ATZ 80%3Y-TZP-20%Al₂O₃

**CHEMICAL COMPOSITION**

<table>
<thead>
<tr>
<th>Component</th>
<th>3Y-TZP</th>
<th>80%wt</th>
<th>20%wt</th>
<th>* by difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃</td>
<td></td>
<td>&lt;0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SiO₂</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fe₂O₃</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Al₂O₃</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PHYSICAL PROPERTIES**

- Mean grain size: 0.5±0.1 µm
- Sintered density: 5.4 g/cm³
- Bending strength at 20°C: 1000 MPa
- Hardness Hₙ₀,₅: 1400 Hv

**THERMAL PROPERTIES**

- Thermal conductivity at 20°C: 10 W.m⁻¹.k⁻¹

**ELECTRICAL PROPERTIES**

- Dielectric constant at 25°C-1MHz
- tan δ
- DC Volume resistivity at 25°C
- Dielectric strength at 3mm

**MICROSTRUCTURE**

![Microstructure Image]

**KEY FEATURES**

- High mechanical strength and hardness

**TYPICAL APPLICATIONS**

- Hip joint implants, surgical instruments, thermal insulators in resectoscopy, pump components, wear resistant components, valve seals, bushings, cutting tool inserts, welding jigs and fixtures, dental implants, orthopaedic prosthetics, cutting tools, thread guides, bearings, nozzles, filling pumps, ball valves.