

	Units	Technical Cordierite (C 520)	Steatite (C 221 – L5)	Silicon Nitride (GPSSN))	Aluminium Nitride (Sintered)	Zirconia (Y-TZP)
Max use temperature	°C	1200	1200	1200	1000	100*
(in air)	°F	2200	2200	2200	1800	200*
Density	g/cm <sup>3</sup>	2.0	2.7	3.2	3.3	6
Open porosity	%	30	<0.5	<0.5	<0.5	<0.5
Bending strength	MPa	30	140	700	200	900
Modulus of elasticity	GPa	40	100	300	325	200
Thermal conductivity	W/mK	1.5	2.5	20	170	3
Coefficient of thermal expansion	x10 <sup>-6</sup> /K	3.0	8	3.3	5.5	10
K <sub>IC</sub> Fracture Toughness	MPam <sup>½</sup>			7		9
Volume resistance	(Ω.cm)	>10 <sup>12</sup>	>10 <sup>12</sup>	>10 <sup>14</sup>	>10 <sup>15</sup>	5 x10 <sup>8</sup>
Dielectric constant	-		6	7	9	29
Dielectric strength	(kV/mm)		20	15		

## Advanced Ceramics