. It is fed into the injection moulding machine and moulded in chilled condition to get better clarity. The moulded syringes is then assembled with the needle in automatic assembly machine. The whole assembly is then sterilized in sterilization plant using ethylene oxide. The completed syringe is then blister packed in automatic packing machine.

Quality Control and Standards

The product should conform to drug control specification and drug license should be obtained for production of this item.

Production Capacity (per month)

2 ml size- 4,80,000 Nos.
5 ml size- 4,80,000 Nos.

Pollution Control

No special pollution control measures are needed for manufacture of this item.

Energy Conservation

Proper maintenance of the power operated machines and judicious use of them will conserve energy.

FINANCIAL ASPECTS

A. Fixed Capital

(i) Land and Building	Area sq. mtrs.	Rented	(Rs.)
Land Built up area	1000 350	Rented	20,000

(ii) Machinery and Equipments

Description	Qty. (Nos.)	Value (Rs.)
(a) Production Unit		
Zigma Injection Moulding Machine	1	24,50,000
Sterilization plant (Ethylene Oxide)	1	6,50,000
Blister Packing Machine	1	9,00,000
Automatic Packing Machine	1	25,00,000
Scrap Grinding Machine	1	65,000
Weighing Scale	1	50,000
Air Compressor	1	60,000
Water Pump	1	15,000
Chilling Plant	1	1,50,000
Testing Equipment		20,000
Electrification and Installation		6,85,000
Firefighting Equipment		25,000
Set of Mould for 2 ml (16 cavities for barrel, 24 cavity for plunger)		5,00,000
Set of Moulds for 5 ml Syringe (16 Cavity for barrel, 16 cavity for plunger)		7,00,000
(iii) Total Cost of Office Equipment/ Working Table etc.		
		87,70,000

(iv) Pre-operative Expenses	(Rs.)
(Project, non-refundable deposits)	10,000
Total fixed capital (i+ii+iii)	87,80,000
Say	88,00,000

B. Working Capital (per month)

(i) Personnel

Designation	Nos.	Salary (Rs.)	Total (Rs.)
Works Manager	1	10,000	10,000
Sales Executive	1	5,000	5,000
Chemist	1	5,000	5,000
Accountant	1	5,000	5,000
Steno/Clerk	1	3,000	3,000
Peon/Watchman	2	1,500	3,000
Operators	6	4,000	24,000
Semi-skilled workers	4	2,000	8,000
Unskilled workers	8	1,500	12,000
<i>Perquisites @ 15% of Salaries</i>			11,250
Total			86,250
or Say			86,000

(ii) Raw Materials Including Packaging Requirement (per month)

Particulars	Qty. Kg.	Rate per Kg.	Value (Rs.)
Polypropylene including 2% wastage	6855	41	2,81,055
Needles including 2% wastage	9,80,000	0.15	1,47,000
Packing Material			1,22,000
Total			5,50,055
or Say			5,50,000

(iii) Utility (per month)	(Rs.)
Power total connected 30 kW (Using 60% Load only)	15,000
Water	2,000
Total	17,000

(iv) Other Contingent Expenses (per month) (Rs.)

Postage and Stationery	1,000
Telephone	2,000
Consumable Store	1,000
Repair and Maintenance	2,000
Transportation Charges	1,000

Advertisement and Publicity	2,000
Rent	20,000
Miscellaneous Expenditure	1,000
Total	30,000

(v) Total Recurring Expenditure (per month) Rs. 6,83,000

(vi) Total Working Capital (on 3 month basis) Rs. 20,49,000

C. Total Capital Investment

1. Fixed Capital	88,00,000
2. Working Capital	20,49,000
Total	1,08,49,000

Machinery Utilization

The unit will work 8 hrs. per day producing 4800 pieces per hour of 2 ml and 5 ml syringes weighing 2.5 gms. and 4.5 gms. respectively. 2% extra raw material is taken as wastage.

FINANCIAL ANALYSIS

1. Cost of Production (per year)	(Rs.)
Total recurring cost per year	81,96,000
Depreciation on machineries @ 10%	7,57,000
Depreciation on moulds @ 20%	2,40,000
Depreciation on office equipment @ 20%	4,000
Interest on total Capital investment @14%	15,18,860
Total	1,07,15,860
or Say	1,07,16,000

2. Turnover (per year)

Item	Qty. Nos.	Lakhs	Rate (Rs.)	Value (Rs.)
Disposable Syringe	2 ml	57.6	1	57.60
Disposable Syringe	5 ml	57.6	1.40	80.64
Total (Lakhs)				138.24

3. Net Profit (per year)

$$\begin{aligned} \text{Profit} &= \text{Turnover} - \text{Cost of Production} \\ &= \text{Rs. } 1,38,24,000 - 1,07,16,000 \\ &= \text{Rs. } 31,08,000 \end{aligned}$$

4. Net Profit Ratio

$$\begin{aligned} &= \frac{\text{Net profit per year} \times 100}{\text{Turnover}} \\ &= \frac{31,08,000 \times 100}{1,38,24,000} \\ &= 22.48\% \end{aligned}$$

5. Rate of Return

$$\begin{aligned} &= \frac{\text{Net profit per year} \times 100}{\text{Total investment}} \\ &= \frac{31,08,000 \times 100}{1,08,49,000} \\ &= 28.64\% \end{aligned}$$

6. Break-even Point (% of Total Production Envisaged)

(i) Fixed Cost	(Rs.)
Depreciation on machinery and equipment	7,57,000
Depreciation on office equipment	5,000
Depreciation on moulds @ 20%	2,45,000
Interest on total Capital investment	15,18,860
Rent	2,40,000
40% of salary and wages	4,12,800
40% of other contingent expenses	48,000
Total	32,26,660

(ii) Net Profit (per year)

$$\begin{aligned} \text{B.E.P.} &= \frac{\text{F.C.} \times 100}{\text{F.C.} + \text{Profit}} \\ &= \frac{32,27,000 \times 100}{32,27,000 + 31,08,000} \\ &= 50.93\% \end{aligned}$$

Addresses of Machinery and Equipment Suppliers

1. M/s. D. G. P. Windsor India Ltd.
E-6, U2 Road, Wogle Industrial Estate, Thane,
Mumbai-400 604.
2. M/s. Sunanda Industrial Machinery A Division of Mafatlal Marg Industries Ltd.
109, Standard House,
83, Maharshi Karup Road,
Mumbai-400002.
3. M/s. Indian Hydraulic Ind. Pvt. Ltd.
70 Shivaji Marg,
Industrial Area,
New Delhi-110015.
4. M/s. Ferromatik Milacron India Ltd.
Plot No. 92 Phase-1,

G.I.D.C Vatva,
Ahmedabad-382445.

Addresses of Raw Material Suppliers

1. M/s. Indian Petrochemicals Corporation Ltd.
P.O. Petrochemicals Township,
Vadodara-391346
(Gujarat.)
2. M/s. Reliance Industries Ltd.
Swastik Mill Compound,
V. N Purav Marg,
Chembur,
Mumbai-400 071.
3. Gas Authority of India Ltd.
16 Bhikaji Cama Place,
R. K. Puram,
New Delhi 110066.