



GRADE "A" LAVA SPECIFICATIONS

	Property	ASTM Method	Units	Grade "A" Lava
<b>General</b>	Crystal Size (Average)	Thin Section	Microns	--
	Color	--	--	Grey-Tan
	Gas Permeability	--	atms-cc/sec	Porous
	Water Absorption	C 20-97	%	3
<b>Mechanical</b>	Density	C 20-97	g/cc	2.30
	Hardness	Vickers 500 gm	GPa (kg/mm <sup>2</sup> )	4.4 (450)
	Hardness	--	R45N	42
	Fracture Toughness	Notched Beam	MPam <sup>1/2</sup>	--
	Flexural Strength (MOR) (3 point) @ RT°	F417-87	MPa (psi x 10 <sup>3</sup> )	69 (10)
	Tensile Strength @ RT°	--	MPa (psi x 10 <sup>3</sup> )	21 (3)
	Compressive Strength @ RT°	--	MPa (psi x 10 <sup>3</sup> )	172 (25)
	Elastic Modulus	C848	GPa (psi x 10 <sup>6</sup> )	--
	Poisson's Ratio	C848	--	--
<b>Thermal</b>	C.T.E. 25 - 100° C	C 372-96	x 10 <sup>-6</sup> /C	2.9
	C.T.E. 25 - 300° C	C 372-96	x 10 <sup>-6</sup> /C	3.3
	C.T.E. 25 - 600° C	C 372-96	x 10 <sup>-6</sup> /C	3.6
	Thermal Conductivity @ RT°	C 408	W/m K	2
	Max Use Temp (non-loading) (at high strength)	--	Fahrenheit (°F)	2000
		--	Celcius (°C)	1100
<b>Electrical</b>	Dielectric Strength (.125" Thick)	D 149-97A	V/mil	100
	Dielectric Constant @ 1 MHz	D 150-98	--	5.3
	Dielectric Constant @ Gigahertz	D 2520-95	--	--
				--
	Dielectric Loss @ 1 MHz	D 150-98	--	--
	Dielectric Loss @ Gigahertz	D 2520-95	--	--
				--
	Volume Resistivity, 25° C	D 257	ohms-cm	--
	Volume Resistivity, 300° C	D 1829	ohms-cm	--
	Volume Resistivity, 500° C	D 1829	ohms-cm	--
	Volume Resistivity, 700° C	D 1829	ohms-cm	--
Volume Resistivity, 1000° C	D 1829	ohms-cm	--	

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