



PROJECT PROFILE ON ALCOHOL BASED SANITIZER
NIC Code (2008: 20239)

Production Capacity : 300 Kilo Litre per Annum.
(Valued Rs. 231 lakhs)

Month & year of Preparation : June, 2020

Prepared by

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(Government of India)
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INTRODUCTION:

Hand sanitizer is a liquid, gel, or foam generally used to decrease infectious agents on the hands. In most settings, hand washing with soap and water is generally preferred. Hand sanitizer is less effective at killing certain kinds of germs, such as norovirus and *Clostridium difficile* and unlike soap and water, it cannot remove harmful chemicals. People may incorrectly wipe off hand sanitizer before it has dried, and some are less effective because their alcohol concentrations are too low.

In most healthcare settings alcohol-based hand sanitizers are preferable to hand washing with soap and water. Reasons include it being better tolerated and more effective at reducing bacteria. Hand washing with soap and water; however, should be carried out if contamination can be seen, or following the use of the toilet. The general use of non-alcohol-based hand sanitizers has no recommendations.

Alcohol-based versions typically contain some combination of isopropyl alcohol, ethanol (ethyl alcohol), or *n*-propanol, with versions containing 60% to 95% alcohol the most effective. Care should be taken as they are flammable. Alcohol-based hand sanitizer works against a wide variety of microorganisms but not spores. Compounds such as glycerol may be added to prevent drying of the skin. Some versions contain fragrances; however, these are discouraged due to the risk of allergic reactions. Non-alcohol based versions typically contain benzalkonium chloride or triclosan; but are less effective than alcohol-based ones.

Alcohol has been used as an antiseptic at least as early as 1363 with evidence to support its use becoming available in the late 1800s. Alcohol-based hand sanitizer has been commonly used in Europe since at least the 1980s. The alcohol-based version is on the World Health Organization's List of Essential Medicines, the safest and most effective medicines needed in a health system. The wholesale cost in the developing world is about US\$1.40-3.70 per liter bottle.

1. PLANT CAPACITY PER ANNUM: 300Kilo Litres per Annum.

2. MARKET & DEMAND ASPECTS :

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.

3. BASIS AND PRESUMPTIONS:

- a. The scheme is based on 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 12 % per annum.
- c. The cost in respect of Raw Materials, Packing Materials, and Machinery & Equipments 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 and may vary from place to place.
 - e. The plant capacity utilization has been taken as 50 % for the first year, which may subsequently increase to 60% and 70% in the second and third year respectively.

4. IMPLEMENTATION SCHEDULE:

The project implementation will take about nine months. The break-up of activities with relative time for each activity is as follows:

Sr. No.	Activity	Estimated Time Period (Months)
01.	Scheme preparation, approval, Mandatory licenses (Clearance from Pollution control board and License from drug controller)	0 - 2
02	Rental Building, License from Local self government, Power, Water connection	0- 2
03.	Registration under MSME Act 2006 and sanction of loan	2 - 3
04	Placement of Orders for Machineries and equipment	2-3
05	Installation of Machines	3- 4
06	Recruitment of Staff & Trial run	4 - 5
07	Commercial Production	6 th .Month

5. LEGAL ASPECTS:

The product is covered under the Drug Control Act and all specifications laid down there in are to be complied with.

The general requirements for obtaining Drug License are as under:

- a. Land and Plant Layout.
- b. Proof of Ownership of Land of Consent letter of owner, if the land is taken on rent.
- c. Copy of Memorandum of articles of association or partnership deed, list of Directors etc. as the case may be.
- d. Photocopy of the packing material specimen.
- e. Clearance from State Pollution Control Board.

6. TECHNICAL ASPECTS:

- a. **PRODUCTION CAPACITY** : **300 Kilo Litres per annum.**
- b. **QUALITY CONTROL** :

. Pre-production analysis should be made every time an analysis certificate is not available to guarantee the titration of alcohol (i.e. local production). Verify the alcohol concentration with the alcoholmeter and make the necessary adjustments in volume in the preparation formulation to obtain the final recommended concentration.

. 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. The accepted limits should be fixed to $\pm 5\%$ of the target concentration (75%-85% for ethanol).

C. MANUFACTURING PROCESS:

FORMULATION FOR 10 Liters

1. Isopropyl alcohol 99.8%: 7515 ml
2. Hydrogen peroxide 3%: 417 ml
3. Glycerol 98%: 145 ml
4. Sterile distilled or boiled cold water: 1923 ml

Process:

1. The alcohol (Isopropyl Alcohol) for the formula to be used is poured into the large bottle or tank up to the graduated mark.
2. Hydrogen peroxide is added using the measuring cylinder.
3. Glycerol is added using a measuring cylinder. 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 bottle/tank.
4. The bottle/tank is then topped up to the 10-litre mark with sterile distilled or cold boiled water.
5. The lid or the screw cap is placed on the tank/bottle as soon as possible after preparation, in order to prevent evaporation.
6. The solution is mixed by shaking gently where appropriate or by using a paddle.
7. Immediately divide up the solution into its final containers (e.g. 500 or 100 ml plastic bottles), and place the bottles in quarantine for 72 hours before use. This allows time for any spores present in the alcohol or the new/re-used bottles to be destroyed.

Then bottles are labeled as per norms and ready for sale/ distribution.

General Information

Labelling should be in accordance with national guidelines and should include the following:

- Name of institution
- WHO-recommended handrub formulation
- For external use only
- Avoid contact with eyes
- Keep out of the reach of children
- Date of production and batch number

- Use: Apply a palmful of alcohol-based handrub and cover all surfaces of the hands. Rub hands until dry

- Composition: ethanol or isopropanol, glycerol and hydrogen peroxide

- Flammable: keep away from flame and heat

Production and storage facilities:

- Production and storage facilities should ideally be air conditioned or cool rooms. No naked flames or smoking should be permitted in these areas.

- WHO-recommended handrub formulations should not be produced in quantities exceeding 50-litres locally or in central pharmacies lacking specialised air conditioning and ventilation.

- Since undiluted ethanol is highly flammable and may ignite at temperatures as low as 10°C, production facilities should directly dilute it to the above-mentioned concentration. The flashpoints of ethanol 80% (v/v) and of isopropyl alcohol 75% (v/v) are 17.5°C and 19°C, respectively.

- National safety guidelines and local legal requirements must be adhered to the storage of ingredients and the final product.

- Additional safety information is presented in Part B of this Guide

7. FINANCIAL ASPECTS :

Sr.	Description	Quantity	Value (Rs.)
No.			
(a)	Land & Building		
	Covered area of 2500 Sq.ft. on rent	-	20,000*
(b)	Machinery & Equipments		
01.	10-litre glass or plastic bottles with screw-threaded stoppers	10 No.	5000
02.	50-litre plastic tanks (preferably in polypropylene or high density polyethylene, translucent so as to see the liquid level)	10 No.	20,000
03.	Stainless steel tanks with a capacity of 80-100 litres (for mixing without overflowing)	10 Nos.	80,000
04	Storage Tank for Iso-Propyl alcohol (5000 litres)	4Nos	1,00,000
04	Wooden, plastic or metal paddles for mixing	3 Nos	10,000
05	Measuring cylinders and measuring jugs,	LS	15,000
	Plastic or metal funnel,		
	100 ml plastic bottles with leak-proof tops .		
06	500 ml glass or plastic bottles with screw tops	10 nos	5000
07.	Semi Automatic Filling and sealing Machine	2 No.	1,00,000
08	Shrink Packing Machine	2 No.	20,000
09	Laboratory Equipments	L.S.	60,000
	(Alcoholmeter*, glasswares etc)		
	Sub total		4,15,000

11	Installation of Machinery & equipments @ 10% of the cost.		41,500
12	Preoperative Expenses	L.S.	25,000
		Total	4,81,500
		Or say	4,82,000

Note:

*Rent covered under other expenses head

**The Alcoholmeter is to control an iso-propanol solution; a 75% solution will show 77% ($\pm 1\%$) on the scale at 25°C.

(c) Raw & Packing Materials per Month:

Sr. No.	Description	Rate	Quantity	Value (Rs.)
01.	Isopropyl alcohol 99.8%	Rs.70/Litre	18,000 litres	12,60,000
02.	Hydrogen peroxide 3%	Rs.40/Kg	1250 Kg.	50,000
03.	Glycerol 98%	Rs.600/Kg.	362 Kg.	2,17,200
04.	Sterile distilled or boiled cold water	Rs.3 / litre.	5000 litres.	15,000
05	Bottles (250 ml & 500 ml)	L.S	80,000 Nos	2,50,000
06	Packing Materials viz. Bottles, Master Cartons, Bopp Tape etc	L.S	-	60,000
			Total	18,52,200

(d) Salary & Wages per Month :

Sr. No.	Description	Nos.	Value (Rs.)
01.	Manager	01	30,000
02.	Supervisor / Chemist	01	25,000
03.	Semi - skilled labour	03	24,000
04.	Unskilled labour	06	30,000
		Total	1,09,000

(e) Utilities per Month :

Sr. No.	Description	Rate	Quantity	Value (Rs.)
01.	Power	Rs.5.50/unit	L.S	12,500
02.	Fuel & Lubricants		L.S.	2,000
03.	Water		L.S.	1,500
			Total	16,000

(f) Other Expenses per Month :

Sr. No.	Description	Quantity	Value (Rs.)
01.	Rent	L.S.	20,000
02.	Postage & Stationery	L.S.	1,500
03.	Telephone	L.S.	1,500
04.	Repair & Maintenance @ Rs.600 per KL		7,500
05.	Insurance @ 2% of Machinery & Equipment Cost		668
06.	Marketing & Traveling Expenses	L.S.	12,000
07.	Other Misc. Expenses	L.S.	2,000
		Total	45,168

(g) Working Capital for One Month (c+d+e+f)	:	20,22,368
(h) Working Capital for three Months	:	60,67,104
	Or say	60,67,000
(i) Total Capital Investment (b+h)	:	65,49,000

9. FINANCIAL ANALYSIS :

Sr. No.	Description	Value (Rs.)
01.	Raw & Packing Materials	2, 22,26,400
02.	Salary & Wages	13,08,000
03.	Utilities	1,92,000
04.	Other Expenses	5,42,016
05.	Depreciation on Machinery & Equipments @ 10% p.a.	48200
06.	Interest on borrowed capital @ 10 % p.a.	6,54,900
	Total	2,49,71,516
	Or say	2,49,72,000

(b) Turnover per Annum :	
Total sales value of 300 K.L. Sanitizer @ Rs.1,00,000 per K.L.	: 3,00, 00,000

(c) Net Profit per Year :

Net Profit	=	Total turnover	-	Total cost of production
	=	3,00,00,000/-	-	2,49,72,000/-
	=	50,28,000/-		

(d) Profit Ration on Sales :

$$\text{Profit Ratio on Sales} = \frac{\text{Net Profit}}{\text{Turn Over}} \times 100$$

$$= \frac{50,28,000}{3,00,00,000} \times 100$$

16.76%

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

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

$$= \frac{50,28,000}{65,49,000} \times 100$$

= 76.77%

(f) Break Even Analysis :

(i) Fixed Cost :

Sr. No.	Description	Amount (Rs.)
01.	Depreciation on Machinery & Equipments @ 10% p.a.	48,200
02.	Interest on Total Capital Investment @ 10% p.a.	6,54,900
03.	40 % of Salary & Wages	5,23,200
04.	40 % of Other Expenses	2,16,806
	Total	14,431,06

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

$$\text{B.E.P.} = \frac{\text{Fixed Cost}}{\text{Fixed Cost} + \text{Profit}} \times 100$$

$$= \frac{1443106}{6471106} \times 100$$

= 22.30%

Name and Addresses of Plant and Machinery Suppliers :

1. M/s.Unique Enterprises, 201, Konarka Mugdha Apartment, Plot No.36, Saraswati Cooperative Housing Society, Deendayal Nagar, Nagpur -22. Contact Person : Dr. Mukund Moholkar, Mb: 09823116709
Tel No. (0712)2273391, (07104)235675, Fax No. (0712)2224362
E-mail: response@uniquepulveriser.com , uniquepulveriser@mahamail.com Website: www.uniquepulveriser.com
2. M/s. L & M Automatics
Office : 60 / 7, Old Dal Mandi, kanpur - 208001 Tel. No. (0512) 2352570, Fax No. (0512) 2358287
Factory : H-3, Panki Industrial Area, Site - 1, Kanpur - 208022. Tel. No.(0512)2692349, 2692658.
3. M/s. National Engraving Works
Registered Office : 90/201, Phoowali Gali, Anwarganj, Kanpur - 208001 Tel. No. (0512) 2368594, E-mail : nationalengg@sify.com
Works : 123 / 796, Opposite Excellent Motors, Factory Area Fazalganj, Kanpur - 208012 (U.P.) Tel. No. (0512) 2242372, 3942808.

Contact Person : Mr. Kazee, Mb:09336118246, 09415486940
4. M/s. Suveja Engineers, U-52, MIDC Hingna Road, Nagpur - 440016. Contact: Shri J. Ghagre, Tel.No. (07104)236153, Mb: 09422147432.

Name and Addresses of Raw Material Suppliers :

1. M/s. Sandeep Chemicals , Near Reshim Oli, Samarth Gali, Budhwari, Nagpur - 440002. Contact: Shri Sandeep Samarth, Tel. No.(0712)2776930
2. M/s. Shabbir Chemicals, Near Reshim Oli, Samarth Gali, Budhwari, Nagpur - 440002.. Contact Person : Shri Shabbir, Tel. No. (0712)2778388.
3. M/s. Swastik Acids & Chemicals, Near Sai Mandir, Methi Hospital, Chandrashekhar Azad Sq., Behind Arafat Hotel, Central Avenue, Nagpur-32 Tel. No.(0712)2764908, 2763548, Fax No. (0712)2770343.