Activated Alumina

<table>
<thead>
<tr>
<th>Capacity</th>
<th>6 MT/Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant and machinery cost:</td>
<td>72.00 Lakh</td>
</tr>
<tr>
<td>Working Capital:</td>
<td>0.00 Lakh</td>
</tr>
<tr>
<td>Rate of return(ROR):</td>
<td>29.00 %</td>
</tr>
<tr>
<td>Break Even Point (BEP):</td>
<td>69.00 %</td>
</tr>
<tr>
<td>TCI:</td>
<td>150.00 Lakh</td>
</tr>
<tr>
<td>Cost of Project:</td>
<td>150.00 Lakh</td>
</tr>
</tbody>
</table>
Activated alumina is manufactured by dehydroxylating aluminium hydroxide in a way that produces a highly porous substance. The chemical composition can be represented by $\text{Al}_2\text{O}_3\cdot\text{OH}_2$. The term "activated aluminas" refers to the activation those results from calcination. Activated alumina has a high surface area to weight ratio due to its extensive pore structure, is resistant to thermal shock and abrasion, and will not shrink, swell, soften nor disintegrate when placed in water. The active sites consist of acidic alumina ions, basic oxide ions and polar Al-OH groups. Opened bonds from the alumina ions act as Lewis acids, while the Al-OH groups act as dipoles. Activated alumina is typically used as an adsorbent or as a support in catalyst applications. The most prevalent usage for activated alumina is as a desiccant. In this application, water contained in air sticks to the alumina surface as the air passes through the alumina pores. The water molecules become trapped and are filtered from the air. This process is reversible by heating the alumina to 390°F (200°C). Driving off the trapped water is called regeneration. As a catalyst in the hydrogen peroxide production process. Most commonly used in the process known as auto-oxidation, anthraquinone is oxidized and reacts to give peroxide. The working solution of anthraquinone is filtered through alumina to adsorb impurities and recycled. For sulfur removal from gas streams (Claus catalyst process). Activated alumina converts hydrogen sulfide into elemental sulfur under proper conditions. This technology is used extensively in the oil refining industry. India ranked seventh in alumina production with a total output of 3 mn tonnes, a share of nearly 5% of the global production of 61 mn tonnes. In India the activated alumina is being manufactured by the limited firms only whose production is quite insufficient to meet the growing demand. The consumption is increasing rapidly while the production is not sufficient. In order to fill up the gap between demand and supply, few more units for the manufacture of activated alumina are needed. As a whole it is a good project for entrepreneurs for investment.