

ZIRCONIA POWDER

Zirconia Powder, also referred to as Zirconium Oxide, is a highly versatile product. It is a chemically inert material, resistant to high temperatures, thermal shock, corrosion, impact, and wear. Zirconia powders are an ideal replacement for cerium powders, as they overcome the economic and availability issues of cerium while still achieving the high performance polishing results your processes require.

Our high purity Zirconia range across various grades of softness, cutting/buffing action, and particle size distribution. If you are unable to find material suitable to your particular needs, custom sizing is available.



TYPICAL APPLICATIONS

Polishing	Zirconium Metal Production
Grinding	Electronics
Lapping	Alloying Agent
Refractories	Opacifiers
High Temperature Filler	Ceramic Color
High Temperature Insulation	Catalysts
Sensors	

TYPICAL PROPERTIES

Abrasive
High Hardness
High Strength
High Density
Wear Resistance
High Thermal Conductivity



ZIRCONIA POWDER TECHNICAL DATA

PROPERTIES	UNITS	TEST	VALUE
Physical			
Chemical Formula	-	-	ZrO ₂
Density, ρ	g/cm ³	ASTM C20	6.04
Color	-	-	white
Crystal Structure	-	-	tetragonal
Water Absorption	% @R.T.	ASTM C373	0.0
Hardness	Mohs	-	6.5
Hardness	knoop (kg/mm ²)	Knoop 100g	1600
Mechanical			
Compressive Strength	MPa @ R.T.	ASTM C773	2500
Tensile Strength	MPa @ R.T.	ACMA Test #4	248
Modulus of Elasticity (Young's Modulus)	GPa	ASTM C848	207
Flexural Strength (MOR)	MPa @ R.T.	ASTM F417	900
Poisson's Ratio, ν		ASTM C818	0.32
Fracture Toughness, K _{IC}	MPa x m ^{1/2}	Notched Beam Test	13.0
Thermal			
Max. Use Temperature (* denotes inert atm.)	°C	No load cond.	500
Thermal Shock Resistance	ΔT (°C)	Quenching	280-360
Thermal Conductivity	W/m-K @ R.T.	ASTM C408	2.7
Coefficient of Linear Thermal Expansion, α _l	μm/m-°C (~-25°C through ±1000°C)	ASTM C372	11.0
Specific Heat, c _p	cal/g-°C @ R.T.	ASTM C351	0.10
Electrical			
Dielectric Constant	1MHz @ R.T.	ASTM D150	26@100kHz
Dielectric Strength	kV/mm	ASTM D116	9.0
Electrical Resistivity	Ωcm @ R.T.	ASTM D1829	>10 ⁴