

PROJECT PROFILE – HAND SANITIZER

Product : **Hand Sanitizer**

Product Code : **20212**

Production capacity : **Qty. (per annum)** **Value (Rs.)**
300 KL **639 Lakh**

Month & Year : **June 2020**

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Project Profile on Manufacturing of Sanitizer(Alcohol-based)

(A) INTRODUCTION

Sanitizers are class of substances that are used to disinfect a given surface utilizing their chemical composition which in most cases, is basic in nature which essentially allows the substance to dissolve envelope in case of viruses, cell membrane in case of bacteria as well as some fungus and cell wall in case of some fungus, thus killing pathogen. The Hand Sanitizers are class of sanitizers that are used to disinfect hands as they are one of the most vulnerable parts of human body which is susceptible to pick up pathogens. The hand sanitizers use alcohol to develop the basic nature required to kill pathogens, while components like Vitamin-E and Aloe Vera Gel are used to add skin benefits to the sanitizer.

(B) Market Potential

India hand sanitizer market is projected to surpass \$ 43 million by 2025. Growth of hand sanitizer market in India can be attributed to rising awareness about healthy lifestyle & wellness, shifting consumer preference towards convenient hygiene products and rising disposable income. Therefore, hand hygiene forms the most important element of personal care, thereby driving the popularity of hand sanitizers. Also, the government promotes the usage of hand care products to increase awareness as well as avoid health issues among consumers. For instance, the WHO and FDA have taken initiatives to make people aware of hand hygiene and the risks associated with not maintaining the hygiene level of hands. Moreover, the rising influence of social media and online advertisements has exposed people to the recent trends of personal care and hygiene, which is accelerating the usage of hand sanitizers among consumers

Moreover, the COVID-19 outbreak has boosted demand for sanitizers like never before across the diverse end-user segments than other segments throughout the forecast period as well. According to studies, this product also minimizes the risk of gastrointestinal and respiratory infections among consumers who use hand sanitizer.

However, the growth of the market can be hampered by the usage of chemical ingredients associated with the product causing allergies to some people. So with product innovation and new product development with introducing organic and natural ingredients in the manufacturing of hand sanitizers, which will gain the trust of consumers.

Keeping in view the above and rising awareness about hand hygiene and its benefits, there has been a constant increase in demand for hand sanitizers.

(C) Implementation Schedule :

The project implementation will take about five months. Most of the activities run parallel. The break-up of activities with relative time for each activity may be as follows:

S. No.	Activity	Estimated Time Period
1.	Market survey for collection of data in respect of demand, raw material, machinery and selection of site.	2 Weeks
2.	Preparation of project document and Registration	2 Weeks
3.	License from Drug Controller Authority	4 Weeks
4.	Arrangement of finance /loan	4 Weeks
5.	Procurement of machinery & equipment and their Installation	6 Weeks
6.	Purchase of raw materials	2 Weeks
7.	Recruitment of Staff & Trial production	2 Weeks

(D) Basis and Presumptions :

- a. The scheme is based on a single shift of 8 hours per day and 300 working days per annum.
- b. The interest rate on the borrowed capital has been taken as 10 % per annum.
Note: - Special rebate on interest rate may be obtained from lender bank or SIDBI as product pertains under the category of COVID-19 product list.
- c. The cost in respect of Raw Materials, Packing Materials, Machinery & Equipment has been taken at the time of preparation of project profile and may vary from place to place and time to time.
- d. The rental Value of production shed is taken as per the prevailing rates and may vary from place to place.
- e. The plant capacity utilization has been taken as 60 % for the first year, which may subsequently increase to 70%, 80% & 90 % in the second, third & fourth year respectively.

(E) Manufacturing Capacity

- (a) Quantity : 300 Kilo Ltr.
- (b) Value (Rs.) : 639 Lakhs

(F) Technical aspects:-

(1) Manufacturing details:-

(1.1) Materials requirement.

S. No	Raw Material (Ingredients) FOR FORMULATION -1	Purity	Percentage	Raw Material (Ingredients) FOR FORMULATION -2	Purity	Percentage
1.	Ethanol	96%	80 % (v/v)	Isopropyl alcohol 99.8%	99.8%	75 % (v/v)
2.	Hydrogen peroxide	3 %	0.125 % (v/v)	Hydrogen peroxide 3%	3 %	0.125 % (v/v)
3.	Glycerol 98%	98 %	1.45 % (v/v)	Glycerol 98%	98 %	1.45 % (v/v)
4.	Sterile distilled or boiled cold water		To make up 100 % (v/v)	Sterile distilled or boiled cold water		To make up 100 % (v/v)

(1.2) Functions of Raw Materials.

(A)	Ethanol / Isopropyl	Alcohol is the active component in the formulations,
(B)	Hydrogen Per Oxide	The low concentration of H ₂ O ₂ is intended to help eliminate contaminating spores in the bulk solutions and recipients and is not an active substance for hand antiseptics. • H ₂ O ₂ adds an important safety aspect,
(C)	Glycerol	Glycerol is added as a humectant to increase the acceptability of the product. • Other humectants or emollients may be used for skincare, provided that they are affordable, available locally, miscible (mixable) in water and alcohol, non-toxic, and hypoallergenic. • Glycerol has been chosen because it is safe and relatively inexpensive. Lowering the percentage of glycerol may be considered to further reduce the stickiness of the hand rub
(D)	Use of proper water	While sterile distilled water is preferred for making the formulations, boiled and cooled tap water may also be used as long as it is free of visible particles.
(E)	Addition of other additives	It is strongly recommended that no ingredients other than those specified here to be added to the formulations.
(F)	Colorant	A colorant may be added to allow differentiation from other fluids but should not add to toxicity, promote allergy, or interfere with antimicrobial properties. The addition of perfumes or dyes is not recommended due to the risk of allergic reactions.

(1.3) Manufacturing process:

The measured volume of alcohol to be used is poured into the vessel. Hydrogen peroxide is added using the measuring cylinder. Thereafter measured volume of glycerol is added into the vessel. As glycerol is very viscous and sticks to the wall of the measuring cylinder, it should be rinsed with some sterile distilled or cold boiled water and then emptied into the tank. The vessel is then topped up to the mark with sterile distilled or cold boiled water. The lid is placed on the vessel, as soon as possible after preparation, to

prevent evaporation. The solution is gently mixed by using appropriate mixing. A colorant may be added to allow differentiation from other fluids but should not add to toxicity, promote allergy, or interfere with antimicrobial properties. The addition of perfumes or dyes is not recommended due to the risk of allergic reactions. Hand rub sanitizer is now ready for filling in spray jet bottles.

(1.4) Quality control

1. Pre-production analysis should be made every time. Verify the alcohol concentration with the alcoholmeter and make the necessary adjustments in volume in the preparation formulation to obtain the final recommended concentration.

2. Post-production analysis is mandatory if either ethanol or an isopropanol solution is used. Use the alcoholmeter to control the alcohol concentration of the final use solution. WHO recommends for use for pre-surgical hand rub sanitizer according to European standard EN 12791.

(1.5) Safety Measures - Special requirements apply to the production and storage of the formulations, as well as the storage of the primary products. The main safety issues relate to the flammability of alcohol-based hand rub sanitizer. The manufacturing process and building must comply good manufacturing practices (GMP).

The flash points of ethanol 80% (v/v) and isopropyl alcohol 75% (v/v) are 17.5°C and 19°C, respectively, and special attention should be given to proper storage in tropical climates. Production and storage facilities should be ideally air-conditioned or cool rooms.

Open flames and smoking must be strictly prohibited in production and storage areas. Local and central (bulk) storage must comply with fire regulations regarding the type of cabinet and store, respectively. National safety guidelines and local legal requirements must be adhered to for the storage of ingredients and the final product. A designated

'highly flammables' store will be required for situations where it is necessary to store more than 50 liters. Containers and dispenser cartridges containing hand rub should be

stored in a cool place away from sources of ignition. This applies also to used containers that have not been rinsed with water.

(1.6) Licenses

The sanitizer manufacturing activities attracts various license /NOC/permission viz drug license, cosmetic license , state excise dept. Permission, Ayush license and fire dept. NOC .The requirement of above licenses /permission depends nature of ingredients used in manufacturing of the sanitizer . The Production and storage of alcohol based Hand Sanitizers attracts drug license which can be applied online at FSDA site and state excise dept. Permission is also required for purchase /storage of ethanol. In case formulations have perfumes essential oil / aroma chemical, Cosmetic license has to obtained. In case of natural herbal sanitizer only ayush license is required.

(2) Fixed Capital Investment

S. No.	Description	Value (Rs.)
(a)	Land & Building	
	Total area: 750 sq. Mtrs. Covered area of 500 Sq. Mtrs. on rent	60,000 Per month

S. No	Description	Rent per month	Value (Rs.)
(b)	Machinery & Equipment's		
1.	Alcohol-based Hand Rub Sanitizer /Gel Manufacturing Plant Capacity 500Ltr./ Batch with flameproof electricals and flameproof operating panel. 250 Ltrs. Phase Preparation Vessel Centrifugal Type Transfer Pump 500 Ltrs. Hand Sanitizer Mixer Air Operated Diaphragm Pump 500Ltrs. Storage Vessel Air Operated Diaphragm Type Transfer Pump Interconnecting Pipe Line Integrated Control Panel with Flameproof operating panel Working platform	01 Set	13,75,000/-
2.	Storage vessel made of S.S. 500 Ltr. Cap.	2 Nos.	5,00,000/-
3.	Additional cost for providing Hydraulic Lowering & Lifting Arrangement for Top Drive Assembly For Main Mixer, with flameproof electrical	01 Set	2,50,000/-
4.	Automatic Filling Machine	1 No.	2,50,000
5.	Automatic Sealing Machine	1 No.	2,50,000
6.	Laboratory Equipment & Office furniture	L.S.	5,00,000
7.	Fire fighting Equipment	L.S.	2,00,000
		Total	33,25,000
	Installation of Machinery & equipment @ 10% of the cost		3,32,500
	Pre-operative expenses	L.S.	42,500
	Total -		37,00,000

(3) Working Capital Requirement:-

(a) Raw Materials per Month:

Sr. No.	Description	Quantity	Rate (Rs.)	Value (Rs.)
01.	Ethyl Alcohol	25 K.L.	80,000 Per K.L.	20,00,000/-
02.	Hydrogen Peroxide	50 Kg.	70 Per Kg.	3,500/-
03.	Glycerol	470 Kg.	80 Per Kg.	37,600/-
04.	Sterilized water	500 Ltr.	5 Per Ltr.	2,500/-
			Total	20,43,600/-

(b) Packing Materials per Month:

Sr. No.	Description	Quantity(Nos)	Rate (Rs.)	Value (Rs.)
01.	PET Bottles fitted with spray jet capacity 500 ml.	40,000	32 per bottle	12,80,000/-
02.	PET Bottles fitted with spray jet capacity 200 ml.	25,000	21 per bottle	5,25,000/-
03.	Corrugated boxes for packing of 24 bottles of 500 ml.	1675	30 per box	50,250/-
04.	Corrugated boxes for packing of 48 bottles of 200 ml.	520	30 per box	15,600/-
05	Stickers / Labels	L.S.		1,00,000/-
			Total	19,70,850/-
			Say	19,71,000/-

(c) Salary & Wages per Month :

Sr. No.	Description	Nos.	Rate	Value (Rs.)
01.	Manager/ Supervisor / Chemist	01	20,000	20,000
03.	Semi-skilled labor	01	15,000	15,000
04.	Unskilled labor	08	10,000	80,000
			Total : -	1,15,000
	Perquisites @ 15 %			17250/
			G.Total:-	1,32,250/

(d) Utilities per Month :

Sr. No.	Description	Qty	Rate	Value (Rs.)
01.	Power	15000 K.W.	Rs.7.50/unit	1,12,500/-
02.	Water			2,000
				1,14,500

(e) Other Expenses per Month :

Sr.	Description	Value (Rs.) No.
01.	Rent	60,000
02.	Postage & Stationery	10,000
03.	Telephone/Internet	2,500
04.	Repair & Maintenance @ Rs.300 per KL	7,500
05.	Marketing & Traveling Expenses	50,000
06.	Other Misc. Expenses	10,000
	Total-	1,40,000

(f) Working Capital for one month

Sr. No.	Description	Value (Rs.)
01.	Raw Materials	20,43,600
02	Packing Material	19,71,000
03	Salary & Wages	1,32,250
04	Utilities	1,14,500
05.	Other Expenses	1,40,000
	Total	44,01,350

(g) Working Capital for three month Rs. 1,32,04050
Say Rs.1,32,04,000

(4) Capital investment
(a) Fixed Capital Rs.37,00,000
(b) Working capital for three month Rs.1,32,04,000
Total: Rs.1,69,04,000

(G) Financial Analysis:

(a) Cost of production per Annum :

Sr. No.	Description	Value (Rs.)
01.	Recurring expenditure	5,28,16,000
02.	Depreciation on Machinery & equipment @ 10% p.a.	2,62,500
03.	Depreciation on Testing equipment /furniture/ fire fighting equipment @ 25% p.a.	1,75,000
04.	Interest on capital investment @ 10 % p.a.	16,90,4,00
	Total	5,49,43,900
	Or say	5,49,44,000

b) Turnover per Annum

S.No.	Particulars	Qty (Nos)	Rate (Rs.)	Value
1.	Sale of 500ml alcohol based hand rub sanitizer	4,80,000	@105/-	5,04,00,000
2.	Sale of 200ml alcohol based hand rub sanitizer	3,00,000	@45/-	1,35,00,000
			Total	6,39,00,000

(c) Net Profit per Year :

$$= \text{Rs. } 6,39,00,000/- - \text{Rs } 5,49,44,000/-$$

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$$= \text{Rs. } 89,56,000/-$$

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(d) Profit Ratio on Sales :

$$\begin{aligned} \text{Profit Ratio on Sales} &= \frac{\text{Net Profit}}{\text{Total turnover}} \times 100 \\ &= \frac{89,56,000}{100 \ 6,39,00,000} \times 100 \\ &= 14.01 \% \end{aligned}$$

(d) Rate of Return (ROR) on Total Capital Investment:

$$\text{ROR} = \frac{\text{Net Profit per annum}}{\text{Total Capital Investment}} \times 100$$

$$= \frac{89,56,000}{1,69,04,000} \times 100$$
$$= 52.98 \%$$

(H) **Break-Even Analysis :**

(i) **Fixed Cost :**

Sr. No.	Description	Amount (Rs.)
01.	Depreciation on Machinery & equipment	2,62,500
02	Depreciation on Testing equipment /furniture/ fire fighting equipment	1,75,000
03.	Interest on Total Capital Investment	16,90,4,00
04.	40 % of Salary & Wages	6,34,800
05.	40 % of Other Expenses	3,84,000
06.	40 % Utility	5,49,600
07.	Rent	7,20,000
	Total	44,16,300

(ii) **Break Even Point (B.E.P.) :**

$$\begin{aligned} \text{B.E.P.} &= \frac{\text{Fixed Cost}}{\text{Fixed Cost} + \text{Profit}} \times 100 \\ &= \frac{44,16,300}{44,16,300 + 89,56,000} \times 100 \\ &= 33.02 \% \end{aligned}$$

I. Names and Addresses of Machinery Suppliers:-

1. M/s Shristi Food Equipment Exim Pvt. Ltd.
G-17/47, Ground Floor Sector-15 Rohini, Delhi-85
2. M/s Rapid Cool
B-151 Mayapuri Industrial Area Phase-I, New Delhi-64
3. M/s Shree Bhagwati Machtech (India) Pvt. Ltd.
Plot No : 2802, Road No 4 E, Nr. Ramol Cross Roads, G.I.D.C, Phase 4,
Vatva, Opp, Winflex Ltd, Gujarat 382445
4. M/s Harison Pharma Machinery Pvt. Ltd. No. 4675/21, Ground Floor,
Ganpati Bhawan, Darya Ganj, -Delhi .

II. Name and addresses of Pet Bottle suppliers:-

1. M/s Teknobyte India Pvt. Ltd.
Plot No. 10, Pocket-D, Sector-4, DSIDC Industrial Area, Bawana, Delhi – 39
2. M/s Usha Poly Craft Pvt. Ltd.
520-A14 opp. Mansarovar Park Metro Station Shahdara , Delhi-95
3. M/s. A.G. Poly Packs (P) Ltd., Mandoli, Delhi – 110 093

III. Name and addresses of Corrugated Boxes manufacture and suppliers:-

1. M/s Neeta Industries
D-1531, DSIIIDC, Industrial Area, Narela Delhi – 110040
2. M/s Paper Tree Industries
No. 99, Pragati Apartments, Paschim Vihar, New Delhi – 110063

IV. Name and addresses of Raw material suppliers:-

1. M/s Shanker International
214-Kailash Hills, New Delhi-110065
2. M/s Acuro Organics Limited
B-19, Sector-1, Noida - 201 301
3. M/s Dev Chemicals
I-89, Adhapak Nagar, Najafgarh Road, Nangloi Delhi-41