13X-APG MOLSIV™ ADSORBENT

Description

13X-APG adsorbent is the sodium form of the Type X molecular sieve and an alkali metal aluminosilicate. 13X-APG adsorbent will adsorb molecules with critical diameters up to 8 angstroms.

Applications

13X-APG adsorbent is specifically developed for air plant feed purification. It has a high capacity for carbon dioxide and water and maintains its capacity well above ambient conditions. It is available in a variety of shapes and sizes to suit your operating needs.

In addition, 13X-APG adsorbent can adsorb molecules, such as olefins, aromatics, straight and branch chain hydrocarbons, SOx, and NOx compounds.

Chemical Formula

\[ \text{Na}_x [(\text{AlO}_2)_x(\text{SiO}_2)_y] \cdot z \text{H}_2\text{O} \]

Regeneration

13X-APG adsorbent can be regenerated for re-use by purging at elevated temperatures or at compressor waste heat temperatures.

Safety and Handling

See the UOP brochure entitled “Precautions and Safe Practices for Handling Molecular Sieves in Process Units” or contact your UOP representative.

Shipping Information

13X-APG MOLSIV adsorbent is shipped in 55-gallon steel drums or quick load bags.

Typical Physical Properties

13X-APG sieve is available in sphere or extrudate form. The diameters for the spheres or “beads” are shown below. The diameters for the extrudates or “pellets” are also shown; the length is approximately twice the diameter.

<table>
<thead>
<tr>
<th></th>
<th>1/16&quot; Pellets</th>
<th>1/8&quot; Pellets</th>
<th>TRISIV™ Pellets</th>
<th>8x12 Beads</th>
<th>6x8 Beads</th>
<th>4x8 Beads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk density (lbs/ft³)</td>
<td>38</td>
<td>38</td>
<td>36</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Particle diameter (mm)</td>
<td>1.6</td>
<td>3.2</td>
<td>3.2</td>
<td>8</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Crush strength (lbs)</td>
<td>7</td>
<td>15</td>
<td>15</td>
<td>8</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Equilibrium CO₂ capacity (wt-%)</td>
<td>18.5</td>
<td>18.5</td>
<td>18.5</td>
<td>18.5</td>
<td>18.5</td>
<td>18.5</td>
</tr>
<tr>
<td>Equilibrium H₂O capacity (wt-%)</td>
<td>27</td>
<td>27</td>
<td>27</td>
<td>27</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Water content, as shipped (wt-%)</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

(1) Measured at 250 mm Hg and 25 °C
(2) Measured at 17.5 mm Hg and 25 °C

For More Information

For more information, contact your UOP representative or UOP’s Adsorbents business at:

Telephone: 1-440-734-0086
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