

MULLITE SPECIFICATIONS

	Property	ASTM Method	Units	Mullite
General	Crystal Size (Average)	Thin Section	Microns	7
	Color	--	--	Gray-Tan
	Water Absorption	C 20-97	%	0
Mechanical	Density	C 20-97	g/cc	3.00
	Hardness	Vickers 500 gm	GPa (kg/mm ²)	10 (1000)
	Hardness	--	R45N	78
	Fracture Toughness	Notched Beam	MPam ^{1/2}	3
	Flexural Strength (MOR) (3 point) @ RT	F417-87	MPa (psi x 10 ³)	206 (30)
	Tensile Strength @ RT	--	MPa (psi x 10 ³)	138 (20)
	Compressive Strength @ RT	--	MPa (psi x 10 ³)	1034 (150)
	Elastic Modulus	C848	GPa (psi x 10 ⁶)	179 (26)
	Poisson's Ratio	C848	--	0.24
Thermal	C.T.E. 25 - 100° C	C 372-96	x 10 ⁻⁶ /C	3.6
	C.T.E. 25 - 300° C	C 372-96	x 10 ⁻⁶ /C	4.1
	C.T.E. 25 - 600° C	C 372-96	x 10 ⁻⁶ /C	4.8
	Thermal Conductivity @ RT	C 408	W/m K	4
	Max Use Temp	--	Fahrenheit (°F)	3100
		--	Celsius (°C)	1700
Electrical	Dielectric Strength (.125" Thick)	D 149-97A	V/mil	250
	Dielectric Constant @ 1 MHz	D 150-98	--	6.7
	Dielectric Constant @ Gigahertz	D 2520-95	--	6.7
				11.4
	Dielectric Loss @ 1 MHz	D 150-98	--	0.003
	Dielectric Loss @ Gigahertz	D 2520-95	--	0.003
				11.4
	Volume Resistivity, 25°C	D 257	ohms-cm	> 1 x 10 ¹⁴
	Volume Resistivity, 300° C	D 1829	ohms-cm	4 x 10 ¹⁰
	Volume Resistivity, 500° C	D 1829	ohms-cm	1 x 10 ⁹