### Activated Carbon From Coconut Shell

<table>
<thead>
<tr>
<th><strong>Capacity</strong></th>
<th>1500 MT/annum</th>
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<tbody>
<tr>
<td><strong>Plant and machinery cost:</strong></td>
<td>157.00 Lakh</td>
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<tr>
<td><strong>Working Capital:</strong></td>
<td>0.00 Lakh</td>
</tr>
<tr>
<td><strong>Rate of return (ROR):</strong></td>
<td>47.00 %</td>
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<td><strong>Break Even Point (BEP):</strong></td>
<td>40.00 %</td>
</tr>
<tr>
<td><strong>TCI:</strong></td>
<td>380.00 Lakh</td>
</tr>
<tr>
<td><strong>Cost of Project:</strong></td>
<td>380.00 Lakh</td>
</tr>
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Activated carbon shows high absorptivity for gases, vapors and colloidal solids in either the gas ion or liquid phase. It is available in many forms such as pellets, granules and in powder form. Activated carbon is very important chemical, has wide application and employed by numerous industries which require absorption of certain gases and vapors in purification, in catalytic chemical reactions, decolorisation of vegetable oil and sugar solutions. Activated carbons have a large surface area, liquid phase activated carbons are light in weight, fluffy powder while gas phase activated carbons are hard and are in the form of pellets. Many carbons of industrial value are prepared from coal and from organic vegetable and animal matter. A large variety of raw materials are available for the manufacture of different forms of activated carbon such as, Coal, petroleum coke, and wood charcoal are activated by gas activation; Industrial waste e.g. raw dust, bagasse, molasses, straw, tanbark waste, coconut pericarp and shell, corn cobs, paddy and ground nut husk, cocoa been shell, distillery slop, waste Mahua flowers, waste wood pulp liquor, and filter press mud from sugar factories etc. Uses & Application 

- For Purification of liquids: the powdered form of activated carbon is added to the liquid to be purified and the mixture is agitated and finally filtered.
- Granulated activated carbons are used for purification of gases or liquids and are used in a vertical carbon packed column.
- Removing or improving the color and flavor of edible materials, such as agar, beer, cider, wines whisky, vinegar, fruit juices, gelatin, pectin, and cocoa butter.
- Removing color, odor grease and colloids from dry cleaning fluids such as naphtha, gasoline, carbon tetrachloride, etc.
- Dephenolizing effluent gas works liquor.
- Removing oil and grease from boiler feed water and electroplating solutions.
- Recovering iodine from sea water, and bromine from brines.
- Reclaiming aniline, benzene, phenol, and camphor from trade wastes.
- Preparation of biological products like vitamins hormones, and enzymes.
- Activated carbons have been used as carriers for catalyst in the manufacture of chlorinated hydrocarbons. They are used as catalytic dehydrogenation agents in the production of ketones from higher alcohols.
- Gas adsorbent carbon is employed for the recovery of gasoline from natural gas.
- It is also used for the removal of hydrogen sulphide from town gas, for purification of carbon dioxide from distillery gases, and for the maintenance of vacuum in containers for liquid air and, generally in vacuum flasks.
- Activated carbon is used in the preparation of pills and digestive tablets, utilized in the treatment of ailments of the stomach due to hyper acidity, its large doses, either alone or mixed with Karoline, are administered for diarrhea.
- It is used as a dressing for suppurating wounds, used as an antidote to various forms of poisoning, especially those due to mercury salts strychnine, phenol, morphine, atropine, oxalic acid, mushroom, and poisons for which other antidotes are not available.

Market Survey: The activated carbon industry consists of more than 50 units spread countrywide most of which are in small-scale industrial sector (SSI Sector). Of the total number of units in operation, only 10 to 12 units cater to the national market while the other serve the local or regional markets. In general activated carbon is manufactured in the northern region from wood charcoal (mostly made from pinewood) whereas in the southern region, it is made from charcoal of the hard shell of coconut. The domestic market for activated carbon is fast expanding with rapid growth of several end user industries. The demand from the vegetable oil industry is the largest consumer of activated carbon is 24,000 tones. The capacity utilization ratio is reported to around 85%. In such circumstances effected by higher demand as compared to shorter supply, end user industries have to depend partially on the imports and partially on the lower consumption of activated carbon at their units. The demand for carbon black is going up in India, due to the steady rise in automobile sales and its direct correlation with the tyre industry. Total installed carbon black capacity in India now stands at 700,000MT. With a brisk pick-up in the tyre sector, demand for carbon black is expected to increase 8% to 10% per annum in the domestic market. Global Demand:: The global activated carbon industry is estimated to be around 1.1 million metric ton. Demand for virgin activated carbon is expected to rise by around 10% annually through 2014, worldwide. The global activated carbon market was...
worth $1.8 billion in 2011 and is estimated to reach $3 billion by 2016, growing at a CAGR of 11.1% from 2011 to 2016. The demand for activated carbon (AC) is expected to grow due to the new demand in mercury control technology for industrial air purification applications. Demand for activated carbon in mercury control applications alone is forecast to grow more than fivefold to 520 million pounds. Since powdered activated carbon (PAC) is overwhelmingly the product type used in mercury control technology, the PAC segment will expand to account for two-thirds of US product demand in 2014 in volume terms. Granular activated carbon (GAC) types will see strong gains through 2014 as well, due primarily to expanded use of activated carbon filter systems in municipal drinking water treatment. World demand for virgin activated carbon is forecast to expand an impressive 9.0 percent per annum through 2014 to 1.7 million metric tons. The US represents the largest national market for activated carbon in the world. Current world demand for carbon black is estimated to be 10.4 million tones a year against an installed capacity of 14.26 million tones indicating supply is outstripping demand. According to industry sources, global carbon black capacity is expected to grow at a compounded annual growth rate (CAGR) of 3.3% between 2011 and 2015 even as demand is expected to grow at a CAGR of 5.5%. Demand for carbon black in overseas markets, particularly the US and Japan, has started picking up in the recent past, with China, India, and Central and Eastern Europe showing much higher demand. Few Major Players are listed below: Indo German Carbons Ltd. Ion Exchange (India) Ltd. Triton Laboratories Ltd.

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