

Zirconia Ceramic Parts Datasheet

High toughness zirconia parts for wear surfaces that run against metal, fluid or fibre without picking up magnetism or corroding.

Material: Zirconia (ZrO2)

Performance advantages: high strength, high hardness, impact resistance, wear resistance, corrosion resistance, smooth surface, low thermal conductivity, non-magnetic

Industry applications: machinery, optical fiber, cutting tools, medical treatment, food, petroleum

Typical parts: plungers, ceramic shafts, optical fiber sleeves, ferrules, grinding media, ceramic cutters, ceramic guide rails, mechanical plunger dispensing valves, mobile phone cases, watch cases, hairdressing scissors blades

Zirconia Ceramic Plungers

Zirconium oxide ceramics are white, yellow or gray when containing impurities, and generally contain HfO2, which is not easily separated. In terms of structural ceramics, zirconia ceramics are widely used because of their high toughness, high flexural strength and high wear resistance, excellent thermal insulation properties, and a thermal expansion coefficient close to that of steel.

Material	Zirconia
Color	White, black
Shape	Custom
Size	Custom
Density	6.0 g/cm3
Flexural Strength	800 Mpa
MONS' Hardness	8.2

Zirconia Ceramic Structural Parts

Structural zirconia parts made to your drawing. Zirconia combines high toughness, high flexural strength and high wear resistance with a thermal expansion coefficient close to that of steel, which is why it replaces metal in wear positions that also have to stay non-magnetic and corrosion free.

Material	Zirconia
Color	White, black
Shape	Custom
Size	Custom
Density	6.0 g/cm3
Flexural Strength	800 Mpa
MONS' Hardness	8.2

Zirconia Ceramic Rod

Zirconia ceramic rod ground to size. Zirconia is high strength, high hardness, impact resistant, wear resistant, corrosion resistant, smooth surfaced, low in thermal conductivity and non-magnetic, which is why it replaces steel shafting and guide rails in wet, abrasive and non-magnetic positions.

Material	Zirconia
Features	High hardness, high strength, high temperature
Size	Customized
Color	Customized
MOQ	Low MOQ

Zirconia Ceramic Properties

Physical Properties		
Colour		white
Density	g/cm3	6.0
Zirconia Content	%	94.40%
Gas permeability		0
Water Absorption	%	0%
Crystal Size	um	0.5
Mechanical Properties		
Rockwell Hardness (45N)	R45N	78
Vickers Hardness (Load 500g)	GPa(Kg/mm2)	11.5 (1175)
Flexural Strength (20C)	MPa	800
Compressive Strength (20C)	MPa	2000
Modulus of Elasticity (20C)	GPa	> 200
Fracture Toughness (20C)	MPam ^{1/2}	9.0
Thermal Properties		
Thermal Conductivity (20C-400C)	W/(m.K)	2.5
Thermal Expansion Coefficient	10-6/C	9.6
Thermal Shock Resistance	dT C	250

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