

ALUMINA PROPERTIES

Properties	Units	94%	96%	99.9%	Al ₂ TiO ₅	Cordierite
Density	g/cm ³	3.70	3.82	3.90	3.2	2.2
Colour	-	WHITE	WHITE	WHITE / IVORY	WHITE	WHITE / IVORY
4-PT Flexural Strength (MOR) (20°C)	MPa (psi x 10 ³)	308	343	360	-	-
Elastic modulus (20°C)	GPa (psi x 10 ⁶)	303	303	386	10 - 20	-
Poisson's Ration (20°C)	-	0.21	0.21	0.22	-	-
Compressive Strength (20°C)	MPa (psi x 10 ³)	2103	2068	2700	-	-
Hardness (Knoop,1000gm)	GPa (kg/mm ²)	11.5	11.5	14.5	5	-
Fracture Toughness (K _{IC})	MPa m ^{1/2}	4 - 5	4 - 5	4 - 5		1 - 2
Thermal Conductivity (20°C)	W/m	22.4	24.7	33.0	3.15	3.0
Coefficient of Thermal Expansion (25-1000°C)	1x10 ⁻⁶ /°C	8.2	8.2	8.2	7.55	3
Specific heat (100° C)	J/kg*K	880	880	870	-	
Dielectric Strength (6.35mm)	ac-kV/mm (ac V/mil)	8.3	8.3	8.7	-	180
Dielectric Constant (1MHz)	25° C	9.1	9.0	9.8	-	-
Dielectric loss (tan delta) (1 MHz 25°C)	25° C	0.0004	0.0002	<0.0001	2.5x10 ⁻⁵ to 3x10 ⁻³	-
Volume resistivity (25° C)	ohm-cm	>10 ¹⁴	>10 ¹⁴	>10 ¹⁵	10 ¹⁰ to 10 ¹²	-
(500°C)	ohm-cm	4 x 10 ⁹	4 x 10 ⁹	1 x 10 ¹²	-	-
(1000°C)	ohm-cm	5 x 10 ⁵	1 x 10 ⁶	1 x 10 ⁷	-	-
Porosity	%	-	-	-	-	10 - 15
Safe Use Temperature	°F °C	-	-	-	-	2400 1315

These values represent typical properties of standard materials.

Values should be used only for comparison and should not be used as warranty.