

# **HOT WATER BAGS OR ICE BAGS**

## **1. INTRODUCTION:**

A hot water bottle is a container filled with hot water and sealed with a stopper, used to provide warmth, typically while in bed, but also for the application of heat to a specific part of the body. Hot water bags, Ice water bags are widely used in various therapeutic / medical applications. Besides this, these health care products are also useful as general household items. All these health care products are carefully manufactured in an ultra-hygienic condition - as per the international norms.

## **2. PRODUCT & ITS APPLICATION:**

Hot water or Ice bags are used as a Natural Body Warmer and also for Heat Therapy Treatment. They are useful In Case Of – Joint Pains, Muscular Cramps, Menstrual Pains, Muscle Pull, Stomach and Back Aches, Arthritic and Rheumatic Pains, Bed Warmer, Sports Aches and Pains, Soothing Children and Elders.

## **3. DESIRED QUALIFICATIONS FOR PROMOTER:**

Graduate in any graduate.

## **4. MARKET POTENTIAL AND MARKETING ISSUES, IF ANY:**

At present health sector in the country has been experiencing speedy development. With more and more emphasis on medicine and opening of hospitals/clinics both in urban as well as rural areas, the demand for hot water bags and ice bags is increasing many folds. In addition to the hospital/clinic requirements these items have become essential households' items as a safe guard to diseases that may occur. However, the market for hot water bags

and ice bags is quality conscious and “Duck Bags” and “Hicks” are the reputed national brands producing these items. Therefore, it is important that the new units producing hot water bags and ice bags should immediately acquire quality trade mark for these items to enable them make healthy competition in the market.

## **5. RAW MATERIAL REQUIREMENTS:**

Hot water bottles are meant to contain very hot fluids and also supposed to be in contact with human skin. It is therefore of the utmost importance to ensure, mainly through standards and regulations, that the closing and welding is stable enough to prevent burns, but also to make sure that the bottle's chemical components are not dangerous for human health. More generally, it is crucial to certify and assure that hot water bottles, whether manufactured, sold or imported, are safe. For instance, the United Kingdom defined British Standards for hot water bottles to regulate their manufacture and sale as well as to ensure their compliance with all safety standards. The British Standards BS 1970 and BS 1970:2012 (updated version) define, for instance, the bottles' filling characteristics, safety instructions, allowed materials and components as well as testing methods such as tensile tests. Most regulations applied to a country are generally harmonized in order to be applied and applicable in a larger area, such as a trade zone.

However, the major raw materials and consumables required per month for production of hot water bags & ice bags for our project are as follows. The procurement costs of these materials are to be considered at the prevailing market price.

1. Smoked sheet: 1,200 kg. 2. Renacit 7 : 6 kg. 3. Precipitated calcium carbonate: 1,000 kg. 4. Zinc oxide: 125 kg. 5. Paraffin oil: 35 kg. 6. Stearic acid: 12 kg. 7. HSL Beads: 20 kg. 8. Paraffin wax: 12 kg. 9. VulcaniteF: 15 kg. 10. Vulcacit thiuram : 2 kg. 11. Sulphur : 15 kg. 12. Color: 6 kg. 13. Mould releasing agents'silicon: 1 kg. Emulsions etc. 14. Packing materials viz bags and Paper cartons.

## **6. MANUFACTURING PROCESS:**

The above raw materials are taken for curing at 150 degree C for 10 minutes. The major process steps involved are as follows. Smoked sheet and Renacit 7 are masticated on mixing mill and left for maturation for a period of 24 hours. Zinc oxide and stearic acid are then mixed to the above compound mix. Then Precipitated Calcium Carbonate, Paraffin oil HSL beads and Paraffin Wax are mixed. Vulcacit F and thiuram are mixed with the compound mix. Lastly sulphur and color are added and the mass is left to mature for 8 hours. The rubber compound sheets are then prepared and transferred to working table. According to pre-determined size bags, pieces are cut from the sheet with the help of pattern. The two sides of the bags are joined together and cured in a hydraulic press.

## 7. MANPOWER REQUIREMENT:

The enterprise requires 8 employees as detailed below:

Sr. No.	Designation of Employees	Salary Per Person	Monthly Salary ₹	Number of employees required				
				Year-1	Year-2	Year-3	Year-4	Year-5
1	Machine Operators	12,000	12000.00	1	1	1	1	1
2	Helpers	8,000	24000.00	3	3	3	4	4
1	Production supervisor	15,000	15000.00	1	1	1	1	1
2	Accounts/Stores Asst	12,500	12500.00	1	1	1	1	1
3	Office Boy	9,000	9000.00	1	1	1	1	1
	<b>Total</b>		72500.00	7	7	7	8	8

## 8. IMPLEMENTATION SCHEDULE:

The project can be implemented in 3 months' time as detailed below:

Sr. No.	Activity	Time Required (in months)
1	Acquisition of premises	1.00
2	Construction (if applicable)	1.00
3	Procurement & installation of Plant & Machinery	1.00
4	Arrangement of Finance	2.00
5	Recruitment of required manpower	1.00
	Total time required <i>(some activities shall run concurrently)</i>	3.00

## 9. COST OF PROJECT:

The project shall cost ₹ 32.58 lacs as detailed below:

Sr. No.	Particulars	₹ in Lacs
1	Land	0.00
2	Building	0.00
3	Plant & Machinery	18.35
4	Furniture, Electrical Installations	1.00
5	Other Assets including Preliminary / Pre-operative expenses	4.59
6	Margin for Working Capital	8.64
	<b>Total</b>	<b>32.58</b>

## 10. MEANS OF FINANCE:

Bank term loans are assumed @ 75 % of fixed assets.

Sr. No.	Particulars	₹ in Lacs
1	Promoter's contribution	8.14
2	Bank Finance	24.43
	<b>Total</b>	<b>32.58</b>

## 11. WORKING CAPITAL CALCULATION:

The project requires working capital of ₹ 8.64 lacs as detailed below:

Sr. No.	Particulars	Gross Amt	Margin %	Margin Amt	Bank Finance
1	Inventories		0.25	1.08	3.24
2	Receivables	2.16	0.25	0.54	1.62
3	Overheads	2.16	100%	2.16	0.00
4	Creditors	-		0.00	0.00
	<b>Total</b>	8.64		3.78	4.86

## 12. LIST OF MACHINERY REQUIRED:

A detail of important machinery is given below: Power Requirement: 50 HP

Sr. No.	Particulars	UOM	Qty	Rate (₹)	Value (₹ in Lacs)
	<b>Plant &amp; Machinery / equipments</b>				
<b>a)</b>	<b>Main Machinery</b>				
i.	Rubber mixing mill	NOS.	1	250000	2.50

Sr. No.	Particulars	UOM	Qty	Rate (₹)	Value (₹ in Lacs)
ii.	Hydraulic press 17" x 17"	Nos	1	700000	7.00
iii.	Hydraulic press 14" x 14"	Nos	2	620000	6.20
<b>b)</b>					
i.	Steam heated press	Nos	1	145,000	1.45
ii.	Boiler, weighing machine, etc.	NOS.	1	21000	1.20
	<i>sub-total Plant &amp; Machinery</i>				<b>18.35</b>
	<b>Furniture / Electrical installations</b>				
a)	Office furniture	LS	1	10000	0.10
b)	Stores Almirah	LS	1	5,000	0.05
c)	Computer & Printer	L. S.	1	10000	0.85
	<i>sub total</i>				<b>1.00</b>
	<b>Other Assets</b>				
a)	preliminary and preoperative				4.59
	<i>sub-total Other Assets</i>				4.59
	<b>Total</b>				<b>23.94</b>

### 13. PROFITABILITY CALCULATIONS:

Sr. No.	Particulars	UOM	Year-1	Year-2	Year-3	Year-4	Year-5
1	Capacity Utilization	%	60%	70%	80%	90%	100%
2	Sales	₹. In Lacs	25.92	30.24	34.56	38.88	43.20
3	Raw Materials & Other direct inputs	₹. In Lacs	15.04	17.55	20.06	22.56	25.07
4	Gross Margin	₹. In Lacs	10.88	12.69	14.50	16.32	18.13
5	Overheads except interest	₹. In Lacs	6.38	6.78	7.58	7.82	7.98
6	Interest	₹. In Lacs	2.44	2.44	1.63	1.22	0.98
7	Depreciation	₹. In Lacs	12.85	9.18	6.42	4.59	4.13
8	<b>Net Profit before tax</b>	₹. In Lacs	<b>-10.79</b>	<b>-5.71</b>	<b>-1.13</b>	<b>2.69</b>	<b>5.04</b>

#### 14.        **BREAKEVEN ANALYSIS:**

The project shall reach cash break-even at 49.41 % of projected capacity as detailed below:

Sr. No.	Particulars	UOM	Value
1	Sales at full capacity	₹. In Lacs	43.20
2	Variable costs	₹. In Lacs	25.07
3	Fixed costs incl. interest	₹. In Lacs	8.96
4	$BEP = FC/(SR-VC) \times 100 =$	% of capacity	49.41%