

Project Profile: Hot & Cold Water Bags



Project Profile 4: Hot & Cold Water Bags

Introduction

A hot water bottle is a container that has been filled with hot water and is closed with a stopper. It is used to provide warmth, usually while in bed, but it can also be used to provide heat to a particular area of the body. Many therapeutic and medicinal applications use hot water bags and ice water bags. In addition, many healthcare supplies serve a purpose as standard household objects. All of these medical supplies are meticulously created in an extremely sanitary environment in accordance with international standards.

Products & Its Application

As a Natural Body Warmer and for Heat Therapy Treatment, hot water or ice bags are employed. They can help with joint pain, muscle cramps, menstrual pain, muscle pull, stomach and back aches, rheumatoid and arthritis pain, bed warmer, sports injuries, and calming young children and the elderly.

Desired Qualification for Promoter

There is no specific requirement of education, any graduate is eligible to start this business.

Industry Outlook and Trends

There are numerous worldwide, regional, and local suppliers in the global hot water bag industry. In the future, increased technical innovation and M&A activity are expected to increase market rivalry. Additionally, a large number of regional and local manufacturers offer specialised application goods for a variety of end users. Due to the overseas vendors' superior quality, dependability, and technological advancements, the new vendors entering the market are having a difficult time competing with them.

Market Potential and Market 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.

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. Vulcanite F: 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.

Manufacturing Process

The aforementioned raw materials are used for a 10-minute curing process at 150 degrees C. The following are the main steps in the procedure. Renacit 7 and smoked sheet are masticated on a mixing mill and given a 24-hour maturation period. The aforementioned component mixture is then combined with zinc oxide and stearic acid. Then, paraffin wax, paraffin oil HSL beads, and precipitated calcium carbonate are combined. The compound mix is combined with vulcacit F and thiuram.

After adding colour and sulphur, the bulk is given eight hours to mature. The sheets of rubber compound are then prepared and placed on the work surface. The pieces are cut from the sheet using a pattern and predetermined size bags. The two sides of the bags are joined together and cured in a hydraulic press.

Manpower Requirement

For the production of peanut butter following category of manpower will be required for day to day production.

| Sr.No. | Designation | No. of employees required | Amount (Per Person) | Total |
|--------------|--------------------|---------------------------|---------------------|---------------|
| 1 | Machine Operator | 1 | 13,000 | 13,000 |
| 2 | Production Manager | 1 | 18,000 | 18,000 |
| 3 | Office Assistant | 1 | 7,000 | 7,000 |
| Total | | | | 38,000 |

Implementation Schedule

The project can be commissioned within eight months of tying up of finance. There is no complicated machinery and equipment required and space required is also small. Therefore, implementation time is eight months.

List of Machinery

| Sr. No. | Plant & Machinery / Equipments |
|---------|--------------------------------|
| 1 | Rubber mixing mill |
| 2 | Hydraulic press 17" x 17" |
| 3 | Hydraulic press 14" x 14" |
| 4 | Steam heated press |
| 5 | Boiler, weighing machine, etc. |

All the machines and equipment are available from local manufacturers. The entrepreneur needs to ensure proper selection of product mix and proper type of machines and tooling to have modern and flexible designs. It may be worthwhile to look at reconditioned imported machines, dies and tooling. Some of the machinery and dies and tooling suppliers are listed here below:

- Kamdhenu Agro Machinery

Plot No. 6, Near Power House,

Wathoda Road, Wathoda

Nagpur - 440035

Maharashtra, India

- Future Industries Private Limited

Shed No. 15, Ambica Estate,
 Corporation Municipal Plot,
 Opposite Sadvichar Hospital,
 Naroda, Ahmedabad - 382330,
 Gujarat, India

- The Global Pharma Equipments

Star Industrial Estate,
 D-32, Naik Pada,
 Near Hanuman Mandir,
 Opposite Dwarka Industrial Estate,
 Vasai East, Vasai - 401208,
 Maharashtra, India

Cost of Project

The cost of project as per market rate of factory building, machinery, and miscellaneous items, preliminary and pre-operative expenses works out as under:

| Sr. No. | Particulars | Amount |
|--------------|--------------------------------------|-----------------|
| 1 | Land(rent) | 30,000 |
| 2 | Plant & Machinery | 6,50,000 |
| 3 | Furniture & Electrical Installations | 1,00,000 |
| 4 | Miscellaneous | 50,000 |
| Total | | 8,30,000 |

Means of Finance

Based on the present norms of bank, means of finance is worked out as under:

| Sr. No. | Particulars | Amount |
|--------------|-------------------------|-----------------|
| 1 | Promoter's contribution | 2,68,000 |
| 2 | Bank Finance | 6,00,000 |
| Total | | 8,68,000 |

Break-Even Analysis

| Sr. No. | Particulars | Details |
|---------|---|---------------|
| 1 | Fixed Investment (A) | 830000 |
| 2 | Loan | 600000 |
| 3 | Interest Rate @7.5% on Loan (B) | 45000 |
| 4 | Capital Investment | 268000 |
| 5 | Depreciation @10% on Capital investment (C) | 26800 |
| 6 | Total Fixed cost (D = A+B+C) | 901800 |
| 7 | Variable Cost (E) | 50000 |
| 8 | Manpower cost (F) | 38000 |
| 9 | Total Variable cost (G = E+F) | 88000 |
| 10 | Number of Units Sold/Month (H) | 700 |
| 11 | Average Variable cost (I = G/H) | 126 |
| 12 | Selling price per unit (J) | 300 |
| 13 | Contribution margin (K = J-I) | 174 |
| 14 | Beak Even Point in Units (D/K) | 5174 |

Assumptions

- Interest rate is assumed at the rate of 7.5% p.a.
- Depreciation on capital investment i.e. machinery would be 10% p.a.
- Unit can produce 1200 units of packets p.m. at full capacity then it would be at breakeven when they will sell 5174 units of hot & cold water bags.
- Variable cost comprises of the raw material price p.m. and electricity and other administrative/utility expenses.

Statutory/Government Approvals

As per the allocation of business rules under the Constitution, labour is in the concurrent list of subjects. It is dealt with by the MOLE at the Central and Departments of Labour under State Governments in respective States / UTs. The MOLE has enacted workplace safety and health statutes concerning workers in the manufacturing sector, mines, ports and docks and in construction sectors.

Further, other Ministries of the Government of India have also enacted certain statutes relating to safety aspects of substances, equipment, operations etc. Some of the statutes applicable in the manufacturing sector are discussed below:

The Static and Mobile Pressure Vessels (Unfired) Rules, 1981

These (SMPV) Rules are notified under the Explosives Act, 1884. These rules regulate storage, handling and transport of compressed gases. These rules stipulate requirements regarding construction and fitments, periodic testing, location, fire protection, loading and unloading facilities, transfer operations etc. in respect of pressure vessels whose water capacity exceeds one thousand litres. These rules are enforced by the Chief Controller of Explosives under the Ministry of Industry and Commerce, Govt. of India (PESO).

The Manufacture, Storage and Import of Hazardous Chemicals Rules (MSIHC), 1989

These MSIHC Rules are notified under the Environment (Protection) Act, 1986. These rules are aimed at regulating and handling of certain specified hazardous chemicals. The rules stipulate requirements regarding notification of site, identification of major hazards, taking necessary steps to control major accident, notification of major accident, preparation of safety report and on-site emergency plan; prevention and control of major accident, dissemination of information etc. These rules are notified by the Ministry of Environment and Forests (MOEF) but enforced by the Inspectorates of Factories of respective States / UTs in the manufacturing sector.

The Factories Act, 1948 and State Factories Rules

The Factories Act, 1948 is very comprehensive legislation dealing with the matters of safety, health and welfare of workers in factories. The Act places duties on the occupier to ensure safety, health and welfare of workers at work. Some of the salient provisions of the Act include:

- Guarding of machinery
- Hoists and Lifts; Lifting Machines and Appliances
- Revolving Machinery
- Pressure Plant
- Excessive Weight
- Protection of Eyes
- Precautions against dangerous fumes, gases etc.
- Explosive or inflammable dust, gas etc.
- Precautions in case of fire
- Safety of buildings and machinery
- Permissible limits of exposure of chemical and toxic substances
- Entrepreneur may contact State Pollution Control Board where ever it is applicable.

Backward and Forward Integration

Chemical companies often become integrated and undergo other activities outside the chemical industry. Increased competition prompts many companies to reduce supply chain costs by looking outside the chemical sector at suppliers and customers. While most companies within the chemicals sector primarily produce chemicals, some companies also conduct other manufacturing activities. The exact proportion of chemicals sector companies that are integrated with other sector activities is unknown, but many companies actively seek vertical integration. Many manufacturers pursue vertical integration to secure suppliers and customers for their products.

Mergers and acquisitions are a common way for companies to undertake new chemical ventures. By purchasing their chemical suppliers, some manufacturers secure future chemical feedstock for their products or other chemicals that they use in manufacturing. The company making the purchase obtains valuable expertise and equipment. Some mining and petrochemical production is more cost-effective when integrated within a chemical company.

Energy and feedstock costs are often a significant expense for chemical companies. Integrating chemical production with activities that secure supplies of chemical feedstock and energy is relatively common as chemical companies grow. Chemical companies are located near mines, oil fields, ammonia factories and water supplies. This reduces transportation costs and increases the reliability of supplies by reducing the distance between feedstock and the factory.

Some companies, such as Sino-Coking Coal and Coke Chemical Industries Incorporated, own their mines. BHP Billiton operates a broad range of mines and is primarily a mining company. It does, however, also produce petrochemical feedstock for the chemical industry and therefore operates within the chemical industry as well. These companies technically operate within both the chemical and mining industries in their normal business operations.

Integrating a chemical company with other activities provides several direct benefits for the company and is becoming increasingly common. High energy costs necessitate greater control of energy resources and minimal reliance on expensive transportation. Chemical companies experience volatile profitability due to fluctuations in feedstock and energy expenses. Some companies control this volatility through careful supply chain management and by charging supply surcharges. Actively researching and developing alternative feedstock and energy supplies helps the company reduce costs.

Vertical integration supports these activities by eliminating redundant activities at multiple companies and increasing efficiency. By consolidating activity among multiple, similar operations, chemical companies achieve cost savings that contribute to higher profitability. End products are often very profitable, and some chemical companies purchase their former customers to take advantage of the marked-up prices of products further along in the supply chain.

Integration may become more common for many chemical companies as competition strengthens and traditional feedstock becomes more expensive. Market demand for chemical feedstock increases as emerging market economies grow and result in increased consumer spending around the world.

Training Centers

There is no such training required to start this business but, basic chemical bachelor's degree is plus point for enterpriser. Promoter may train their employees in such specialized institutions to grow up the business. There are few specialised Institutes provide degree certification in chemical Technology, few most famous and authenticate Institutions are as follows:

- Department of chemical LD college of engineering

No.120, Circular Road, University Area, Navrangpura,

Opposite Gujarat University, Ahmedabad, Gujarat 380015

- MIT College of chemical Engineering, Pune

Gate.No.140, Raj Baugh Educational Complex,

Pune Solapur Highway,

Loni Kalbhor, Pune - 412201

Maharashtra, India

Udyamimitra portal (link : www.udyamimitra.in) can also be accessed for handholding services viz. application filling / project report preparation, EDP, financial Training, Skill Development, mentoring etc.

Entrepreneurship program helps to run business successfully is also available from Institutes like Entrepreneurship Development Institute of India (EDII) and its affiliates.