**STARCERAM® Z-Smile**

**Chemical Formula**  
ZrO₂ / Y₂O₃ / Al₂O₃

**Chemical Name**  
Yttrium stabilized tetragonal zirconium dioxid

**Description of Product**  
Presintered Blanks made of zirconium dioxid for dental use  
Typ II, Class 5 according to EN ISO 6872

**Colour**  
White

**Translucence**  
High translucent

**Chemical Characteristics**

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZrO₂ / HfO₂ / Y₂O₃</td>
<td>&gt; 99.0 wt%</td>
</tr>
<tr>
<td>Y₂O₃</td>
<td>9.30 ± 0.30 wt%</td>
</tr>
<tr>
<td>HfO₂</td>
<td>&lt; 5.0 wt%</td>
</tr>
<tr>
<td>Al₂O₃</td>
<td>&lt; 0.1 wt%</td>
</tr>
<tr>
<td>Fe₂O₃</td>
<td>&lt; 0.01 wt%</td>
</tr>
</tbody>
</table>

- **Density**: > 6.0 g/cm³
- **4-Point Bending Strength**: 600 ± 100 MPa
- **Young’s modulus**: 210 GPa
- **Thermal expansion**: 10.4 10⁻⁶ 1/K
- **Open porosity**: none

**Radio activity**

- **Activity ²³⁸U**: < 1.0 Bq/g  
  EN ISO 6872

**Biocompatibility and chemical solubility**

- **Cytotoxicity ISO**: inoffensive  
  EN ISO 10993 / EN ISO 9363
- **Chemical analysis**: < 2000 µg/cm²  
  EN ISO 6872

The data indicated relates to the test specimens from which it was obtained and is not unconditionally applicable to other forms of the same material. The data must, therefore, be regarded as indicative only.
Product Description and Applications
Presintered blanks from tetragonal stabilized zirconium oxide are a semi-finished ceramic product with special properties for medical applications. The blanks offer an excellent ability for machining with CADCAM milling systems. They are suitable for the fabrication of crowns and bridges with up to 3 units in monolithic version or as framework for coating with ceramic. The high translucency and the good biocompatibility are outstanding characteristics and support the suitability for medical applications.

STARCERAM® Z Material
Example of presintered products

Packaging
STARCERAM® Z-Smile products are individually packed, depending on size packaging according to transport regulations.

Storage and Handling
Handle with care! Ceramic products may break if not treated properly. Storage and handling are subjects to the rules and regulations in the country of use.

Hazards identification in Advertising (REGULATION (EC) No 1272/2008 Article 48)
none.

Documentation
An inspection document in accordance with EN 10204 is supplied with every shipment.