

# HAND SANITIZER

## **1. 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,**

**components like Vitamin-E and Aloe Vera Gel are used to add skin benefits to the sanitizer.**

## **2. MARKET POTENTIAL:**

India hand sanitizer market is projected to surpass \$ 43 million by 2022. 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. Moreover, the strong marketing activities by leading brands, in addition to huge endorsements, are some other drivers of hand sanitizer market in India. Moreover, the COVID-19 outbreak has boosted demand for sanitizers like never before across the diverse end user segments.

The hand sanitizer market is categorized into Gel, Liquid, Foam and Spray, among which Gel based segment witnessed a faster growth and the segment is expected to grow at a higher rate than other segments throughout the forecast period as well. Gel based segment category held a major part of market share in 2019 due to higher consumer preference. Additionally, due to the strong marketing, and endorsements by celebrities of hand sanitizer products, this category has been witnessing significant growth throughout the historical period and is anticipated to maintain stable growth during the forecast period as well.

West India dominated the country's hand sanitizer market in 2019, and the region is expected to maintain its dominance during the forecast period. Some of the major players operating in India hand sanitizer market are Reckitt Benckiser (India) Ltd., Hindustan Unilever Ltd., Dabur India Ltd., Himalaya Drug Company Pvt. Ltd., ITC Ltd., and other

### **3. BASIS & PRESUMPTIONS**

- (i) The output capacity is taken as 50 Kgs/hr. The unit will work at 20 hrs. per day for 25 working days in a month and 300 days in a year. The output capacity may vary from machinery to machinery and the cost of machinery may also vary from supplier to supplier.
- (ii) The time period for achieving the full envisaged capacity utilisation is six months
- (iii) The labour wages are as per the prevailing rates in the market
- (iv) The rate of interest for fixed and working capital is taken as 12 per cent
- (v) The margin money requirement for this project is 30 per cent
- (vi) The pay back period of this project is 5 years

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- (vii) The rate of land is taken @ Rs. 500/-per sq. mtr. and construction charges are taken @ Rs. 3500 per sq. mtr. This may also vary from place to place.
- (viii) The present profile has to be updated taking into prevailing cost of land, building, machinery etc. at the time of implementation of the project

### **4. IMPLEMENTATION SCHEDULE**

The Time requirement for preparation of Project report	:	Two months
Time requirement for selection of Site	:	One month
Time required for registration as Small Scale Unit	:	One Week

Time required for acquiring the loan Machinery procurement, erection and commissioning	:	Three months
Recruitment of labourer etc.	:	One month
Trial runs	:	One month

## **5. TECHNICAL ASPECT**

### **RAW MATERIAL For 1000 Litre**

Basic Raw material requirement are as follows:

- Ethanol 99.9 [Main Anti-Pathogenic]-Rs. 100/Litre - 700 Ltrs
- Distilled Water [Essential] [Solvent]- R.30/ Liter 300 Litre
- Glycerine [Essential] [Emollient] Rs.100/Litrs 01%
- methyl /Propyle Paraben-Rs, 1000/Kg 100 Grms
- Perfume [Essential] [Emulsifier] Rs, 2000/Ltrs 50 ML
- Color (Water Soluble /Acid Base) SOS Rs.800/Kg .001 Gram
- Sanitizer Bottles With Pump

### **MANUFACTURING PROCESS:**

Various raw material as mentioned above are procured from appropriate vendors and stored in appropriate pressure vessels based on the class of chemicals they fall under for example concentrated Isopropyl Alcohol is an extremely corrosive and hazardous chemical thus requires a class-1 Pressure vessel, while distilled water is non-corrosive and nonhazardous thus requires class-3 pressure vessel for storage.

As all the raw materials are chemicals thus a chemical lab e quipped with qualitative and quantitative analysis apparatus and reagents for all raw material is required so as to ensure proper manufacturing of hand sanitizer. Therefore before manufacturing process starts, all the raw material are tested for their composition and concentration.

After verification of all raw materials through chemical lab, the alcohol is supplied to dilution reactor vessel where distilled water is added to it from their respective storage pressure vessels in metered quantities using their respective weighing and metering equipment (Flow Meter is used in case of most Semi-Automated and Fully Automated Plants).

The concentration of alcohol can be anywhere between 60% to 70% depending upon other raw materials to be used, this solution is then supplied to stirrer vessel through an appropriate weighing and metering equipment along with various other raw material through their respective weighing and metering equipment's in

definite quantity in appropriate sequence while stirrer is still operating in controlled pressure and temperature condition

The most fundamental sequence involves Diluted Alcohol, Solubilizing Agent, Emulsifier, Emollient, Thickening Agent, Fragrance, Other Additives and Preservatives; this sequence can be altered based on special raw material or additives properties.

Once the solution has stabilized, hand sanitizer is obtained from stirrer vessel; this solution is supplied to filling machine which fills this solution into sanitizer bottles followed by which caps can be either manually attached or by utilizing a torque gun with vacuum attachment.

Hand Sanitizer bottles are then sent to label pasting machine which applies label of its ingredient, life and company information followed by which they are packaged and sent to sale.

An appropriate sample size from each lot is sent to chemical lab to ensure composition of product prior to sale.

## **6. QUALITY & STANDARD**

### **WHO-recommended**

#### **8. APPROVALS & REGISTRATION REQUIREMENT:**

Basic registration required in this project:

- ✓ License from the Food and Drug Control Authority (FDCA)
- ✓ GST Registration
- ✓ MSME Udyog Aadhar
- ✓ Trademark or Brand name as may be required by the manufacture
- ✓ IEC Code for Import Export
- ✓ Barcode for E-Commerce

#### **9. PRODUCTION CAPACITY (Per Annum)**

- (a) Quantity (KL) : 300 KL
- (b) Value (Rs.) : 3.0 Crore

#### **8. TOTAL POWER REQUIREMENT**

Total connected load (KW) : 450

#### **9. POLLUTION CONTROL MEASURES**

The unit Require NOC FROM State Pollution Control Board so contact to their respective state ,However, a proper ventilation should be made in the processing area for the better circulation of the fresh air.

#### **10. ENERGY CONSERVATION**

Entrepreneurs may select energy efficient machinery and proper planning has also to be made for saving energy in the unit.

## 11. FINANCIAL ASPECT

### A. FIXED CAPITAL

i) LAND & BUILDING:		Area sq. mtrs.	Rate Rs. per Sq. mtr.	(Rs.)
<b>Land</b>		700	500	3,50,000.00
<b>Building</b>		350	3500	12,25,000.00
				-----
<b>Total :</b>				<b>15,75,000.00</b>
				----- ii)

### MACHINERY & EQUIPMENT

<u>Sr. No.</u>	<u>Description of machines</u>	<u>Qty.(Nos.)</u>	(Rs.)
(a)	Production Unit		
(b)	Machinery Requirement are as follows:		Rs.
(c)	• Storage Tank [Pressure Vessel Class-1]		250000
(d)	• Storage Tank [Pressure Vessel Class-3]		300000
(e)	• Reactor Vessel with Stirrer [Stirrer Vessel]		500000
(f)	• Dilution Reactor Vessel		
(g)	• Weighing and Metering Equipment [Quantity = Number of Constituent		300000
(h)	Materials + 1]		
(i)	• Filling Machine		10,00000
(j)	• Torque Gun with Vacuum Attachment		1,75000
(k)	• Centrifugal Pumps		65000
(b)	Alcohol Concentration Meter /Lab Equipment		100000

Chemical Lab [Quality Control] Note: Plant Capacity is 1000 ltr Per day.

Total Rs.. 26,90000

(c) Electrification & Installation @ 10% of cost & machinery- 269000

(d) Pre-operative expenses	50,000.00
	----- Total
Total cost of machinery & equipment ( a to d	3009000
	-----
(f) Cost of Office Equipment/Furniture/Computers etc	3,00,000.00
	-----
<b>Total:</b>	<b>3309000</b>
	-----
Fixed Capital = (i) + (ii) 15,75,000 + 3309000	= 4824000.00

B. WORKING CAPITAL

i) Staff and Labour (Per Month)

Designation	Nos.	Salary (Rs.)	(Rs.)
Chemist Production Manager	01	30,000.00	30,000.00
Sales Executive	01	20,000.00	5,000.00
Accountant-cum- Store Keeper	01	10,000.00	10,000.00
Watchman	02	7,000.00	14,000.00
Skilled Workers	02	6,000.00	12,000.00
Helpers	02	5,000.00	10,000.00
Electrician	01	5,000.00	5,000.00
		Total:	86,000.00

Add perquisite @ 10% of the Salary

8,600.00

Total: 94,600.00

Or say Rs. 94,000.00

ii) <u>Raw Material</u> (Per Month)	Qty. (KL)	Rate Rs./KL	(Rs.)
Ethanol Alcohol 99.9	25	100000	25,00000.00

iii) Utilities (per month): (Rs.)

a) Power 7,20,000.00  
(60% utilisation x 450 KW x 500 hrs. x Rs. 5 per unit)

b) Water 2,000.00

Total: 7,22,000.00

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

a) Repairs and Maintenance 2,000.00

b) Transportation Charges 10,000.00

c) Postage and stationery 2,000.00

d) Telephone/Fax/Computer 2,000.00

e) Consumable Stores 1,000.00

f) Advertisement & Publicity 2,000.00

g) Insurance 6,000.00

h) Miscellaneous Expenses 1,000.00

Total: 26,000.00

<b>12. TOTAL WORKING CAPITAL</b> ( Per Month )	----- (Rs.)
I) Chemist /Staff and Labour	94,000.00
ii) Raw Material	25,00000
iii) Utilities	7,22,000.00
iv) Other Contingent Exp.	26,000.00
	-----
Total:	33,42,000.00
	-----
Working Capital for 3 months	10026000

<b>13. TOTAL CAPITAL INVESTMENT</b>	(Rs.)
A. Fixed Capital	48,24000.00
B. Working Capital for 3 months	1,00,26000
	-----
Total:	1,48,50,000
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**14. FINANCIAL ANALYSIS**

A. Cost of Production (per year)	(Rs.)
(a) Total Recurring Cost	4,0104000
(b) Depreciation on building @ 5%	1,34500.00
(c) Depreciation on machinery& equipment @ 10%	4,33,450.00
(e) Depreciation on office equipment @ 20%	60,000.00
(f) Interest on total Capital Investment @ 10%	27,60,000.00
	-----
Total:	4,34,91,950

Or Say Rs. 4,34,91,000.00

B. Sales/Turn over (per year)

<u>Item</u>	<u>Qty.( MT)</u>	<u>Rate (MT)</u>	<u>Value (Rs.)</u>
Hand Sanitizer			
	Rs.3.00 KL	200000	6.00 Cr

C. Net Profit (Per year)

Sales(Rs)	-	Cost of Production (Rs.)	=	Profit (Rs.)
60000000	-	4,34,91,000	=	16509000

D. Net Profit Ratio =  $\frac{\text{Net Profit} \times 100}{\text{Sales}}$

=  $\frac{1,6509000 \times 100}{6,0000000}$  = 27.5 %

E. Rate of Return =  $\frac{\text{Net Profit} \times 100}{\text{Total Capital Investment}}$

$$= \frac{16509000 \times 100}{14850000} = 11.11\%$$

F. Break-even Point

Fixed Cost (Per Year)	Rs.
a) Depreciation on Building @ 5%	134500.00
b) Depreciation on Machinery & Equipment @ 10%	4,33,450.0
d) Insurance	72,000.00
e) Interest on total capital investment	27,60000.00
f) 40% of salary and wages	451,200.00
g) 40% of other contingent expenses	1,24,800.00
	-----
Total:	39,75,950.00
	-----
Or say	Rs. 39,75,000.00

Net Profit (Per Year)

$$\begin{aligned}
 \text{B.E.P. \%} &= \frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Net Profit}} \\
 &= \frac{39,75,000 \times 100}{39,75,000 + 16509000} \\
 &= \frac{39,75,000 \times 100}{24459000} \\
 &= 16.25\%
 \end{aligned}$$

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