

STARCERAM® Z MATERIALS

2023.01.24

SPECIFICATIONS

- ▶ Chemical formula: $ZrO_2 / Y_2O_3 / Al_2O_3$
- ▶ Chemical name: Yttrium stabilized tetragonal zirconium dioxide
- ▶ Description of product: Presintered blanks made of zirconium dioxide for dental use. Typ II, Class 5 acc. to EN ISO 6872

	StarCeram® Z-Med	StarCeram® Z-Al-Med HD	StarCeram® Z-Al-Med HD Colour	StarCeram® Z-Nature	StarCeram® Z-Nature Ultra
Colours	white	white	coloured	white, coloured	white, coloured
Translucence	translucent	opaque	opaque	translucent	translucent



CHEMICAL CHARACTERISTICS (TYP.)

		Z-Med	Z-Al-Med HD	Z-Al-Med HD Colour	Z-Nature	Z-Nature Ultra
$ZrO_2 / HfO_2 / Y_2O_3$	[wt%]	> 99.0	> 99.0	> 99.0	> 99.0	> 99.0
Y_2O_3	[wt%]	5.15 ± 0.20	5.15 ± 0.20	5.15 ± 0.20	5.35 ± 0.20	6.90 ± 0.20
HfO_2	[wt%]	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Er_2O_2	[wt%]	none	none	none	< 1.0	< 1.0
Al_2O_3	[wt%]	< 0.1	< 0.3	< 0.3	< 0.1	< 0.1
Fe_2O_3	[wt%]	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Na_2O	[wt%]	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04

MECHANICAL & PHYSICAL CHARACTERISTICS (TYP.)

		Z-Med	Z-Al-Med HD	Z-Al-Med HD Colour	Z-Nature	Z-Nature Ultra
Density	[g/cm ³]	> 6.05	> 6.05	> 6.00	> 6.00	> 6.00
Flexural strength	[MPa]	1,000 ± 200	1,000 ± 200	1,000 ± 200	1,000 ± 200	1,000 ± 200
Young's modulus	[Gpa]	210	210	210	210	210
Thermal expansion	[10 ⁻⁶ 1/K]	10.7	10.7	10.7	10.7	10.7
Open porosity		none	none	none	none	none
Radio activity						
Activity ²³⁸ U, ²²⁶ Ra, ²³² Th.	[Bq/g]	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Biocompatibility and chemical solubility						
Cytotoxicity ISO ¹		Inoffensive				
Chemical analysis ²	[µg/cm ²]	< 100				

¹ (DIN EN ISO 10993 / DIN EN ISO 9363)

² (DIN EN ISO 6872)

PACKAGING

StarCeram® Z Material products are individually packed, depending on size.

Packaging acc. to transport regulations.

STORAGE & HANDLING

Handle with care! Ceramic products may break if not treated properly.

Storage and handling are subject 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.

The information contained herein, and in particular the recommendations relating to the application and end-use of our products, are given in good faith based on our current knowledge and experience. The information do not constitute a guarantee with respect to properties of the products. Since we have no control over the application modalities, no guarantee is granted with respect to merchantability or fitness for a particular purpose. It is your sole responsibility to validate the suitability and completeness for your own use. We therefore recommend to always perform a test according to specific circumstances. Any liability in respect of the information in this data sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in case of death or personal injury, intent or gross negligence and under any applicable mandatory product liability law. Technical data are subject to change without notice. The newest version of the technical data sheet replaces all preceding versions. The trademarks, trade names, logos and other designations of origin contained in this data sheet are registered and unregistered intellectual property rights of KYOCERA Fineceramics Europe GmbH. It is forbidden to copy or use information from this data sheet in whole or in part, especially in dealings with third parties.