

Machinables

me	Macor	Shapal-M	Pyrophyllite	ZSBN	BoronNitride Grade A	BoronNitride HP Grade	BoronNitride AXO5	PTFE	Steel(mild)
Colour	white	fawn	brown/pink	grey	off-white	white	white	white	grey
Density	2.52g/cm	2.90g/cm		2.90g/cm	1.92g/cc	1.90g/cc	1.91g/cc	2.2kg dm	7.85kg dm
Porosity	0%	0%	2.6%	2.4-3.4%	2.84%	15.26%	14.2%	0%	0%
Poissons ratio	0.29	0.31							0.27-0.30
Thermal conductivity	1.46Wm/°C	90Wm/°C	1.25Wm/°C	para22.62 perp40.21	para30.13 perp33.17	para27.37 perp30.97	para71.3 perp19.4	0.23-0.27 Wm/°C	50 Wm/°C
Coefficient of thermal expansion	$9.3 \times 10^{-6}/^{\circ}\text{C}$	$4.4 \times 10^{-6}/^{\circ}\text{C}$		para6.4 perp1.98 (@40)	para11.85 perp3.12	para2.95 perp0.87	para0.57 perp0.46	90- 130x10/°C	11x10/°C
Dielectric strength	40 KV/mm	40 KV/mm	75 V/mm		2400 V/mm	1700 V/mm	2000 V/mm		
Dielectric constant	6.03 1KH Z25 °C	7.11 1MHZ 25 °C			4.15- 4.58	4.02- 4.30	4.0	21	
Dielectric loss tangent	4.7×10^{-4} 1KHZ 25 °C			0.0003- 0.0012 (8.8GHZ)	0.0005- 0.0017 (8.8GHZ)	0.0007- 0.0014 (8.8GHZ)			
Flexural strength	94 MPa			para 10,460 perp 20,790	para 11,000 perp 16,400	para 6,340 perp 8,730	para 2,025 perp 3,125		
Hardness	400 Vickers	560 Vickers	5 Mohs	95.0- 105Kg/mm	15.51- 24.19Kg/mm	13.79- 18.95Kg/mm	3.42- 491Kg/mm		
DC volume resistance	$>10^{16}$ ohm/cm	$>10^{12}$ ohm/cm			$>10^{14}$ ohm/cm	$>10^{14}$ ohm/cm	$>10^{14}$ ohm/cm		
max. use temperature	1000 °C	1900 °C*1000 °C	1100 °C	850 °C*1800 °C	850 °C*1800 °C	850 °C*1800 °C	850 °C*3000 °C		
Thermal expansively	13x10 /K	5.2x /K							11x10/°C
Specific heat	0.79 KJ/Kg °C			para0.722 perp0.705 (@100C)	1.61 @700C (J/g °C)	1.468 @700 (J/g °C)	1.5 @700C (J/g °C)	1,050J/kgK	450J/kgK
Compressive strength	342 MPa	1200 MPa	105 MPa	31.74 psi23 °C	20,780 psi25 °C	4,370 psi25 °C	2,600 psi25 °C		