

996Alumina

Because of its high mechanical strength, hardness, high-frequency dielectric loss, high insulation resistance, resistance to chemical corrosion good corrosion resistance and thermal conductivity and other excellent comprehensive technical performance, and a wide source of raw materials, relatively cheap, and processing system manufacturing technology is more mature and other advantages, alumina ceramic has been widely used in electronics, electrical, mechanical, chemical, textile organizations, automobile, metallurgical and aerospace industries, to become the world's largest amount of oxide ceramic materials.

氧化铝含量	密度 Density (g/cm ³)	开孔率 Open porosity	硬度 Vickers hardness (GPa)(20°C)	抗弯强度 Flexural strength (MPa)(20°C)	断裂韧性 Fracture toughness (Mpa·m ^{3/2})	弹性模量 Modulus of elasticity (GPa)	热导率 Heat conductor (W/m·K)(20°C)	介电常数 Dielectric Constant @ 1 KHz	介电损耗 Loss Tangent @ 1 KHz	热膨胀系数 (20-800°C) Coefficient of thermal expansion (x10 ⁻⁶ /°C)	烧结温度 Sinter temperature (°C)	最大使用温度 Max Temperature (°C)
99.60%	3.8-3.9	0	15-16	600-610	200-219	370	27-30	10.2	0.0001~0.0002	7-8	1650±10	1200

Zirconia

Zirconia materials with high hardness, high strength, high toughness, high wear resistance and chemical resistance and so on. Excellent physical and chemical properties, zirconia has been in ceramics, refractory materials, machinery, electronics, optics, aerospace, Biological, chemical, and so widely applied in various fields.

Material properties 材料特性	Apparent density 表面密度 (g/cm ³)	Open porosity 开孔率	Vickers hardness 硬度 (GPa)(20°C)	Bending strength 弯曲强度 (MPa)(20°C)	Fracture toughness 断裂韧性 (Mpa·m ^{3/2})	Modulus of elasticity 弹性模量 (GPa)	Heat conductor 热导体 (W/m·K)(20°C)	Heat lash 热冲击 (°C)ΔT	Coefficient of thermal expansion 热膨胀系数 (x10 ⁻⁶ /°C)	Sinter temperature 烧结温度 (°C)	Max temperature 最高温度 (°C)
3Y-ZrO ₂	5.9-6.0	0	12-13	1200-1500	8-9	250-300	2-3	200	9.5-10	1600±20	180

AlN

AlN thermal conductivity, thermal expansion coefficient, is a good thermal shock material. Anti-erosion ability of molten metal is cast iron, aluminum or aluminum alloy ideal crucible material. AlN is an electrical insulator, good dielectric properties, can be used as electrical components.

Bulk Density 体积密度	Water absorption 吸水率 (%)	Thermal conductivity 热导率 [20°C](W/m·k)	Linear expansion coefficient 线膨胀系数 [RT-400°C] (10e-6/°C)	Bending strength 抗弯强度	Volume resistivity 体积电阻率	Dielectric Constant 介电常数 [1MHz]	Loss Tangent 介质损耗 [1MHz]	Dielectric strength 抗电强度 (KV/mm)
3.29g/cm ³	0	≥170	4.41	>330(MPa)	10e+14(Ω·cm)	9	4×10e-4	≥15.00

Silicon nitride

Silicon nitride is an important structural ceramic material. It is a super-hard material itself has lubricity and wear resistance, corrosion resistance, high temperature oxidation. thermal shock resistance and it can also, in the air heated to above 1000 °C, the rapid heating and then cooling rapidly, it will not shatter. It is because of silicon nitride ceramics have such excellent characteristics, often using it to manufacture bearings, gas turbine blades, mechanical seals, permanent mold and other mechanical components.

Bulk Density 体积密度 (g/cm ³)	Porosity 显气孔率 (%)	Flexural strength 抗弯强度 (MPa)	Tensile strength 抗拉强度 (MPa)	Compressive strength 抗压强度 (MPa)	Hardness 硬度 (GPa)	Modulus of elasticity 弹性模量 (GPa)	Fracture toughness 断裂韧性 (Mpa·√m)	Wei Boer coefficient 韦伯尔系数	Coefficient of thermal expansion 热膨胀系数 (x10 ⁻⁶ /°C)
3.2	0.01	828	400	>3500	91-92	300	5	15	3.2 (0-1000 °C)