

Table of Properties of Alumina Ceramic Material

The Properties	Unit	RESISTEK 92	RESISTEK 94	RESISTEK 95	RESISTEK 96	RESISTEK 99	RESISTEK 99.7
Nominal Composition	%	92% Al <sub>2</sub> O <sub>3</sub>	94% Al <sub>2</sub> O <sub>3</sub>	95% Al <sub>2</sub> O <sub>3</sub>	96% Al <sub>2</sub> O <sub>3</sub>	99% Al <sub>2</sub> O <sub>3</sub>	99.7% Al <sub>2</sub> O <sub>3</sub>
Density	g/cm <sup>3</sup>	3.60	3.69	3.67	3.67	3.85	3.89
<b>Mechanical Properties</b>							
Flexural Strength	20°C	330	330	330	360	330	330
	800°C	240	240	240	250	250	250
Compressive Strength	MPa	2100	2100	2100	2100	2100	2100
Modulus of Elasticity	GPa	275	275	275	275	330	330
Hardness	R45N	80	78	80	81	82	83
	Hv0.3	1500	1500	1550	1590	1600	1600
Fracture Toughness (K <sub>IC</sub> )	MPa <sup>1/2</sup>	3.5	3.5	3.6	3.5	3.8	4.0
<b>Thermal Properties:</b>							
Max. Use Temp.	°C	1450	1500	1450	1700	1750	1800
Thermal Expansion Coeff.	x 10 <sup>-6</sup> /°C	8.2	8.1	8.3	7.8	8.2	8.4
Thermal Conductivity	W/mK	17	19	22.5	25	28	29
Thermal Shock Resistance	°C	200	200	200	200	200	200
<b>Electrical Properties:</b>							
Resistivity	25°C	>10 <sup>14</sup>	>10 <sup>14</sup>	>10 <sup>14</sup>	>10 <sup>14</sup>	>10 <sup>14</sup>	>10 <sup>14</sup>
	400°C		9 x 10 <sup>11</sup>	4 x 10 <sup>11</sup>	3.1 x 10 <sup>11</sup>		1.6 x 10 <sup>13</sup>
	1000°C		5 x 10 <sup>5</sup>	1 x 10 <sup>6</sup>	1 x 10 <sup>6</sup>		2 x 10 <sup>6</sup>
Dielectric loss	1±0.PMHZ Tg8×10 <sup>-4</sup>	<1.5	<2.0	<1.0	<1.0	<0.3	<0.2
Permittivity	1±0.PMHZ	<9	<9.5	<9.5	<9.5	<9.5	<8.5

\*NOTE: The information shown on the table is for reference. RESISTEK can change it without prior notice.