Semitron® ESd 410C Material Specifications

Semitron® is a high performance material for use in the semiconductor industry.

### Physical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit(s)</th>
<th>Test</th>
<th>ESd 410C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>lb/in³, g/cm³</td>
<td>D792</td>
<td>0.051, 1.41</td>
</tr>
<tr>
<td>Water Absorption, 24 hrs.</td>
<td>%</td>
<td>D570</td>
<td>0.3</td>
</tr>
<tr>
<td>Water Absorption, Saturation</td>
<td>%</td>
<td>D570</td>
<td>-</td>
</tr>
</tbody>
</table>

### Mechanical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit(s)</th>
<th>Test</th>
<th>ESd 410C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength</td>
<td>psi</td>
<td>D638</td>
<td>9000</td>
</tr>
<tr>
<td>Tensile Modules</td>
<td>psi</td>
<td>D638</td>
<td>850,000</td>
</tr>
<tr>
<td>Tensile Elongation at Break</td>
<td>%</td>
<td>D638</td>
<td>2</td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>psi</td>
<td>D790</td>
<td>12,000</td>
</tr>
<tr>
<td>Flexural Modulus</td>
<td>psi</td>
<td>D790</td>
<td>850,000</td>
</tr>
<tr>
<td>Compressive Strength</td>
<td>psi</td>
<td>D695</td>
<td>19,500</td>
</tr>
<tr>
<td>Compressive Modulus</td>
<td>psi</td>
<td>D695</td>
<td>600,000</td>
</tr>
<tr>
<td>Hardness Rockwell</td>
<td>-</td>
<td>D785</td>
<td>M115 / R125</td>
</tr>
<tr>
<td>Izod Impact Notched</td>
<td>ft-lb/in</td>
<td>D256</td>
<td>0.8</td>
</tr>
</tbody>
</table>

### Thermal Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit(s)</th>
<th>Test</th>
<th>ESd 410C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient of Linear Thermal Expansion</td>
<td>X 10⁻⁵ in./in./°F</td>
<td>D696</td>
<td>1.8</td>
</tr>
<tr>
<td>Heat Deflection Temperature</td>
<td>@264 psi °F/°C</td>
<td>D648</td>
<td>410 / 210</td>
</tr>
<tr>
<td>Melting Temperature</td>
<td>°F/°C</td>
<td>D3418</td>
<td>n/a</td>
</tr>
<tr>
<td>Max. Operating Temperature</td>
<td>°F/°C</td>
<td>-</td>
<td>338 / 170</td>
</tr>
<tr>
<td>Thermal Conductivity</td>
<td>BTU·in²·hr·°F·x 10⁻⁴ cal/cm·sec·°C</td>
<td>C177</td>
<td>-</td>
</tr>
<tr>
<td>Flammability Rating</td>
<td>-</td>
<td>UL94</td>
<td>V - 0</td>
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</tbody>
</table>

### Electrical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Test</th>
<th>ESd 410C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dielectric Strength</td>
<td>D149</td>
<td>-</td>
</tr>
<tr>
<td>Dielectric Constant</td>
<td>D150</td>
<td>-</td>
</tr>
<tr>
<td>Surface Resistivity</td>
<td>EOS/ESD S11.11</td>
<td>10⁴ – 10⁶</td>
</tr>
<tr>
<td>Max Static Decay</td>
<td>Mil-B-81705C</td>
<td>-</td>
</tr>
</tbody>
</table>

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