Alumina 99.9% (Hipped)

**CHEMICAL COMPOSITION**  
<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al₂O₃</td>
<td>99.9%wt</td>
</tr>
<tr>
<td>MgO</td>
<td>0.05%wt</td>
</tr>
<tr>
<td>Na₂O</td>
<td>&lt;25 ppm</td>
</tr>
<tr>
<td>SiO₂</td>
<td>&lt;25 ppm</td>
</tr>
<tr>
<td>Fe₂O₃</td>
<td>&lt;25 ppm</td>
</tr>
<tr>
<td>CaO</td>
<td>&lt;25 ppm</td>
</tr>
</tbody>
</table>

* by difference

**PHYSICAL PROPERTIES**  
- Mean grain size: 3 ± 1 µm
- Sintered density: 3.97 g/cm³
- Bending strength at 20°C: 550 MPa
- Hardness Hᵥ₀.₅: 1900 Hv

**THERMAL PROPERTIES**  
- Thermal conductivity at 20°C: 30 W.m⁻¹.k⁻¹

**ELECTRICAL PROPERTIES**  
- Dielectric constant at 25°C-1MHz: 9 (1MHz)
- tan δ: 5.10⁻³ (9GHz)
- DC Volume resistivity at 25°C: 5.10¹⁴ Ω.cm
- Dielectric strength at 3mm: 19 kV/mm⁻¹

**MICROSTRUCTURE**

**KEY FEATURES**  
Superior mechanical strength and hardness  
Biocompatible  
Smooth surfaces

**TYPICAL APPLICATIONS**  
High purity alumina is usually well suited for applications such as pistons and cylinders for precision dosing devices, feedthrough for medical devices, precision rotor valves components, pump seals & plungers, electrical insulators & inductors, wear nozzles, electrical connector housings, injector tubes & gas nozzles, wear resistant components.  
The hot isostatic pressing or HIP process increases the general mechanical resistance through diminishing the remaining porosity.