

Number Issue PD-9006 1-15.01.2008

# StarCeram® Z-AI-Med HD

Chemical Formula  $ZrO_2 / Y_2O_3 / Al_2O_3$ 

Chemical Name Yttria-stabilized tetragonal Zirconia

Colour: White opaque

**Description of Product** Pre-sintered blanks from Zirconium Oxide for dental applications

#### **Chemical Characteristics**

$ZrO_2$ / $HfO_2$ / $Y_2O_3$	> 99.0	wt%
$Y_2O_3$	5.15 ± 0.2	2 wt%
HfO <sub>2</sub>	< 5	wt%
$Al_2O_3$	$0.25 \pm 0.1$	0 wt%
Fe <sub>2</sub> O <sub>3</sub>	< 0.1	wt%
Na₂O	< 0.04	wt%

## Physical Properties (after final sintering)

Density > 6.05 g/cm³ Flexural strength 1.200 $\pm$  200 MPa

Weibull modulus > 8

Young's modulus 210 GPa Thermal expansion 11 10<sup>-6</sup> 1/K

Open porosity none

**Radio Activity** 

Activity <sup>238</sup>U, <sup>226</sup>Ra, <sup>232</sup>Th < 0.2 Bq/g according ISO 13356.2

## **Biocompatibility and Chemical Solubility**

Cytotoxicity ISO inoffensive DIN EN ISO 10993 / DIN EN ISO 9363 Chemical analysis under detection limit DIN EN ISO 10903 / DIN EN ISO 6872

 $(< 1 \mu g/cm^2)$ 

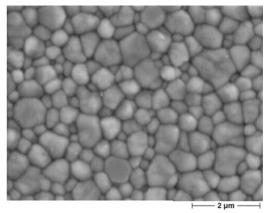


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## **Product Description and Applications**

Pre-sintered blanks from tetragonal stabilized Zirkonium Oxide StarCeram® Z-Al-Med HD are a semi-finished ceramic product with special properties for medical applications, especially for machining of crowns and bridges with CAD/CAM milling systems. The high fracture toughness, high strength and the good biocompatibility are leading to outstanding properties for medical applications.

StarCeram® Z-Al-Med HD Zirkonium Oxide photomicrograph scale see photograph



StarCeram® Z-Al-Med HD Zirkonium Oxide Examples of presintered products



The properties of StarCeram® Z-Al-Med HD meet the requirements of DIN EN ISO 6872.



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Packaging StarCeram® Z-Al-Med HD 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. Store cool

and dry. Storage and handling are subject to the rules and regulations in the

country of use.

Hazards identification in Advertising (Directive 67/548/EEC Article 26 and Directive 1999/45/EC Article 13)

none.

**Documentation** An inspection document in accordance with EN 10204 is supplied when

requested.

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