

Zirconia Ceramic Zirconium Dioxide Ceramic

Product Description

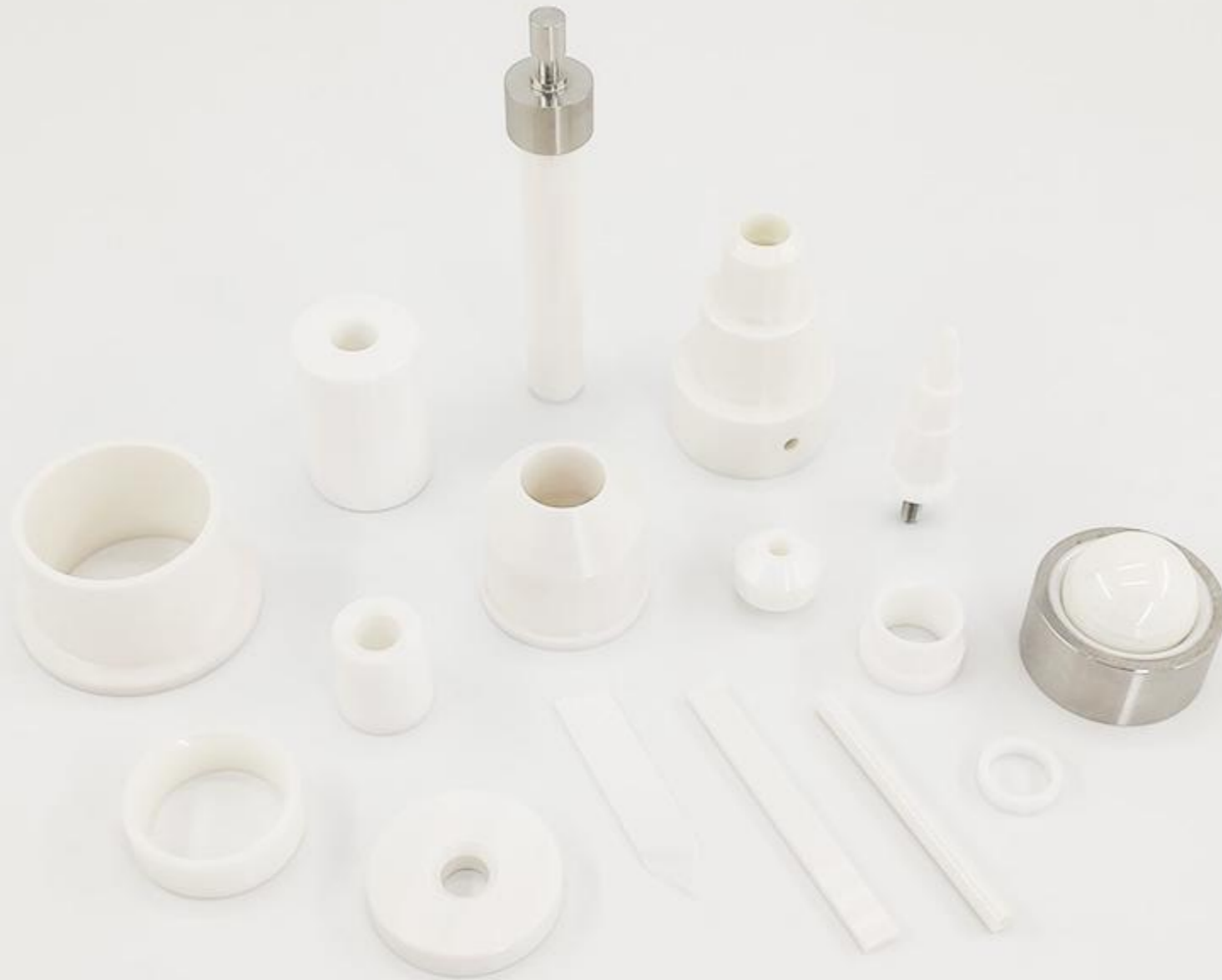
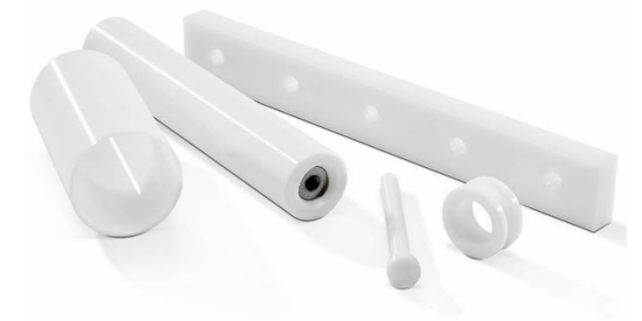
Zirconia (ZrO_2) material is known as one of the hardest ceramics. It also has properties of high thermal expansion, low thermal conductivity, superior resistance to abrasion/wear and corrosion, as well as high temperature resistance. Due to its excellent fracture toughness, zirconium oxide ceramic performs not that brittle as aluminum oxide ceramic. Its outstanding performance in resisting crack propagation along with high thermal expansion make zirconia work excellent in joining ceramic and metals, prominently in applications like ceramic plunger and ceramic piston pump.

Product Advantages

- (1) Superior strength and toughness when compared to high-purity alumina;
- (2) High wear and corrosion resistance;
- (3) High mechanical strength but electrical insulated;
- (4) Fine surface finishes;
- (5) Thermal expansion similar to that of metal;

Advanced Finishing Service

- Fine polishing $\leq Ra0.05$
- Laser marking
- Metal joint ceramic brazing
- Threading
- Honing, drilling
- Mechanical assembly



Material Properties

ITEM	UNIT	ZIRCONIA YSZ95
Main Content	-	ZrO ₂ >94.5%
Colour	-	White
Density	Gpa	5.95
Vickers Hardness	g/cm ³	12
Flexural Strength	Mpa	800
Compressive Strength	Mpa	2,500
Electrical Resistivity	Ω*cm	>10 ¹⁰
Dielectric Strength	Kv/mm	9
Dielectric Constant	1MHz	28
Max. Working Temperature	°C	800
Thermal Conductivity	25°C,w/(m·k)	2.2
Resistance to Thermal Shock	ΔT(°C)	260

Typical Products



Zirconia Plunger



Ceramic Dosing Pump



Ceramic Valve Ball & Seat



Zirconia Plate



Zirconia Tube



Zirconia Rod



Zirconia Sleeve



Ceramic Welding Pin



Ceramic Blade

Main Application

Zirconia ceramic is a remarkably versatile material that plays a crucial role in a wide range of industries, from medical instruments, cutting tools, ball bearings, electronic and sensors, grinding media, to refractory industry, due to its exceptional combination of properties.

