

PROJECT PROFILE

Product : **N-95 MASK**

Category : **MEDICAL / SURGICAL**
(GLASS & CERAMICS)

Quality Standard : **CORRESPONDING BIS SP.**
IS 9473:2002

Month & Year : **MAY, 2020**

-: Prepared By :-

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N-95 MASK

A. INTRODUCTION :

N-95 respirators and surgical masks (face masks) are examples of personal protective equipment that are used to protect the wearer from airborne particles and from liquid contaminating the face. The N95 masks are specially designed to filter out at least 95% particles from breathing in including dust and molds.

A medical N-95 respirator consists of multiple layers of nonwoven fabric, often made from polypropylene. The two outward protective layers of fabric, covering the inside and outside of the mask are created using spun bonding. Between the spun bond layers there's a pre-filtration layer, which can be as dense as 250 g/m², and the filtration layer. The pre-filtration layer is usually a needled nonwoven fabric material. The last layer is a high efficiency melt-blown electrets (or polarized) nonwoven material, which determines the filtration efficiency.

This project profile has been prepared to promote and encourage the existing as well as budding entrepreneurs to setup a manufacturing facility to produce N-95 Mask and cater to the demand of N-95 masks keeping in view the emerged growing need during the present pandemic days because of COVID-19. It also aims at to create the job for the migrant labourers returned to Bihar in addition to create the scope of training and new line of entrepreneurship.

B. MARKET :

The demand for N-95 masks has increased rapidly, with the sudden outbreak of global pandemic COVID-19 across the globe. With the rapid surge in the patient pool around the world, due to infectious disease such as COVID-19, is boosting the growth of the market. Increasing demand for N95 masks across the world due to shortage of masks, further fuelling the growth of the market. In addition to this, with the outbreak of the Corona Virus, the demand is up to 100 times higher than regular demand in the world. In the countries like India there is a ample need of such product both at the Healthcare units as well as other Industrial units and organization to provide protection from the air transmitted nano-particles.

C. BASIS AND PRESUMPTION

1. The basis for calculation of production capacity is on single shift basis, working of 25 days per month on 75% efficiency. The time required for achieving envisaged capacity utilization is assumed as one year.
2. The estimated life of project will vary from product to product. However, the general life of project is taken as building if constructed 20 years, machinery and equipment 10 years. Accordingly, the depreciation on different items are taken as on building 5%, machinery and equipment 10%, furnace/kiln/calciner 25%, moulds and fixtures 25% and office equipment @ 20%.
3. BEP for the scheme has been calculated on full capacity utilization.
4. Rate of interest has been taken as 16% on an average. This however, is likely to vary depending upon the financial outlay and location of the unit.
5. The cost of machinery & equipment as indicated in the scheme are approximate to those ruling at the time of preparation of the scheme. The entrepreneur may check up the exact price for specific make and model of the machine selected.
6. Non-refundable deposits, cost of preparation of project profile, etc. may be considered under pre operative expenses.
7. The provisions may in other respects vice-versa raw materials, labour wages, utilities, overheads, etc. are drawn on the basis of standard variation and output. The cost indicated against each are approximate based on local market conditions and observation. The entrepreneur may find out the exact cost from the concerned sources.

D. IMPLEMENTATION SCHEDULE

Project implementation Schedule

The major activities in the implementation of the project have been listed and the estimated average time for implementation of the project is indicated for 06 months.

Sl. No.	Activity	Period in months
1	Preparation of Project Report	01
2	Registration and other formalities	01
3	Arrangement of land & approval of Plan by Local Authority	01 – 02
4	Sanction of loan by financial institution	02 – 03
5	Approval from other Govt. Agencies including health, labour, pollution control etc.	02 – 03
6	Plant and machinery	03 – 04
a)	Placement of order	03
b)	Procurement	04
c)	Power connections, electrification	04
d)	Installation, erection of machinery test equipment	04
5	Procurement of raw materials	04 – 05
6	Recruitment of technical personnel	04 – 05
7	Trial production	05
8	Commercial production	06

E. TECHNICAL ASPECTS

1. PRODUCTION DETAILS & PROCESS OF MANUFACTURE

It is proposed to produce the N-95 Masks through an automatic plant having different arrangements. It would be a servo motion with PLC control to execute automatic production from raw materials of 3 to 6 layers to finished product output. A series of operations will be taking place viz. Unwinding the roll, Ultrasonic compounding, Nasal strip inserting, folding, Pre-press compounding, Ultra sonic compounding, rolling and cutting. The Ear belt of the Mask is automatically transported to the attachment area of the manufactured mask body to the inclined connecting station on the conveyor system. The ear belt with fixed size is attached by ultrasonic welding

2. POLLUTION CONTROL

The necessary approvals like “Consent to Establish” and “Consent to Operate” is required to be obtained from State Pollution Control Board.

3. ENERGY CONSERVATION

The plants & machineries proposed in this project profile are of latest technology. The machines are state of art and energy efficient. Hence, it is presumed that the unit will operate at optimum energy cost and will contribute in energy conservation.

F. INSPECTION AND QUALITY CONTROL

Being the product is a part of protective equipment and mostly used in Healthcare sector, the quality must have to as per the prescribed standards. The corresponding BIS specification is IS9473:2002. The Testing shall be conducted and confirmed in any NABL accredited Laboratory. As such SITRA and DRDE are the main agencies for testing the N-95 Masks. One of Technology Centre of Ministry of MSME, the PPDC, Meerut is in process of equipping their testing laboratory with the facilities of testing of different PPEs.

Moreover, the raw materials and accessories to be used have to confirm the required specifications

G. PRODUCTION CAPACITY PER ANNUM :

This scheme envisages manufacture of 60,00,000 pcs of N-95 Masks per annum.

H. FINANCIAL ASPECTS

1. FIXED CAPITAL

(a) Land & Building:

S. NO.	DESCRIPTION	RATE (Rs.)	AMOUNT (Rs.)
01	Built-up Area on Monthly Rental basis - 4000 sq. ft.	25 per sq. ft.	1,00,000
TOTAL			75,000

(b) Machinery and Equipment :

SL. NO.	DESCRIPTION	QTY	RATE (Rs.)	AMOUNT (Rs.)
01.	Fully Automatic N-95 Face mask making Machine Imported from Korean or Japan Specification:	1 set	1,75,00,000	1,75,00,000
	Machine Speed			
	Voltage			
	Power			
	Air Supply			
	Control Method			
	Inspection Method			
	Welding System			
02.	Compressor – 50 HP	1	1,00,000	1,00,000
03.	Online UPS – 10 HP	1	4,00,000	4,00,000
04.	Respirator Valve Attacher	3	1,00,000	3,00,000
05.	Auto Laser Printing Machine	1	8,00,000	8,00,000
06.	Sanitization Tunnel – UV Light	1	1,00,000	1,00,000
07.	Furniture & Fixture	LS	-	3,00,000
TOTAL			1,95,00,000	

2. WORKING CAPITAL PER MONTH

(a) Raw Material Per Month :

S. NO.	DESIGNATION	SPEC.	QTY	RATE (Rs.)	TOTAL (Rs.)
01.	Surface Layer Water repellent non-woven fabric (Blue, White) -1 st Layer	50 GSM	1000 Kg.	250	2,50,000
02.	Middle Layer melt blown (outer)- 2 nd Layer	30 GSM	600 Kg.	2,500	15,00,000
03.	3 rd Layer- Middle Layer melt blown (Inner) – 3 rd Layer	30 GSM	600 Kg.	2,500	15,00,000
04.	Filter layer spun bond - 4th Layer	30 GSM	600 Kg.	500	3,00,000
05.	White non- woven fabric (Inner Layer)- 5 th Layer	30 GSM	600 Kg.	300	1,80,000
Sub-Total					37,30,000
Add Wastage @ 30%					11,19,000
Total					48,49,000
06.	Ear Loop (Elastic) 2 pcs per Mask	Sling – 5 mm	10 Lakh	0.50	5,00,000
07.	Nasal Line (Plastic) – 3 mm	3 mm	5 Lakh	2	10,00,000
08.	Packing Material	-	LS	-	10,00,000
09.	Other raw materials	-	LS	-	1,51,000
Grand Total					75,00,000

(b) Salaries & Wages Per Month :

S. NO.	DESIGNATION	NO.	SALARY (Rs.)	TOTAL (Rs.)
01.	Works Manager	01	40,000/-	40,000/-
02.	Marketing Manager	01	40,000/-	40,000/-
03.	Supervisor	01	30,000/-	30,000/-
04.	Storekeeper-cum-Accountant	01	20,000/-	20,000/-
05.	Skilled Workers	04	20,000/-	80,000/-
06.	Unskilled worker	03	10,000/-	30,000/-
07.	Peon & Housekeeping staff	02	10,000/-	20,000/-
08.	Watchman	02	10,000/-	20,000/-
Total				2,80,000/-
Perquisites @ 15%				42,000/-
Total				3,22,000/-

(c) Utilities Per Month :

S. NO.	DESCRIPTION	QTY.	RATE (Rs.)	AMOUNT (Rs.)
01.	Power	10,000 Unit	8/-	80,000/-
02.	Water	10,000 Ltrs.	16/-	1,60,000/-
TOTAL				2,40,000/-

(d) Other Expenses Per Month :

S. NO.	DESCRIPTION	QTY	RATE	AMOUNT (Rs.)
01.	Advertisement & publicity	-	-	30,000/-
02.	Consumable stores	-	-	20,000/-
03.	Insurance	-	-	50,000/-
04.	Misc.expenses	-	-	10,000/-
05.	Postage & stationery	-	-	10,000/-
06.	Repair & maintenance	-	-	20,000/-
07.	Sales expenses	-	-	25,000/-
08.	Taxes			25,000/-
09.	Telephone			15,000/-
10.	Transport charges	-	-	50,000/-
TOTAL				2,55,000/-

RECURRING EXPENDITURE PER MONTH (Rs.):

Sl. NO.	DESCRIPTION	AMOUNT (Rs.)
01.	Rent	1,00,000/-
02.	Raw Materials	75,00,000/-
03.	Salaries & Wages	3,22,000/-
04.	Utilities Per Month	2,40,000/-
05.	Other Expenses	2,55,000/-
TOTAL		84,17,000/-

WORKING CAPITAL FOR 2 MONTHS

$$= \text{Rs. } 84,17,000/- \times 2$$

$$= \text{Rs. } 1,68,34,000/-$$

PRE-OPERATIVE EXPENSES :

Rs. 16,50,000/-

3. TOTAL CAPITAL INVESTMENT :

	Rs.
FIXED CAPITAL	1,95,00,000/-
WORKING CAPITAL FOR 2 MONTHS	1,68,34,000/-
PRE-OPERATIVE EXPENSES	16,50,000/-
	=====
Total	3,79,84,000/-
	=====
or Say,	Rs. 3,80,00,000/-
	=====

I. FINANCIAL ANALYSIS

(a) Cost of Production Per Annum :

S. NO.	DESCRIPTION	AMOUNT (Rs.)
01.	Recurring expenditure	10,10,04,000/-
02.	Depreciation on Machineries @ 10%	19,20,000/-
03.	Depreciation on Building @ 5%	-/-
04.	Depreciation on Office Furniture @ 20%	60,000/-
06.	Interest on capital investment @ 16 %	60,80,000/-
TOTAL		10,90,64,000/-

(b) Turn Over (Per Annum) :

S. NO.	ITEM	QUANTITY (PCS)	RATE (Rs.)	VALUE (Rs.)
01.	Technical ceramics (resistor cores)	60,00,000	24/-	14,40,00,000/-
TOTAL				15,00,00,000/-

(c) Profit Per Annum :

	Rs.
Sales Per annum	14,40,00,000/-
Cost of Production per annum	10,90,64,000/-
	=====
Profit	3,49,36,000/-
	=====

(d) Profitability Analysis :

$$\begin{aligned}
 \text{Net Profit Ratio} &= \frac{\text{Profit/annum} * 100}{\text{Sales/annum}} \\
 &= \frac{3,49,36,000/- * 100}{14,40,00,000/-} \\
 &= \mathbf{24.26\%}
 \end{aligned}$$

(e) Rate of Return

$$\begin{aligned} \text{Rate of Return} &= \frac{\text{Profit/annum} * 100}{\text{Total Capital investment}} \\ &= \frac{3,49,36,000/- * 100}{3,80,00,000/-} \\ &= \mathbf{91.93 \%} \end{aligned}$$

(f) Break Even Point :

(i) Fixed cost per annum :

S. NO.	DESCRIPTION	AMOUNT (Rs.)
01.	Rent	12,00,000/-
02.	Depreciation	19,80,000/-
03.	Interest on investment	60,80,000/-
04.	Insurance	6,00,000/-
05.	40% of salary and wages	15,45,600/-
06.	40% of other expenses & Utilities excluding insurance	9,84,000/-
TOTAL		1,23,89,600/-

(ii) Profit per annum = Rs. 3,49,36,000/-

$$\begin{aligned} \text{Break Even Point} &= \frac{\text{Fixed Cost/annum} * 100}{\text{Fixed cost/annum} + \text{profit/annum}} \\ &= \frac{1,23,89,600/- * 100}{1,23,89,600/- + 3,49,36,000/-} \\ &= \mathbf{26.18 \%} \end{aligned}$$

J. NAME & ADDRESS OF SUPPLIERS OF MACHINERIES & RAW MATERIALS

(a) List of Supplier's of Machinery & Equipments:

1. Machineries can be imported through valid imprter.
2. M/s AXTECH, T-15, IMT Manesar, Sector – 1, Pin – 122050, Gurugram, Hariyana

(b) Suppliers of Raw Material :

1. Raw materials are locally available.
2. M/s Sunita Apparels, C-24, Ambey Garden, Samaypur, Delhi – 110 042