Superior Technical Ceramics

PROVIDING ADVANCED CERAMIC SOLUTIONS WORLDWIDE SINCE 1898

STEATITE SPECIFICATIONS

	Property	ASTM Method	Units	L-4	L-5
General	Crystal Size (Average)	Thin Section	Microns	7	7
	Color	--	--	Tan	Gray-Green
	Gas Permeability	--	atms-cc/sec	--	--
	Water Absorption	C 20-97	%	0	0
Mechanical	Density	C 20-97	g/cc	2.65	2.75
	Hardness	Vickers 500 gm	GPa (kg/mm^2)	4.9 (500)	4.9 (500)
	Hardness	--	R45N	57	57
	Fracture Toughness	Notched Beam	$MPam^{1/2}$	--	--
	Flexural Strength (MOR) (3 point) @ RT°	F417-87	MPa (psi x 10^3)	117 (17)	138 (20)
	Tensile Strength @ RT°	--	MPa (psi x 10^3)	103 (15)	103 (15)
	Compressive Strength @ RT°	--	MPa (psi x 10^3)	551 (80)	586 (85)
	Elastic Modulus	C848	GPa (psi x 10^6)	103 (15)	103 (15)
	Poisson's Ratio	C848	--	0.24	0.24
Thermal	C.T.E. 25 - 100° C	C 372-96	x 10^{-6}/C	7.3	8.5
	C.T.E. 25 - 300° C	C 372-96	x 10^{-6}/C	7.4	8.6
	C.T.E. 25 - 600° C	C 372-96	x 10^{-6}/C	7.5	8.6
	Thermal Conductivity @ RT°	C 408	W/m K	3	3
	Max Use Temp (non-loading) (at high strength)	--	Farenheit (°F)	2350	2350
		--	Celcius (°C)	1290	1290
Electrical	Dielectric Strength (.125" Thick)	D 149-97A	V/mil	260	270
	Dielectric Constant @ 1 MHz	D 150-98	--	5.6	5.7
	Dielectric Constant	D 2520-95	--	5.6	5.8
	@ Gigahertz			9.2	12.5
	Dielectric Loss @ 1 MHz	D 150-98	--	0.003	0.0014
	Dielectric Loss	D 2520-95	--	0.005	0.0017
	@ Gigahertz			9.2	12.5
	Volume Resistivity, 25°C	D 257	ohms-cm	> 1 x 10^{14}	> 1 x 10^{14}
	Volume Resistivity, 300° C	D 1829	ohms-cm	2 x 10^{10}	1 x 10^{11}
	Volume Resistivity, 500° C	D 1829	ohms-cm	1 x 10^9	4 x 10^{10}
	Volume Resistivity, 700° C	D 1829	ohms-cm	2 x 10^8	1 x 10^9
	Volume Resistivity, 1000° C	D 1829	ohms-cm	--	--

Form Revised: 9/26/2014

CONTACT US

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