MSME DEVELOPMENT INSTITUTE, KOLKATA

PRODUCT : **N-95 MASK**

PRODUCT CODE :

QUALITY STANDARD : As per IS: 9473: 2002

MONTH & YEAR : June, 2020

PREPARED BY :

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A. INTRODUCTION:

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An N-95 respirator mask is a respiratory protective device with high filtration efficiency to airborne particles. To provide the requisite air seal to the wearer, such masks are designed to achieve a very close facial fit. If correctly worn, the filtration capacity of these masks exceeds those of triple layer medical masks. Since these provide a much tighter air seal than triple layer medical masks, they are designed to protect the wearer from inhaling airborne particles.

The name N-95 mask is self explanatory. N-95 means it can provide up to 95% protection of human body from any type of contamination viz. virus, bacteria, droplets, Airborne etc. In the present Pandemic COVID 19 situation, N-95 MUSK is most valuable and important protective Items for COVID warrior who are leading & fighting with the Virus from front line. Apart from COVID 19 warrior, for better protection from any type of Contamination common people are also using this type of masks.

B. MARKETING & SCOPE:

N-95 MUKS musk can provide up to 95 % protection against infection viz. Virus, bacteria and droplets from infected persons etc. N-95 can be used as protective Kits by COVID Warrior as well as Common person to protect them self from any contamination/infection. As a result in the present Global Pandemic COVID 19 situation, demands of N-95 MUSK are increasing rapidly in Domestic as well as International market. Manufacturer can export N-95 Musk to other countries also.

C. SPECIFICATIONS OF PRODUCTS:

N-95 Musk is used mostly by Health care Units which are highly sensitive area. For utmost protection of human body from virus & bacterial infection the product have to be followed ISI specification i.e. IS 9473:2002. The product should comply with above ISI specification and testing of the products can be done from NABL accredited laboratory only.

D. BASIS AND PRSUMPTIONS:

1. The Project Profile has been prepared on the basis of single shift of 8 hours each day, 25 days in a month and at 75% efficiency.

2. It is presumed that in the 1st year, the capacity utilization will be 60% followed by 75% in the next year and 80% in the subsequent years.
3. The rates quoted in respect of salaries and wages for skilled workers and others are the minimum rates in the State/neighboring States.
4. Interest rate for fixed and working capital has been taken @ 12% of an average, whether financed by the Banks or by Financial Corporations.
5. Margin money required is minimum 30% of the Projected invested.
6. Pay Back Period of the Project: After the initial gestation period of one and a half year, it will require 5 years to pay back the loans.
7. The rental value of the work shed and other built up/covered area has been taken at the rate of Rs. 300/- per square meter.
8. The rates quoted in respect of machines, equipments and raw materials are those prevailing at the time of preparation of this Project Profile and are likely to vary from supplier to supplier and place to place. When a tailor-made Project Profile is prepared, necessary changes are to be made.

E. IMPLEMENTATION SCHEDULE:

1.	Preparation of Project Report: -	
	a) Calling quotations.	1 Week.
	b) Preparation.	2 Weeks.
2.	Financial arrangements.	1 Month.
3.	Purchase and Procurement of Machinery.	1 Month.
4.	Installation of machines & Electrification	1 Month.
5.	Recruitment of Staff & Labor	1 Week.

F. TECHNICAL ASPECT:

PROCESS OF MANUFACTURE:

1. The Product:

The N-95 respirator MUSK is generally made from multiple layers of Non Woven fabrics often made from polypropylene fibre. Generally 5 different layers are used for better performance. These layers are as follows.

i. Water repellent non-woven fabric as first Surface layer with GSM values 50.
ii. Melt blown non-woven fabric with GSM values 30 as 2nd and 3rd layer.
iii. Spun bonded non woven fabric with 30 GSM as 4th Layer.
iv. Non- woven fabric with 30GSM as Inner Layer.

2. Process of Manufacturing:

The N-95 respiratory musk can be manufacture in an automated plant. The automated machine has a PLC Control by which Musk could be prepare form 3-6 layer. The individual layer of Non- woven fabric will be feed as basic raw materials. The procedure followed by Ultrasonic compounding, Nasal strip inserting, Prepress Compounding, folding, Pre-press compounding, Ultra sonic compounding, rolling and cutting. The Ear belt of the mask is automatically attached with Musk by ultrasonic welding.

3. <u>Production Capacity</u>:

Product		N-95 Respiratory Musk
Production per day (Avg.)		20000 no
Production per year		60,00,000 no
	Value	**<u>Rs 11,70,00,000.00</u>**

5. **<u>Motive Power Requirements</u>**: 40 H.P.

6. **<u>Pollution Control Needs:</u>**

There is no pollution control measures required, as this industry does not involve any pollution.

7. **<u>Energy Conservation:</u>**

Proper management of Power uses can control the higher consumption power.

G. <u>FIXED CAPITAL:</u>

1. <u>Land & Building:</u>

300 sq.mts The building is considered rental with monthly rent of Rs.21,000/-p.m. @ Rs.70/- per sq. meter.

2. <u>Machinery & Equipments:</u>

S. no.	Description	Indian / Imported	Qty	Rate (Rs)	Value (Rs.)
1	Fully Automatic N-95 Face mask making Machine Machine speed 50-60per min PLC, Photoelectric	Preferably Taiwan/Korean /Japan made	1	17500000	17500000

	inspection facility, Ultrasonic welding system, 13 HP motor			
2	Compressor 5 HP	1	100000	100000
3	Online UPS 10HP	1	400000	400000
4	Respirator valve Attatcher	3	100000	300000
5	Auto laser Printing M/c	1	800000	800000
6	Sterilization Tunnel UV Light		100000	100000
			Total	**19200000**

3. Other Fixed Expenses:

Furniture & Fixture.		250000.00
Other pre –operative expenses		50000.00
	Total	**300000.00**

4. TOTAL FIXED CAPITAL (Excluding Building Rent):

Machinery & Equipments charges		**19200000.00**
Other Fixed Expenses		300000.00
	Total	**19500000.00**

H. WORKING CAPITAL:

i) Staff & Labor per Month

S.No.	**Personal**	**No.**	**Salary Rs.**	**Total Rs.**
1	Production Manager Qualification Mechanical Engg (At least 5 years exp.)	1	50000.00	50000.00
2	Marketing Manager	1	50000.00	50000.00
3	Skilled operator	4	25000.00	100000.00
4	Office Staff	3	14000.00	42000.00
	helper	3	12000.00	36000.00
5	Security	2	11000.00	22000.00
			Total A	**300000.00**
			Wages @10% of A	**30000.00**
				330000.00

ii) Raw Material require per pcs of MUSK

Sr No	**Description**	**Specification**	**Qty require**	**Rate per Kg**	**Value Rs**

1.	1st Surface Layer Water repellent non-woven	50GSM	2.0 gm	250/-	0.50
2.	2nd Layer (outer) melt blown Non Woevnm	30 GSM	1.2 gms	2500/-	3.00
3.	3rd Layer melt blown (Inner)	30 GSM	1.2 gms	2500/-	3.00
4.	4th Layer Filter layer spun bond	30 GSM	1.2 gms	500/-	0.60
5.	5th Layer non- woven fabric (Inner Layer)-	30 GSM	1.2 gms	300/-	0.36
				Total A	7.46
			Wastage @30% of Total A		2.24
				Total B	9.70
6.	Ear Loop (Elastic) 2pcs	Sling 5 mm	-	1.00	1.00
7.	Nasal Line	3 mm Plastic	-	2.00	2.00
8.	Packing Material			2.00	2.00
9.	Misc. materials				0.30
		Total C			5.30
	Total raw materials require for one pcs Musk (B+C)				**15.0**

So Amount of Raw materials required for one month

= 15x 20000 x 25 = **Rs 75,00,000/-**

iii) **Utilities (Per Month)**

Avg Per month electricty Charegs = Rs 35000/-
Avg per month fuel consumption for = Rs 15000/-

So total utility charges per month = **Rs 50000/-**

iv)	**Other Contingent Expenses (P.M.)**	**Rs.**
a.	Rent.	21000.00
b	Testing of Materials	50000.00
c	Postage & Stationery	5000.00
d	Insurance of Machienery	20000.00
e	Consumable Stores	5000.00
f.	Repair & Maintenance	20000.00
g.	Misc. expenses	10000.00
	Total Rs.	**131000.00**

v) **Total Recurring Expenditure (Per Month)**

			Rs.
a.	Staff & Labour.		330000.00
b.	Raw Material.		7500000.00
c.	Utilities.		50000.00
d.	Other contingent expenses.		131000.00
		Total Rs.	**8011000.00**

vi) **Total Working Capital (on 3 months basis)**

Rs. 8011000 x 3 = **Rs 24033000.00**

I. TOTAL CAPITAL INVESTMENT.

a.	Fixed Capital		19500000.00
b.	Working Capital		24033000.00
		Total Rs.	**43533000.00**

J. MACHINERY UTILIZATION:

75% Machinery utilization is considered for achieving the projected target.

K. FINANCIAL ANALYSIS.

1. Cost of Production (per year):

-	Total recurring expenditure per year	96132000.00
-	Depreciation on machinery & equipments @ 10 % p.a.	1920000.00
-	Depreciation on office furniture @ 20 % p.a.	60000.00
-	Interest on total investment @ 12% p.a.	5223960.00
	Total Rs.	**103335960.00**
	Say	**103336000.00**

2. Turn Over (Per Year):

Items	Qty. (Pcs)	Rate (Rs.)	Value (Rs.)
N-95 Respiratory Musk	6000000	19.50	**11,70,00,000.00**

3. Net Profit (Per Year):

(Rs 117000000 - Rs 103336000) = **Rs. 1,36,64,000/-**

4. **Net Profit Ratio:** Net Profit X 100 / Turnover per annum = 13664000 X 100 / 43533000 = 11.68**%**

5. **Net Rate of Return:** Net Profit X 100 / Total Investment = 13664000 X 100 / 43515000 = **31.38 %**

6. Break Break Even Point:

I. Fixed Cost:

a.	Depreciation on machinery & equipment	1920000.00
b.	Depreciation on furniture.	60000.00
c.	Rent	252000.00
d.	Interest on total investment	5221800.00
e.	40% of salary & wages	1884000.00
f.	40% of other expenses excluding rent & insuracne	432000.00
g.	Insuracne	240000.00
	Total Rs.	**10009800.00**

II. PROFIT: Rs. 13664000/-

BEP: Fixed cost X 100 / Fixed cost + Profit

= 10009800 x 100 / 10009800 + 13664000

= **42.28 %**

L: Name & address of Raw Materials Suppliers:

1. Ahlstrom Fiber Composites India Pvt. Ltd.,
   PLOT NO.-7, S.NO.-141, PHASE-INSTIGATED TEXTILES AT APPARELS PARK, DIST. KUTCH, Mundra, Gujarat, 370421, India
2. Kimberly-Clark Lever Limited
   Post Bag No. 862, Deccan Gymkhana Post Office
   Pune -411004, India

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