

## Alumina Ceramics

### Product Description

Alumina ceramics, available in purity levels from 85 to 99%, 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's 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 ceramic composition is an easily metallisable 96% alumina.

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

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