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## Product Data Sheet

### Yttria stabilized zirconia GY3Z-R60 3mol% Y<sub>2</sub>O<sub>3</sub> stabilized ZrO<sub>2</sub> "Ready to Press" granules

#### Chemical composition (wt%)

Y <sub>2</sub> O <sub>3</sub> <sup>a</sup>	Al <sub>2</sub> O <sub>3</sub> <sup>a</sup>	SiO <sub>2</sub> <sup>b</sup>	Na <sub>2</sub> O <sup>b</sup>	TiO <sub>2</sub> <sup>b</sup>	Fe <sub>2</sub> O <sub>3</sub> <sup>b</sup>	L.O.I. <sup>c</sup>
5,4	0,25	< 0,02	< 0,02	< 0,005	< 0,005	2,8 ± 0,3

<sup>a</sup>: XRF method; <sup>b</sup>: ICP method; <sup>c</sup>: Loss On Ignition 20 → 100°C

#### Physical properties

Tetragonal phase <sup>a</sup>	> 99	%
Specific surface area BET	7 ± 1	m <sup>2</sup> /g
Granule median diameter D <sub>50</sub>	60	µm

<sup>a</sup>: after sintering at 1450°C for 2 hours

#### Ceramic properties<sup>a</sup>

Green density	3,0	g/cm <sup>3</sup>
Sintered density	≥ 6,05	g/cm <sup>3</sup>
Strength: modulus of rupture <sup>b</sup>	1000	MPa
Hardness <sup>c</sup> : HV <sub>0,3/15</sub>	1250	HV
Fracture toughness <sup>c</sup> : K <sub>IC</sub>	5,5	MPa.m <sup>1/2</sup>

<sup>a</sup>: uniaxial pressing at 100MPa / sintering 1450°C - 2hrs

<sup>b</sup>: 4-point bending strength (4,0 mm x 3,0 mm x 45 mm)

<sup>c</sup>: micro-indentation

#### Main applications

- advanced technical ceramics
- dental ceramic standard grades



#### Benefits

- Excellent densification thanks to fine and homogeneous zirconia particles
- Advanced engineered binder system for easy pressing (uniaxial & isostatic)
- GY3R-R60 allows the manufacturing of ceramic parts with outstanding mechanical performance

All of the above data represent typical values which may vary for each shipment. Final users must practice their own tests to determine if product fits into requirements of the aim it is going to be used for.