

Project Profile

Product:- : Face Mask

Product Code : HS Code:- 9018 90 99

Quality Standard : BIS IS 16289-2014

Production Capacity : Qty. - 30,00,000/- No.
Value Rs.- 360 Lakhs.

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INTRODUCTION

Surgical face masks are made with non-woven fabric, which has better bacteria filtration and air permeability while remaining less slippery than woven cloth. The material most commonly used to make them is polypropylene, either 20 or 25 grams per square meter (gsm) in density. Masks can also be made of polystyrene, polycarbonate, polyethylene, or polyester.

Surgical masks are made up of a multi-layered structure, generally by covering a layer of textile with non-woven bonded fabric on both sides. Non-wovens, which are cheaper to make and cleaner thanks to their disposable nature, are made with three or four layers. These disposable masks are often made with two filter layers effective at filtering out particles such as bacteria above 1 micron. The filtration level of a mask, however, depends on the fiber, the way it's manufactured,

PRODUCTS AND ITS USE

Surgical face masks are used as a protective barrier to prevent cross-contamination among patients and surgeons. They are made mostly from non-woven fabric and are available in the two-layer and three-layer form.

Surgical face masks are used in operation theatres and every area of health care that requires patient inspection. Rise in awareness regarding airborne infections has led to an increase in usage of surgical face masks in not only large health care facilities but also smaller ones across the world. The usage of surgical face masks has increased among the general public owing to the rise in outbreaks of airborne diseases in recent times. The inevitable use of surgical face masks and lower threat of their substitutes are expected to propel the global surgical face masks market during the forecast period.

A surgical mask, also known as a procedure mask, is intended to be worn by health professionals during surgery and during nursing to catch the bacteria shed in liquid droplets and aerosols from the wearer's mouth and nose. They are not designed to protect the wearer from inhaling airborne bacteria or virus particles and are less effective than respirators, such as N95 or NIOSH masks which provide better protection due to their material, shape and tight seal. Surgical masks are popularly worn by the general public in East Asian countries to reduce the chance of spreading airborne diseases

MARKET:-

The unprecedented spread of coronavirus worldwide, most notably in Europe and North America, is driving the demand for disposable face masks. Disposable face covers are extensively used in the healthcare sector. The proliferating OPD sessions and surgeries on a daily basis across the globe are anticipated to drive product demand within the healthcare sector. The function of disposable face masks is to reduce or eliminate the chances of being affected by potential environmental contaminants. Disposable face covers are typically made from non-woven fabric and are usually available in a multi-layer (two- or three-layer) form.

The demand for disposable face masks is likely to be driven by the rising popularity of online shopping platforms. In this regard, Amazon.com, Inc. and eBay Inc. are among the biggest online players contributing significantly to the distribution of the product. Furthermore, the popularity of online sales has been creating a healthy demand for disposable designer face masks, most notably among affluent consumers worldwide. Such trends are expected to sustain throughout the forecast timeframe.

Rising consumer awareness regarding airborne infections has been creating a healthy demand for the product, most notably for personal use. In this respect, a rise in outbreaks as regards airborne diseases in the recent past has been contributing significantly to the demand for disposable face masks among the general public. A trend that has been gripping the market is the increasing consumption of surgical masks for personal use.

The worldwide face mask market size is expected to record a remuneration of USD 21,210 million by the end of 2026. The demand for the product is ever increasing and thus creating further scope for setting up new units in this line of manufacture.

BASIS AND PRESUMPTION

This project is based on single shift basis with 8 hours and 300 working days in a year. The unit is proposed to be started in own building. Costs of machinery, equipment, raw material indicated in this report refer to a particular make and approximately to those prevailing at the time of preparation of this profile and it is presumed that these rates are likely to vary from supplier to supplier and place to place. Cost of installation and electrification of plant and machinery is taken @ 10% of its cost. The interest rate is taken @ 12%.

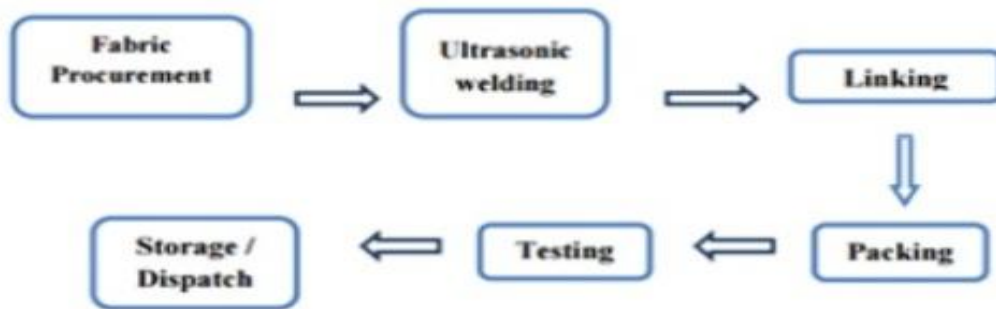
IMPLEMENTATION SCHEDULE

Time period required for executing the project from preparation of project report to starting the trial run production will be 7 months period approximately. Considering that some of the many activities may be overlapping, the project implementation will take a total period of five months approximately for starting the actual production.

TECHNICAL ASPECTS

1) Process of Manufacturing

Flow process chart



Materials OR linens or other breathable water repellent fabric, such as durable 55%/45% polyester/cotton blend or similar Pins
1/4" or 3/8" wide Elastic – white or black
Thimbles
Fabric Scissors
Heavy paper for patterns: 9" x 15" & attached mask pattern Cardboard – optional (**tip: use a 9.5" piece of cardboard to loop around 10-15 times to cut all at once to produce 20-30, 9.5" pieces)
Sewing Machine
Thread

PREP – Estimated time 3 minutes per unit

Station 1: Cutting

Cut a rectangular 9" x 15" base paper pattern Fold fabric in 4 layers
Lay 9" x 15" base pattern on top of 4-layer fabric Cut around the base pattern

Station 2: Pinning

Take 2 cut sheets and fold in half to make 4 layers Cut mask pattern per attached sample (8.19 x 5.4") Pin mask pattern to cut 4-layer fabric using 4 pins around the outside

Station 3: Cutting

Cut the fabric for the mask pattern

Station 4: Finishing

Remove pins and paper pattern from cut fabric Separate 4 fabric pieces into 2 sections of 2 layers of fabric each Pin 2 piece sections around curved edge vertically, every 2"

Station 5: Elastic

Cut elastic into (2) 9.5" sections.

Insert (1) elastic into each 2-piece pinned section through the flatter open edge (opposite from the edge that is pinned)

Check to be sure elastic is not twisted inside the section.

Once elastic strip is inserted into the opening and placed flat in a U shape , center the new elastic ear loop and pin down each end of the elastic strip 3" apart - even with the edge of the fabric (**tip: create a 3" line on your table as a guide**)

Use your completed 2-piece section as a guide for the other section to keep ear loops even

Place a single pin through middle of the 2 sections to make one unit, ready for sewing

Station 6: Quality Control

Examine product and correct any defects before advancing to sewing

Station 7: Distribution

Count and log mask units before issuing for sewing distribution. Record the name of the person picking up inventory. Ensure timely turnaround time of assigned masks, and do not over allocate to a single sewing resource.

SEWING

Each mask uses 4 cut pieces of fabric. For added durability, you can use zig-zag stitch and backstitching as deemed necessary.

1. If not yet assembled, pin two pieces together on side where pattern indicates First Seam line, pinning ends of elastic inside, between pieces where indicated by notches.

2. Following the First Seam line on pattern, sew seam using a 1/2 inch seam allowance for GREEN fabric (regular size mask) or 5/8 inch for BLUE fabric (small mask).
3. Turn two halves inside out so that the straps are exposed.
4. Line up and pin the center (nose) seam.
5. Sew both sides together through all 4 pieces of fabric approximately width indicated on pattern.
6. Examine product, correct any defects and snip any extra threads.

B) QUALITY SPECIFICATION

The Bureau of Indian Standards has formulated and published **IS 16289-2014** for surgical face mask for Medical purpose and carrying out the various tests for control of quality of the product.

C) PRODUCTION CAPACITY PER ANNUM

- i) Quantity 30,00,000 nos.
- ii) Value 3,60,00,000/-

D) APPROXIMATE POWER REQUIREMENT

15 H.P.

E) POLLUTION CONTROL

This industry does not involve in generation of pollution.

F) ENERGY CONSERVATION

Power requirement is very low, even then energy can be saved by proper housekeeping.

Financial Aspects;-

No.	Particulars			Amount in Rs.
1	Land and Building (Rented) (Per Month)			50,000/-
2	Machine And Equipment			
	Name of the Machine	Qty	Rate	Value in Rs.
	A Fully Automatic Mask Making Machine	2	40,00,000/-	80,00,000/-
	B Earloop and Nose clip welding machine	2	15,00,000/-	30,00,000/-
	C Misc.(Packaging and Testing)	LS		40,00,000/-
	Total Amount			1,50,00,000/-

Electrification and installation charges
 @ 10 % of the cost of machinery Rs. 15,00,000/-
 Cost of office equipment Rs. 35,00,000/-
Total cost of Machines and Equipment Rs. 2,00,00,000/-

Total Fixed Capital:-

A) Land & Building (Per Year) Rs. 6,00,000/-
 B) Cost of Machines and Equipment Rs. 2,00,00,000/-
Rs. 2,06,00,000/-

Working capital requirement

i) Personnel (Wages per Month)

No	Designation	No	Salary/Month	Total Salary in Rs.
1	Manager	1	60,000/-	60,000/-
2	Supervisor	2	30,000/-	60,000/-
3	Skill Labour	6	25,000/-	1,50,000/-
4	Labour	6	20,000/-	1,20,000/-
5	Peon	1	15,000/-	15,000/-
	Total			4,05,000/-

Towards welfares and statutory requirements
 @ 15% of total salary 60,750/-
 4,65,750/-
Total say Rs. 4,65,000/-

ii) Raw materials Per Month

S.N	Description	Unit	Qty.	Rate	Value In Rs.
1	Spoun bond Fabric 3 layer	Kg.	390	2200	8,58,000/-
2	Ear loop	Mtr	1,80,000	0.50	90,000/-
3	Nose Bar	Kg	235	200	47,000/-
2	20 mm Elastic Belt	Kg.	48	250	12,000/-
Total					1,007,000/-

Say Rs.10,00,000/-

iii) Utilities per Month

Power Charges Avg. 10,000 units
@ 6.25/ Unit

Total Rs. 62,500/-

iv) Other Contingency expenses per month

Postage	3,000/-
Repair and Maintance	7,000/-
Transportation	10,000/-
Insurance	3,000/-
Misc.	<u>8,000/-</u>

Total Rs. 31,000/-

v) Total recurring expenditure

Personnel	4,65,000/-
Raw materials	10,00,000/-
Utilities	62,500/-
Other Contingency Expanses	<u>31,000/-</u>

Total Rs. 15,58,500/-

vi) Working capital for 3 Month Rs. 46,75,500/-

Say Rs. 46,75,000/-

vii) Total capital investment

i) Fixed Capital	2,06,00,000/-
ii) Working capital for 3 Month	<u>46,75,000/-</u>
	2,52,75,000/-

Machinery Utilization

Capacity utilization is considered as 75% of installed capacity

3) Financial analysis

a) Cost of Production (per Year) Rs.

Total recurring cost	1,87,00,000/-
Depreciation on Machinery and equipment @10%	16,50,000/-
Depreciation on Office furniture @ 20%	5,25,000/-
Interest on total investment@12%	<u>30,33,000/-</u>
	2,39,08,000/-
	Say, Rs. 2,39,00,000/-

b) Turn over (Per Year)

Item	Qty	Rate	Value In Rs.
N95 Mask	30,00,000/-	12	3,60,00,000/-

c) Net Profit per Year

$$\text{Rs. } 3,60,00,000/- - 2,39,00,000/- = 1,21,00,000/-$$

d) Net profit ration

$$\frac{1,21,00,000 \times 100}{3,60,00,000} = 33.61\%$$

e) Rate of Return

$$\frac{1,21,00,000 \times 100}{2,52,75,000} = 47.87\%$$

f) Break Even point

Fixed Cost	Rs.
a) Total Depreciation	21,75,000/-
b) Total Interest	30,33,000/-
c) Salary @ 40%	22,32,000/-
d) Other Expenses @ 40%	1,48,800/-
e) Utility @ 40%	<u>3,00,000/-</u>
	77,88,800/-

$$\begin{aligned} \text{B.E.P.} &= \frac{\text{Fixed cost} \times 100}{\text{Fixed cost} + \text{Profit}} \\ &= \frac{77,88,800 \times 100}{77,88,800 + 1,21,00,000} \\ &= \frac{77,88,80,000}{1,98,88,800} \\ &= 39.16\% \end{aligned}$$

Machine & equipment Supplier

1) Ocean International

Office No. 11-15, Wing A, First Floor,
Barcelona Complex. Odhav, Ahmedabad - 382415,
M.n 08048871633

2) KP Tech Machine (India) Pvt.Ltd.

K-209,Vishala Land Mark, Above Marigold Restaurant,
Opp-Kathwada GIDC, Sardar Patel Ring Road,
Nikol, Ahmedabad, Gujarat 382350.

3) Heer Impex.

Plot no 11 Shriniketan Society.
Off. Ashram Road, Ahmedabad
M.No:- +91 09428708833

Raw Material Supplier

1) ALP non wovenpvt. Ltd.

Plot No: 82/67 GIDC Modasa,
GaneshpurShamalajiRoad,
Modasa, Gujarat 383315

2) Shri Shri Nonwoven

43, Umiya Industries, Bhestan Bhestan,
Near SBI Bank, Udhna,
Surat-395023
M.no:- 08037429973

3) Madhuram poly Films

A-84, Krishna Nagar, , Near Narayan Nagar,
Model Town Road,, Surat - 394210.
M.no.:- 8048932484