PROJECT REPORT

OF

CHARCOAL BODY WASH

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding Charcoal Body wash Production Unit.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]

SAMADHAN

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PROJECT AT GLANCE

1	**Name of Proprietor/Director**	XXXXXXXX	
2	**Firm Name**	XXXXXXXX	
3	**Registered Address**	XXXXXXXX	
4	**Nature of Activity**	XXXXXXXX	
5	**Category of Applicant**	XXXXXXXX	
6	**Location of Unit**	XXXXXXXX	
7	**Cost of Project**	24.78	Rs. In Lakhs
8	**Means of Finance**		
i)	**Own Contribution**	2.48	Rs. In Lakhs
ii)	**Term Loan**	15.30	Rs. In Lakhs
iii)	**Working Capital**	7.00	Rs. In Lakhs
9	**Debt Service Coverage Ratio**	3.48	
10	**Break Even Point**	0.32	
11	**Power Requiremnet**	15	KW
12	**Employment**	9	Persons
13	**Major Raw Materials**	Surface Active Agents, caustic soda, the activated charcoal powder Soda ash etc.	

14 Details of Cost of Project & Means of Finance

Cost of Project

Particulars	Amount in Lacs
Land	Owned/Leased
Building & Civil Work	Owned/Leased
Plant & Machinery	16.50
Other Misc Assets	0.50
Working Capital Requirement	7.78
Total	**24.78**

Means of Finance

Particulars	Amount in Lacs
Own Contribution	2.48
Term Loan	15.30
Working capital Loan	7.00
Total	**24.78**

1. INTRODUCTION

Soaps or Body washes are salts of fatty acids that are used for the purpose of cleaning the body. The soap present in the body wash solubilizes particles and grime which are then separated from the surface by washing it. They also kill the micro-organisms by disorganizing their membrane lipid bilayer and denaturing their proteins. It also emulsifies oils by enabling them to be carried away by running water. They are created by treating fats or oils with a base.

Charcoal body wash or more specifically "Activated Charcoal" body wash contains activated charcoal as a major ingredient which has several properties. Activated charcoal is a fine, black, odorless powder that is made by superheating sources of carbon in absence of air. Substances that are generally taken to prepare the activated charcoal include bamboo, coconut husk, yellow peat, coir, lignite, coal, and petroleum pitch. It is called "active" because in this form, the carbon is processed to have small low-volume pores that increase the surface area available for adsorption or chemical reactions. The word "Activated" is also sometimes substituted with "Active".

Activated Charcoal Body Wash

Activated Charcoal Powder

There are different methods by which Activated Charcoal can be made. In the physical method, the material with carbon content can be pyrolysed in the temperature range of 600 – 900 °C in a muffle furnace in an inert atmosphere in the presence of argon or nitrogen gas. After this the carbonized material is exposed to oxidizing atmospheres (oxygen or steam) at temperatures above 250 °C, usually in the temperature range of 600–1200 °C.In the other method or the chemical method, the carbonaceous material is impregnated with certain chemicals. The chemicals are typically acids, strong bases, or a salt (phosphoric

acid 25 %, potassium hydroxide 5 %, sodium hydroxide 5 %, calcium chloride 25 %, and zinc chloride 25 %). The material is then subjected to lower temperatures (250–600°C). It is believed that the temperature activates the carbon at this stage by forcing the material to open up and have more microscopic pores.Chemical activation is preferred to physical activation owing to the lower temperatures, better quality consistency, and shorter time needed for activating the material.

There are several benefits of adding Activated Charcoal to the soaps and body washes. The activated charcoal helps to draw out the microparticles such as dirt, dust, chemicals, toxins, and micro-organisms thus helping to clean the skin from within. This prevents the occurrence of different skin infections including acne. Activated charcoal also have "anti-bacterial" properties that may help to absorb microbes from the wounds. Due to their properties, there are different activated charcoal-based products that are dominating the market.

2. PRODUCT DESCRIPTION

2.1 PRODUCT USES

The use of the Activated charcoal body wash is use absorb the toxins, dirt, grime, oil from the body and kills the micro-organisms due to the presence of the Activated charcoal in it.

The surfactants present in the body wash reduce the surface tension between the skin and the water. Water has strong surface tension which forms drops as a bead on any surface. This slows the wetting ability of water and reduces its cleansing property. The liquid soaps lessens the surface tension so that it can wet the body and thus clean the surface properly. Also, surfactants loosen and emulsify dirt and debris, dispersing it in water and allowing it to get rinsed away.

2.2 RAW MATERIAL REQUIREMENT

The major raw materials that are required for the making of liquid soaps are:

2.2.1 The surfactants are the "Surface Active Agents" that surrounds and traps the oil particles from the surfaces. One part of the soluble in oil while other part in water. When a body wash is applied to the body, the oil soluble portion aligns with the oily materials while the water soluble portion aligns in the water layer. When a number of surfactant molecules line up like this, they form a structure known as a micelle. This micelle has oil trapped in the middle and can be washed away with water, thus giving the shampoo its cleansing power. They are added to act as the foaming and the emulsifying agent of the soap. Generally the surfactants that are employed for the purpose are Sodium Laureth Sulphate, Sodium Lauryl Sulphate, Cocamidopropyl Betaine, Sodium Cocoyl Glycinate, Sodium lauroyl isethionate, Disodium Cocoyl

Glutamate, PEG-7 Glyceryl Cocoate, Palmittic Acid, Myristic Acid, etc.,Secondly a thickener is required to attain a thick consistency of the body wash. Generally Nitrosol, Antisol, Carboxymethyl Cellulose (CMC), Microcrystalline Cellulose are employed for this purpose. Sodium or potassium chloride can also be employed for this purpose.

2.2.2 Caustic Soda or Lye solution, made by dissolving sodium hydroxide pellets in water. However Potassium Hydroxide solution or Caustic Potash can also be used for the same purpose. It is a modifier which is added to modify special characteristics such as sodium hydroxide or potassium hydroxide adjusts the pH of the solution. Citric or Ascorbic acid can also be used in their place.

2.2.3 The Activated charcoal powder is also one of the main ingredients but it actually falls under the list of special ingredients.

2.2.4 Sulphonic acid or sulphonate salts are added as the foaming agents.

2.2.5 Soda Ash or Trisodium EDTA either one can be added to remove the hardness of water so that the soap lathers well. These chemicals form chelate complexes with iron, magnesium, and calcium ions.

2.2.6 The foam booster are compounds that increases the foaming capacity of the body wash. These commonly include Texapon, Lauramide DEA, cocamide DEA, cocamide MEA

2.2.7 Conditioning agents are added to make the skin feel soft and to reduce the dryness of the skin. Some of the commonly uses conditioning agents are Glycerin, Sunflower seed oil, Dimethicone, guar hydroxypropyltrimonium chloride, Quatemium 80, etc.

2.2.8 Preservatives are added to inhibit the growth of bacteria and other microorganisms as body wash is made up of water and organic compounds. Some of the most commonly used preservatives are Sodium Benzoate or Benzoic Acid, DMDM hydantoin (formaldehyde releaser), methyl and ethylparabens, etc.

2.2.9 There are certain other agents which are added as special additives, such as colorants, fragrances, antioxidants, etc.

2.3 MANUFACTURING PROCESS

The manufacturing process for the production of Activated Charcoal Body Wash is as follows:

2.3.1 At first the thickener solution is prepared in a mixing vessel with a stirrer. The time required for mixing is dependent of the thickener taken. Nitrosol, Sodium and Potassium Chloride dissolves instantaneously in water while Antisol, Carboxymethyl Cellulose (CMC), Microcrystalline Cellulose take time to dissolve and sometimes they do not dissolve completely in water,

for example, microcrystalline cellulose dissolves in a 7-10% alkaline solution at 0°C that too after stirring for 1 hour. So the thickener is dissolved as per requirement. The sulphonic acid and the foam booster (texapon) can be added to the thickener at this stage.

2.3.2 Next is the preparation of the Caustic soda or Caustic potash solution. As the reaction of theses alkalis with water is an exothermic reaction so these reaction are carried out in Jacketed SS reaction vessel so that the heat dissipated can be cooled off. This may be prepared a day before as it requires time to cool down.

2.3.3 Now the thickener solution prepared previously is added to the alkali solution through an outlet while the solution is continuously agitated in a reaction mixer or a paddle mixer. The mixture will become thick after this.

2.3.4 The Soda Ash or the Trisodium EDTA is then dissolved in water in a mixing vessel and mixed well to form a homogenous mixture. This is then added to the alkali solution thorough an outlet. This neutralizes the solution.

2.3.5 Now the surfactants to be added to the alkali solution are dissolved in requisite water in a vessel and then agitated well. Then it is also added to the alkali solution with intense mixing.

2.3.6 This is followed by the addition of the activated charcoal powder and the contents are then mixed well again.

2.3.7 The dissolved colorant and other additives such as preservatives are added next and the mixture is stirred well. After this the mixture is allowed to stand for about 3-4 hours.

2.3.8 After all the ingredients are added to the reaction vessel, a sample of the batch is taken to the lab for quality testing. Physical characteristics are checked to make sure the batch adheres to the specifications outlined in the formula instructions. A group of tests are run that includes pH determination, viscosity check, appearance and odor evaluation. After the batch is approved by the QC, it is pumped out of the main batch tank intothe holding tank where it is stored till the filling lines are ready. From the holding tank it gets pumped into the filler, which is made up of a carousel ofpiston filling heads.

2.3.9 At the start of the filling line, empty bottles are put in a large bin called “Hopper”. Here the bottles are manipulated till they stand all upright and correctly oriented. Then they are moved on the conveyor line towards the carousel that contains the body wash.

2.3.10 The filling carousel is made up of a series of piston filling heads that are calibrated to deliver exactly the correct amount of Body wash into the bottles. As the bottles move through this section of the filling line, they are filled with Body wash.

2.3.11 From here the bottles move towards the capping machine. The caps are also put in a hopper and correctly aligned. As the bottles move by the caps are put on and twisted tight.

2.3.12 After the cups are tightened the bottles are moved towards the labelling machine and are labelled there.

2.3.13 From the labelling area they are transferred to the storage area where they are put into boxes, typically a dozen at a time. These boxes are then stacked onto pallets and hauled away in large trucks to the distributers. The number of bottles at a time in these production lines can be 200 per minute.

3. PROJECT COMPONENTS

3.1 Land /Civil Work

An area of 1000-1200 square feet is sufficient to set up an Activated Charcoal Body wash manufacturing unit. The production unit needs to be situated away from residential areas. Also it should have measures to avoid contamination from open sewage, drain, and public lavatory.

3.2 Plant & Machinery

The following machineries are required to set up a Body Wash manufacturing plant:

3.2.1 Stainless Steel mixing vessel to mix the raw materials in water and prepare solutions. Capacity can be 500 L to 1000 L. Maximum pressure 15 -20 bar and temperature -30 °C – 350 °C.

3.2.2 The second requirement is that of a SS jacketed cooling reactor vessel for the preparation of the Lye or Caustic Potash solution. Maximum pressure of 6-10 Kg, capacity 2000-3000 L. these reactor vesselsareusually provided with an agitator for the mixing of the raw material.

3.2.3 A homogenizer machine to form the emulsion after mixing the raw materials to ensure proper emulsion formation. Capacity 100-1000 Liter, Pressure 150-200 bar, can be operated either manually or hydraulically.

3.2.4 Bottle filling line operating at 3000 bottles per hour. Made up of Stainless Steel thus resisting corrosion. It simply fills bottles with set quantity.

3.2.5 Automatic capping machine to cap the plastic bottles filled with body wash, with the capping capacity of 100 bottles per minute. Operated automatically and made from Stainless Steel to avoid getting rust.

3.2.6 Labelling machine used to label the body wash containers after they are filled and capped having a capacity of 100 to 200 bottles per minute also made from stainless steel to avoid corrosion.

4. LICENSE & APPROVALS

To start the Activated Charcoal Body Wash manufacturing process the different licenses and registrations from the different authorities regarding the area and machineries must be obtained initially. These laws vary from one state to the other. Besides them, the other certificates that must be obtained are:

1. The company needs to be registered with the Registrar of Companies (ROC), under the Ministry of Corporate Affairs, India. This is the prime and the mandatory step.
2. A drug license is required. As per the Drugs and Cosmetics Act and Rule, the Central and the State government make rules regarding issuance of license to a person for manufacturing cosmetics.
3. The next step is to obtain a trade license from the local authority.
4. The next step is to apply for MSME Udyam registration
5. The GST (Goods and Service Tax) certification.
6. Apply for a “No-objection Certificate” from the Pollution Control Board.

PROJECTED BALANCE SHEET **(in Lacs)**

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
Liabilities					
Capital					
Opening balance		6.50	9.00	12.22	16.91
Add:- Own Capital	2.48				
Add:- Retained Profit	6.53	8.49	10.72	13.20	16.12
Less:- Drawings	2.50	6.00	7.50	8.50	11.00
Closing Balance	**6.50**	**9.00**	**12.22**	**16.91**	**22.03**
Term Loan	13.60	10.20	6.80	3.40	-
Working Capital Limit	7.00	7.00	7.00	7.00	7.00
Sundry Creditors	1.46	1.69	1.93	2.19	2.46
Provisions & Other Liability	0.40	0.48	0.58	0.80	0.96
TOTAL :	**28.97**	**28.37**	**28.52**	**30.30**	**32.45**
Assets					
Fixed Assets (Gross)	17.00	17.00	17.00	17.00	17.00
Gross Dep.	2.55	4.72	6.56	8.13	9.46
Net Fixed Assets	**14.45**	**12.28**	**10.44**	**8.87**	**7.54**
Current Assets					
Sundry Debtors	2.26	2.72	3.10	3.55	4.03
Stock in Hand	7.17	8.24	9.33	10.56	11.83
Cash and Bank	2.59	2.12	1.65	2.82	5.54
Loans & Advances /Other Current Assets	2.50	3.00	4.00	4.50	3.50
TOTAL :	**28.97**	**28.37**	**28.52**	**30.30**	**32.45**

PROJECTED PROFITABILITY STATEMENT **(in Lacs)**

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
Capacity Utilisation %	**50%**	**55%**	**60%**	**65%**	**70%**
SALES					
Gross Sale					
Charcoal Body wash	96.79	116.72	132.99	152.24	172.75
Total	**96.79**	**116.72**	**132.99**	**152.24**	**172.75**
COST OF SALES					
Raw Material Consumed	62.70	72.42	82.76	93.74	105.34
Electricity Expenses	1.44	1.66	1.81	1.97	2.12
Depreciation	2.55	2.17	1.84	1.57	1.33
Wages & labour	8.28	9.11	10.02	11.02	12.12
Repair & maintenance	1.94	2.33	2.66	3.04	3.45
Packaging & Cosumables	3.87	4.67	4.65	6.09	6.91
Cost of Production	80.78	92.36	103.75	117.42	131.27
Add: Opening Stock	-	4.04	4.62	5.19	5.87
Less: Closing Stock	4.04	4.62	5.19	5.87	6.56
Cost of Sales	76.74	91.78	103.18	116.74	130.58
GROSS PROFIT	**20.05**	**24.94**	**29.81**	**35.50**	**42.17**
	20.72%	**21.36%**	**22.41%**	**23.32%**	**24.41%**
Salary to Staff	3.36	4.03	4.84	5.81	6.97
Interest on Term Loan	1.50	1.32	0.95	0.58	0.20
Interest on working Capital	0.77	0.77	0.77	0.77	0.77
Rent	3.00	3.45	3.97	4.56	5.25
Selling & Administrative Exp.	4.36	5.84	6.65	7.61	8.64
TOTAL	**12.99**	**15.41**	**17.18**	**19.33**	**21.82**
NET PROFIT	7.06	9.52	12.63	16.18	20.34
Taxation	0.54	1.03	1.92	2.98	4.23
PROFIT (After Tax)	6.53	8.49	10.72	13.20	16.12
NET PROFIT RATIO	**6.74%**	**7.28%**	**8.06%**	**8.67%**	**9.33%**

PROJECTED CASH FLOW STATEMENT **(in Lacs)**

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
SOURCES OF FUND					
Own Margin	2.48				
Net Profit	7.06	9.52	12.63	16.18	20.34
Depreciation & Exp. W/off	2.55	2.17	1.84	1.57	1.33
Increase in Cash Credit	7.00	-	-	-	-
Increase In Term Loan	15.30	-	-	-	-
Increase in Creditors	1.46	0.23	0.24	0.26	0.27
Increase in Provisions & Oth labilities	0.40	0.08	0.10	0.22	0.16
	-				
TOTAL :	**36.26**	**12.00**	**14.81**	**18.22**	**22.10**
APPLICATION OF FUND					
Increase in Fixed Assets	17.00				
Increase in Stock	7.17	1.07	1.09	1.23	1.27
Increase in Debtors	2.26	0.46	0.38	0.45	0.48
Repayment of Term Loan	1.70	3.40	3.40	3.40	3.40
Loans & Advances /Other Current Assets	2.50	0.50	1.00	0.50	- 1.00
Drawings	2.50	6.00	7.50	8.50	11.00
Taxation	0.54	1.03	1.92	2.98	4.23
TOTAL :	**33.67**	**12.46**	**15.28**	**17.06**	**19.38**
Opening Cash & Bank Balance	-	2.59	2.12	1.65	2.82
Add : Surplus	2.59	- 0.46	-0.47	1.16	2.73
Closing Cash & Bank Balance	**2.59**	**2.12**	**1.65**	**2.82**	**5.54**

CALCULATION OF D.S.C.R

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
CASH ACCRUALS	9.08	10.66	12.56	14.76	17.45
Interest on Term Loan	1.50	1.32	0.95	0.58	0.20
Total	10.58	11.99	13.51	15.34	17.65
REPAYMENT					
Instalment of Term Loan	1.70	3.40	3.40	3.40	3.40
Interest on Term Loan	1.50	1.32	0.95	0.58	0.20
Total	3.20	4.72	4.35	3.98	3.60
DEBT SERVICE COVERAGE RATIO	**3.30**	**2.54**	**3.11**	**3.86**	**4.90**
AVERAGE D.S.C.R.					**3.48**

REPAYMENT SCHEDULE OF TERM LOAN							
					Interest		11.00%
Year	**Particulars**	**Amount**	**Addition**	**Total**	**Interest**	**Repayment**	**Closing Balance**
1st	Opening Balance						
	1st month	-	15.30	15.30	-	-	15.30
	2nd month	15.30	-	15.30	0.14	-	15.30
	3rd month	15.30	-	15.30	0.14	-	15.30
	4th month	15.30	-	15.30	0.14	-	15.30
	5th month	15.30	-	15.30	0.14	-	15.30
	6th month	15.30	-	15.30	0.14	-	15.30
	7th month	15.30	-	15.30	0.14	0.28	15.02
	8th month	15.02	-	15.02	0.14	0.28	14.73
	9th month	14.73	-	14.73	0.14	0.28	14.45
	10th month	14.45	-	14.45	0.13	0.28	14.17
	11th month	14.17	-	14.17	0.13	0.28	13.88
	12th month	13.88	-	13.88	0.13	0.28	13.60
					1.50	**1.70**	
2nd	Opening Balance						
	1st month	13.60	-	13.60	0.12	0.28	13.32
	2nd month	13.32	-	13.32	0.12	0.28	13.03
	3rd month	13.03	-	13.03	0.12	0.28	12.75
	4th month	12.75	-	12.75	0.12	0.28	12.47
	5th month	12.47	-	12.47	0.11	0.28	12.18
	6th month	12.18	-	12.18	0.11	0.28	11.90
	7th month	11.90	-	11.90	0.11	0.28	11.62
	8th month	11.62	-	11.62	0.11	0.28	11.33
	9th month	11.33	-	11.33	0.10	0.28	11.05
	10th month	11.05	-	11.05	0.10	0.28	10.77
	11th month	10.77	-	10.77	0.10	0.28	10.48
	12th month	10.48	-	10.48	0.10	0.28	10.20
					1.32	**3.40**	
3rd	Opening Balance						
	1st month	10.20	-	10.20	0.09	0.28	9.92
	2nd month	9.92	-	9.92	0.09	0.28	9.63
	3rd month	9.63	-	9.63	0.09	0.28	9.35
	4th month	9.35	-	9.35	0.09	0.28	9.07
	5th month	9.07	-	9.07	0.08	0.28	8.78
	6th month	8.78	-	8.78	0.08	0.28	8.50
	7th month	8.50	-	8.50	0.08	0.28	8.22
	8th month	8.22	-	8.22	0.08	0.28	7.93
	9th month	7.93	-	7.93	0.07	0.28	7.65
	10th month	7.65	-	7.65	0.07	0.28	7.37
	11th month	7.37	-	7.37	0.07	0.28	7.08
	12th month	7.08	-	7.08	0.06	0.28	6.80
					0.95	**3.40**	

4th	Opening Balance						
	1st month	6.80	-	6.80	0.06	0.28	6.52
	2nd month	6.52	-	6.52	0.06	0.28	6.23
	3rd month	6.23	-	6.23	0.06	0.28	5.95
	4th month	5.95	-	5.95	0.05	0.28	5.67
	5th month	5.67	-	5.67	0.05	0.28	5.38
	6th month	5.38	-	5.38	0.05	0.28	5.10
	7th month	5.10	-	5.10	0.05	0.28	4.82
	8th month	4.82	-	4.82	0.04	0.28	4.53
	9th month	4.53	-	4.53	0.04	0.28	4.25
	10th month	4.25	-	4.25	0.04	0.28	3.97
	11th month	3.97	-	3.97	0.04	0.28	3.68
	12th month	3.68	-	3.68	0.03	0.28	3.40
					0.58	**3.40**	
5th	Opening Balance						
	1st month	3.40	-	3.40	0.03	0.28	3.12
	2nd month	3.12	-	3.12	0.03	0.28	2.83
	3rd month	2.83	-	2.83	0.03	0.28	2.55
	4th month	2.55	-	2.55	0.02	0.28	2.27
	5th month	2.27	-	2.27	0.02	0.28	1.98
	6th month	1.98	-	1.98	0.02	0.28	1.70
	7th month	1.70	-	1.70	0.02	0.28	1.42
	8th month	1.42	-	1.42	0.01	0.28	1.13
	9th month	1.13	-	1.13	0.01	0.28	0.85
	10th month	0.85	-	0.85	0.01	0.28	0.57
	11th month	0.57	-	0.57	0.01	0.28	0.28
	12th month	0.28	-	0.28	0.00	0.28	-
					0.20	**3.40**	

DOOR TO DOOR	60	MONTHS
MORATORIUM PERIOD	6	MONTHS
REPAYMENT PERIOD	54	MONTHS

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