DD-431

Activated alumina spheres

BASF DD-431 is a high surface area activated alumina sphere with tailored pore size distribution to enhance Claus reaction activity through increased diffusion rates and surface activity.

Product Application and Benefits

DD-431 is an excellent Claus catalyst for common Sulfur Recovery Units (SRU) including oxygen enriched Claus units. It is designed for use in all beds for high activity conversions of H₂S/SO₂ and for conversion of COS and CS₂ in the first converter. It is available in nominal sizes of 3/16” and 1/4” spheres.

The custom tailored pore structure includes optimum levels of micro, meso and macropores, thereby providing maximum access to active sites while minimizing sulfur deposition (condensation) during normal operations. DD-431’s meso and macropores aid in the diffusion of the reactants into, and the large sulfur molecules away from, active sites. DD-431 has ideal pore distribution for use in sub-dewpoint tail gas processes such as CBA, MCRC and Sulfreen.

DD-431 is particularly well suited for use in sulfur recovery processes operated near or below the sulfur dewpoint. The third reactor of a Claus unit can be operated closer to the sulfur dewpoint to enhance sulfur recovery.

Packaging

- 2000 lb super sacks

### Chemical Composition (wt %)

<table>
<thead>
<tr>
<th>Compounds</th>
<th>3/16”</th>
<th>1/4”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃</td>
<td>93.0</td>
<td></td>
</tr>
<tr>
<td>SiO₂</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>Fe₂O₃</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>Na₂O</td>
<td>0.30</td>
<td></td>
</tr>
<tr>
<td>LOI (1000º C)</td>
<td>6.5</td>
<td></td>
</tr>
</tbody>
</table>

### Physical Properties

<table>
<thead>
<tr>
<th></th>
<th>3/16” (4.8 mm)</th>
<th>1/4” (6.4 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Area, m²/g</td>
<td>375</td>
<td>360</td>
</tr>
<tr>
<td>Total Pore Volume, cc/g</td>
<td>0.55</td>
<td>0.55</td>
</tr>
<tr>
<td>Macroporosity &gt; 750 A, cc/g</td>
<td>0.18</td>
<td>0.15</td>
</tr>
<tr>
<td>Crush Strength (5 mesh), lbs (kg)</td>
<td>30 (14)</td>
<td>50 (23)</td>
</tr>
<tr>
<td>Abrasion Loss, wt %</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Bulk Density, lbs/ft³ (kg/m³)</td>
<td>40 (641)</td>
<td>40 (641)</td>
</tr>
</tbody>
</table>
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