

## Technical Data of Zirconia Ceramics

### A-Zr Ceramics

Main Parameters	Unit	Indices
Ingredients	Y-ZrO <sub>2</sub>	>90%
Density	g/cm <sup>3</sup>	5.65
Hardness	HRA	>90
Bending strength	Mpa	1200
Elastic Modulus	GPa	180
Heat Conduct Coefficient	W/m.k	3
Thermal Expansion coefficient	10×10 <sup>-6</sup> /°C(20to400)	10
Rupture Ductility	MPam.1/2	8
Main Properties: <ul style="list-style-type: none"> <li>● Impact resistant, high strength</li> <li>● wear resistant, corrosion resistant</li> <li>● high thermal stability</li> <li>● fatigue resistant</li> <li>● optimal quality price ratio</li> <li>● Suitable for applications in valves, moulds, shafts, sleeve shafts, franks and disks, plates, grinding media, and various of ceramic parts and components.</li> </ul>		

### Y-Zr Ceramics

Main Parameters	Unit	Indices
Ingredients	ZrO <sub>2</sub> 94.5% Y <sub>2</sub> O <sub>3</sub> 5.5%	
Density	g/cm <sup>3</sup>	>6.0
Hardness	HRA	88
Bending strength	Mpa	1100
Elastic Modulus	GPa	200
Heat Conduct Coefficient	W/m.k	3
Thermal Expansion coefficient	10×10 <sup>-6</sup> / °C(20 to 400)	9.6
Rupture Ductility	MPam.1/2	8
Main Properties: <ul style="list-style-type: none"> <li>● High strength, high</li> <li>● wear resistance , self-lubricating</li> <li>● corrosion resistance</li> <li>● Suitable for applications in valve cores, moulds, cutters, bearings, shafts, sealing rings, plates, grinding media, etc.</li> </ul>		

\*NOTE: The information shown on the table is for reference. RESISTEK can change it without prior notice.

## C-Zr Ceramics

Main Parameters	Unit	Indices
Ingredients	Ce+ZrO <sub>2</sub>	>99%
Density	g/cm <sup>3</sup>	>6.10
Hardness	HRA	88
Bending strength	Mpa	800
Elastic Modulus	GPa	210
Heat Conduct Coefficient	W/m.k	3
Thermal Expansion coefficient	10×10 <sup>-6</sup> / °C (20 to 400)	10
Rupture Ductility	MPam.1/2	7
<p>Main Properties:</p> <ul style="list-style-type: none"> <li>● Impact resistant</li> <li>● highly wear resistant</li> <li>● good thermal stability</li> <li>● fatigue resistant</li> <li>● suitable for applications in valves, moulds, sealing rings, and other types of ceramic components with complex shape and geometry.</li> </ul>		

## ZTA Ceramics

Main Parameters	Unit	Indices
Ingredients	Y-ZrO <sub>2</sub> 30% Al <sub>2</sub> O <sub>3</sub> 70%	
Density	g/cm <sup>3</sup>	4.2
Hardness	HRA	>89
Bending strength	Mpa	400
Elastic Modulus	GPa	180
Heat Conduct Coefficient	W/m.k	3
Thermal Expansion coefficient	10×10 <sup>-6</sup> / °C(20 to 400)	9
Rupture Ductility	MPam.1/2	5
<p>Main Properties:</p> <ul style="list-style-type: none"> <li>● Certain level of impact strength</li> <li>● wear resistance, corrosion resistance</li> <li>● thermal s-tability</li> <li>● Cost effective for manufacturing</li> <li>● Suitable for applications in valves, moulds, plates, and other types of ceramic components with complex shape and geometry.</li> </ul>		

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