Cercom® Heaters Ensure Consistent Heat Distribution & Durable, Reliable Performance

Semiconductor Equipment Components Specialists
Since the advent of the semiconductor industry, CoorsTek has served as a reliable and trusted advanced materials components partner. Our wide variety of ultra-pure ceramic materials ensure consistent yields and exceptionally long life – even in high-heat and caustic environments.

Materials Designed Specifically for High-Performance Heaters
CoorsTek Cercom aluminum nitride materials ensure superior performance for:
- Chemical Vapor Deposition (CVD)
- Plasma-Enhanced Chemical Vapor Deposition (PECVD)
- Atomic Layer Deposition (ALD)
- Halogen gas processes (chlorine, fluorine)

Multiple Configurations Available
- Plates
- Pedestals (plate hermetically bonded to shaft)
- Rings
- Custom applications

Various Heater Sizes Supported
- 150 mm
- 200 mm
- 300 mm
- 450 mm

Options and Specifications
- Operating temperature up to 750 °C
- Single or multiple heating zones
- Embedded RF antenna or ground plane available
- Temperature uniformity deviation <±0.5% (2 zone), <±1% (1 zone)
- Ramp rate 10-15 °C/minute
- Patented hot pressed, unibody technology

With in over 50 manufacturing locations across four continents, CoorsTek is the international partner of choice for high-performance semiconductor components. For more information, contact a CoorsTek semiconductor equipment specialist today at +1 800 821 6110.

<table>
<thead>
<tr>
<th>MATERIAL PROPERTY</th>
<th>UNITS</th>
<th>TEST METHOD</th>
<th>ALN S-1 DIRECT SINTERED HIGH RESISTANCE</th>
<th>ALN HP HOT PRESSED</th>
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<tbody>
<tr>
<td>Density</td>
<td>gm/cc</td>
<td>ASTM-D792</td>
<td>3.29</td>
<td>3.25</td>
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<tr>
<td>Grain Size, average</td>
<td>µm</td>
<td>ASTM-E112</td>
<td>4-6</td>
<td>2.5</td>
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<tr>
<td>Flexural Strength (4-Point MOR)</td>
<td>MPa</td>
<td>ASTM-C1161</td>
<td>375</td>
<td>420</td>
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<tr>
<td>Characteristic Strength</td>
<td>MPa</td>
<td>ASTM-C1161</td>
<td>400</td>
<td>440</td>
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<tr>
<td>Weibull Modulus</td>
<td>m</td>
<td>ASTM-C1161</td>
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<tr>
<td>Elastic Modulus</td>
<td>GPa</td>
<td>ASTM-E494-10</td>
<td>330</td>
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<tr>
<td>Poisson’s Ratio</td>
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<td>ASTM-E494-10</td>
<td>0.23</td>
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<td>Hardness</td>
<td>GPa (Kgf/ mm²)</td>
<td>ASTM-C1326</td>
<td>1100</td>
<td>1150</td>
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<td>Fracture Toughness</td>
<td>MPa m¹/²</td>
<td>Chevron Notch</td>
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<td>Thermal Expansion</td>
<td>IX 10⁻⁶ / °C</td>
<td>ASTM-C372</td>
<td>5.4</td>
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<td>Thermal Conductivity</td>
<td>W/(m² K)</td>
<td>ASTM-E1461</td>
<td>100</td>
<td>80</td>
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<td>Dielectric Constant, 1 MHz</td>
<td>@25 °C</td>
<td>ASTM-D150</td>
<td>9</td>
<td>8.5</td>
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<td>Loss Tangent, 1 MHz</td>
<td>@25 °C</td>
<td>ASTM-D150</td>
<td>0.0004</td>
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The chart is intended to illustrate typical properties. Property values vary with method of manufacture, size, and shape of part. Data contained herein is not to be construed as absolute and does not constitute a representation or warranty for which CoorsTek assumes legal responsibility. CoorsTek, Amazing Solutions, Cercom, and OpX are registered trademarks of CoorsTek, Inc.

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