



Alumina Ceramics

Product Description

Alumina ceramics, available in purity levels from 85 to 99.8%, are used in electronic, wear, mechanical, and thermal applications. Precise material batch control (from milling through spray drying) and powder sizing assures reproducibility from order to order and through the life of long production runs. Parts are produced using presses that range in size from 1 to 40 tons and complex motion capabilities allow tight tolerance controls as well as multi-level and multi-hole geometric configurations.

GBC's small pressed alumina tubes and rings are ideal for use in varactors and other sub-miniature electronic devices. These tiny ceramic parts offer ID as small as 0.007". Minimum wall thickness is 0.010" and minimum length is 0.008". The maximum length-to-wall thickness ratio is 8:1. Multi-cavity tooling enable fast, high-volume production, at a low cost. The 96% alumina composition is an easily metallizable ceramic.

Property/Composition	Units	Alumina					
Alumina	%	85	92*	96	97.5	98	99.5
Tensile	1000psi	18	28	30	30	30	32
Flexural	1000psi	45	55	55	55	55	60
Compressive	1000psi	250	280	300	300	300	330
Density	g/cc	3.40	3.65	3.70	3.72	3.80	3.85
Porosity	-	0	0	0	0	0	0
Colour	-	White	White	White	White	White	White
Hardness	Moh's Scale	9	9	9	9	9	9
Thermal Conductivity	g. cal/cm-sec-°C	0.042	0.045	0.049	0.050	0.052	0.055
C.T.E.	In/in/°C x 10 ⁻⁷	67	71	75	76	77	78
Max. Working Temp.	°C	1350	1500	1600	1650	1650	1700
Dielectric Strength	D.C. Volts/Mil. @0.100" thick	190	210	230	230	240	250
Volume Resistivity	Ohm/cm ³ x 10 ¹²	0.02	1.0	2.0	3.1	3.2	3.5
Dielectric Constant	-	7.6	8.6	9.0	9.4	9.6	9.7
Dissipation Factor	-	0.0006	0.0003	0.0003	0.0002	0.0001	0.0001
Loss Factor	-	0.006	0.003	0.0028	0.0013	0.0011	0.0009

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