Grit and Powder Sizing - Description

Domestic abrasive manufacturers use sieves or screens to size abrasive grain. Both the sieve and the grain size must conform to the American National Standards Institute B74.12. Typical abrasive grain designations such as #8, #16, #36, #60, #120, #180, and #240 would conform to the same size standard regardless from which domestic manufacturer it was purchased. These sizes are referred to as macrogrits.

There is no standard process for sizing abrasive powders. Typically, abrasive powders are water classified, but some manufacturers may use an air classification technique. After a material has been graded to a specific size, there are several different methods that can be used to perform particle size analysis. Consequently, particle size may vary on a given size from one manufacturer to another.

Although sieve size designations such as #280, #320, #400, #500, #600...may be used to identify abrasive powders, they are theoretical screen size numbers because screens are not actually used to classify the material. In this case, as the screen size number gets higher, the size of the material is finer. Abrasive powders commonly refer to any size finer than #240 grit, and are called microgrits. Each mesh size has an equivalent micron size designation, i.e. 37, 29, 17, 13, 9, 5, 7, 3. As the micron size number gets lower, the size of the material is finer.

Grit and Powder Sizing - Table of Grit Sizes

<table>
<thead>
<tr>
<th>GRIT SIZING FOR</th>
<th>ALUMINUM OXIDES AND SILICON CARBIDES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grit / Sieve Size</td>
<td>Inches / mm (avg.)</td>
</tr>
<tr>
<td>12</td>
<td>0.063 / 1.600</td>
</tr>
<tr>
<td>16</td>
<td>0.043 / 1.092</td>
</tr>
<tr>
<td>20</td>
<td>0.037 / 0.939</td>
</tr>
<tr>
<td>24</td>
<td>0.027 / 0.685</td>
</tr>
<tr>
<td>30</td>
<td>0.022 / 0.558</td>
</tr>
<tr>
<td>36</td>
<td>0.019 / 0.482</td>
</tr>
<tr>
<td>46</td>
<td>0.014 / 0.355</td>
</tr>
<tr>
<td>54</td>
<td>0.012 / 0.304</td>
</tr>
<tr>
<td>60</td>
<td>0.010 / 0.254</td>
</tr>
<tr>
<td>70</td>
<td>0.008 / 0.203</td>
</tr>
<tr>
<td>80</td>
<td>0.0065 / 0.165</td>
</tr>
<tr>
<td>90</td>
<td>0.0057 / 0.144</td>
</tr>
<tr>
<td>100</td>
<td>0.0048 / 0.121</td>
</tr>
<tr>
<td>120</td>
<td>0.0040 / 0.101</td>
</tr>
<tr>
<td>150</td>
<td>0.0035 / 0.088</td>
</tr>
<tr>
<td>180</td>
<td>0.0030 / 0.076</td>
</tr>
<tr>
<td>220</td>
<td>0.0025 / 0.063</td>
</tr>
<tr>
<td>240</td>
<td>0.0020 / 0.050</td>
</tr>
</tbody>
</table>

Grit and Powder Sizing - Table of Powder Sizes

<table>
<thead>
<tr>
<th>SIZING FOR</th>
<th>ALUMINUM OXIDES AND SILICON CARBIDES</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN MICRONS (um) (Based on the FEPA standard)</td>
<td></td>
</tr>
<tr>
<td>Powder Size</td>
<td>Microns (Avg.)</td>
</tr>
<tr>
<td>280</td>
<td>37</td>
</tr>
<tr>
<td>320</td>
<td>29</td>
</tr>
<tr>
<td>360</td>
<td>23</td>
</tr>
<tr>
<td>400</td>
<td>17</td>
</tr>
<tr>
<td>500</td>
<td>13</td>
</tr>
<tr>
<td>600</td>
<td>9</td>
</tr>
<tr>
<td>800</td>
<td>7</td>
</tr>
<tr>
<td>1000</td>
<td>5</td>
</tr>
<tr>
<td>1200</td>
<td>3</td>
</tr>
</tbody>
</table>