### Engineered Solutions

Biomedical & Technical Ceramics

<table>
<thead>
<tr>
<th>Materials</th>
<th>Density g/cm³</th>
<th>Flexural Strength MPa</th>
<th>Hardness HV1</th>
<th>Grain Size µm</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃ 99.7%</td>
<td>3.9</td>
<td>310</td>
<td>1800</td>
<td>&lt;8</td>
<td>White</td>
</tr>
<tr>
<td>Al₂O₃ 99.9%</td>
<td>3.98</td>
<td>610</td>
<td>2100</td>
<td>&lt;1</td>
<td>White (translucent available)</td>
</tr>
<tr>
<td>Polycrystalline Ruby</td>
<td>3.9</td>
<td>520</td>
<td>2200</td>
<td>&lt;2</td>
<td>Red (translucent available)</td>
</tr>
<tr>
<td>Zirconia Toughened Alumina</td>
<td>4</td>
<td>550</td>
<td>2050</td>
<td>&lt;1</td>
<td>White</td>
</tr>
<tr>
<td>Zirconia Toughened Alumina</td>
<td>4.25</td>
<td>985</td>
<td>2000</td>
<td>&lt;0.9</td>
<td>White</td>
</tr>
<tr>
<td>Zirconia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zirconia 2ZrO₂.3Y</td>
<td>6.0</td>
<td>1350</td>
<td>1300</td>
<td>&lt;0.6</td>
<td>Ivory or Anthracite</td>
</tr>
<tr>
<td>Zirconia Alumina</td>
<td>6.0</td>
<td>1400</td>
<td>1300</td>
<td>&lt;0.6</td>
<td>White</td>
</tr>
<tr>
<td>Zirconia Alumina</td>
<td>5.5</td>
<td>2000</td>
<td>1500</td>
<td>&lt;0.5</td>
<td>White</td>
</tr>
</tbody>
</table>
**WEAR RESISTANT**
**PRESSING COMPLEX DESIGNS**
**NET SHAPE TECHNOLOGY**
**BIOCOMPATIBLE MATERIALS**
**INJECTION MOLDING**
**CHEMICAL INERTNESS**

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**BENEFITS OF CERAMIC APPLICATIONS**

- Accommodates extremely complex geometric components
- Provides practical economic solutions to increasingly stringent material and product design requirements
- Excellent batch to batch repeatability with exceptional process capabilities
- High surface finish quality without the need for additional finishing processes
- Excellent mechanical, electrical and thermal properties
- Highly resistant to heat, pressure, corrosion and wear
- Superior material performance: high hardness, mechanical strength and dimensional stability

**DESIGN ENGINEERING SUPPORT**

- Optimizing designs for manufacturability
- Additive manufacturing capabilities (3D Printing) for prototyping
- Evaluation feasibility packages
- Prototypes, validation and optimization
- Materials selection
- SolidWorks 3D modeling software

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ISO 13485  ISO 9001  REACH  ROHS