

KZR-CAD **NANOZR**

Superior in fracture toughness



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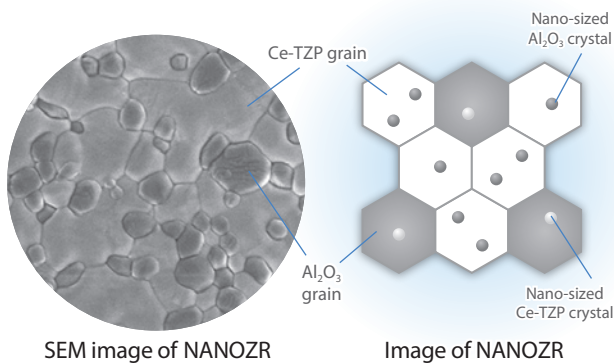


Unique material properties for maximum safety

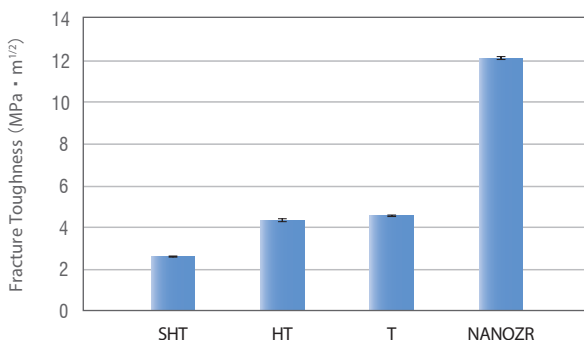
NANOZR is a complex structure zirconium oxide/aluminium oxide reinforced with nanocrystals, the physical properties of which are unique. It is much more resilient than comparable dental ceramics. The very high fracture toughness offers the utmost degree of safety. Furthermore, NANOZR is bio-compatible, resistant to aging. It is ideally suitable for crowns and bridges application as well as for telescope structures and superstructures.

The Microstructure

By integrating Ce-TZP and Al_2O_3 crystals on a scale of a few nanometers (one billionth of a meter) in grains of the other component, the fracture toughness is increased more than twice as much as that of yttria type zirconia.



Fracture toughness

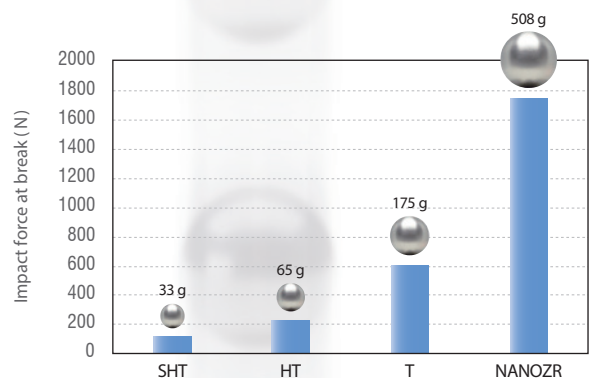


Fracture Toughness of Each Kind of Zirconia
(ISO 15732: 2003 (SEPB Method) Tested by JAPAN FINE CERAMICS CENTER)

Impact resistance

Steel balls, weighing 7 grams to 508 grams, were dropped from a height of 60 centimeters onto 1 mm thick discs made of each kind of Zirconia (SHT, HT, T, and NANOZR) which were centered on a steel plate.

The impact force at breakage of NANOZR was 1740N, and the impact resistance was approximately 2 to 15 times or more that of yttria type zirconia.



Impact resistance of each kind of zirconia





Lineup

NANOZR	Color	Diameter(Φ) 98.3mm									
	White	Thickness (t)									
		10mm	12mm	14mm	16mm	18mm	20mm	22mm	25mm	30mm	35mm
		●	●	●	●	●	●	●	●	●	●

Sintering Schedule

<KZR-CAD NANOZR Sintering Program>

A Sintering Program In the case of 1 – 7 unit bridge, sintered by inFire HTC(Sirona)

	Heat Rate	Heat Rate	Hold	Cooling
Temperature (°C)	850	1,450	1,450	1,000
Condition	3 (°C/min)	10 (°C/min)	120 min	8 (°C/min)

B Sintering Program In the case of 8 unit bridge or more or a whole disc, sintered by inFire HTC(Sirona)

	Heat Rate	Heat Rate	Hold	Cooling
Temperature (°C)	850	1,450	1,450	300(in the furnace)
Condition	3 (°C/min)	3 (°C/min)	120 min	3 (°C/min)

【Precaution】

- * Sinter with one tray.
- * Do not use Sintering Pin in any cases.
- * In the case of 1-7 unit bridge, remove from support pins and follow A sintering program on beads.
- * However, in the case of sintering a whole disc without removing from support pins, follow B sintering program.
- * Or 1-7 unit bridge removed from support pins with a disc can be sintered by B sintering program.
- * In the case of 8 unit bridge or longer span or denture floor should be sintered with a whole disc without removing.
- * Do not touch a tray until the temperature indicator shows under 100 °C.

Manufacturer

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