

Non Oxide Ceramics

The Properties:

Grade	Units	Silicon Nitride Technide S10	Silicon Nitride Technide S14	Silicon Carbide Techcide C18	Macor	Shapal - M
Density	g/cm ³	3.23	3.21	3.12	2.52	2.9

Mechanical Properties:

Flexural Strength 20°C	MPa	940	755	410	94	300
800°C	MPa	475	450	410		
Compressive Strength	MPa	3000	3000	2000	345	1200
Modulus of Elasticity	GPa	290	290	450	66.9	190
Poissons Ratio		0.25	0.25	0.17	0.29	0.31
Hardness	HV _{0.3}	1550	1550	2800	230	390
Fracture Toughness (K _{IC})	MPa ^{1/2}	8.0	8.0	4.0	1.53	

Thermal Properties:

Max. Use Temp.	°C	1150	1150	1400	800	1000
Thermal Expansion Coeff.	x 10 ⁻⁶ /°C	3.1	3.1	3	9.3	4.4
Thermal Conductivity	W/mK	25	25	100	1.46	90
Thermal Shock Resistance	°C	600	600	380		400
Specific Heat Capacity	J/kgK	800	800	1000	790	480

Electrical Properties:

Resistivity 25°C	Ohm.cm	10 ¹⁰	10 ¹⁰	100	10 ¹⁴	10 ¹²
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