

Chemical Composition and Physical Properties

	95 Series	99 Series	997 Series	Steatite	Zr ₂ O Y-PSZ	Al ₂ O ₃ +Zr ₂ O
Al ₂ O ₃ (%)	≥95	≥99	≥99.7			
SiO ₂ (%)	≤2.3	<0.2	<0.04		<0.2	<0.04
Fe ₂ O ₃ (%)	<0.1	<0.1	<0.05		<0.1	<0.05
Alkaline Substances(%)	<0.1	<0.1	<0.08		<0.1	<0.08
Density(g/cm ³)	3.7	3.87	3.89	2.7	3.87	3.89
Hardness(Mohs)	8.8	9	9		9	9
Flexural strength(Mpa)	300	340	390	150	1000	600
Compressive strength(Mpa)	3400	3600	3900	900	3000	3600
Modulus of elasticity(Gpa)	350	380	390	120	205	350
Impact resistance(Mpa m ^{1/2})	4.0	5.0	5.2		8	7.5
Webull modulus(m)	10	10	12		22	18
Vickers hardness(HV0.5)	1800	1900	2000		1300	1600
Thermal expansion coefficient(10 ⁻⁶ k ⁻¹)	5.0-8.3	5.4-8.3	5.5-8.4	6.0-9.0	10	6.0-8.6
Thermal conductivity(W.mK ⁻¹)	24	27	28	2.0-2.5	<2	18
Thermal shock resistance (T [°] C)	250	270	280	100	270	320
Volume resistivity at 20 [°] C (Ω cm)	>10 ¹⁴	>10 ¹⁴	>10 ¹⁵	>10 ¹³	>10 ¹⁰	>10 ¹³
Dielectric strength(kv/mm)	20	25	30	20		
Operating temperature in short time(°C)	1650	1800	1850	1450		
Operating temperature in long time(°C)	1530	1650	1700	1250		
color	pink,white	white,ivory	ivory	white		