Apceram

Material Especifications

			Alumina	Alumina	Alumina	Alumina	Circonia	Circonia	Circonia	Circonia	Silicon C
Properties	**Conditions**	**Units**	**92%**	**96%**	**98%**	**99,70%**	**MgPSZ**	**YPSZ**	**Zr-Intense**	**Zr-Shock**	**SSiC**
Density		g/cc	3,7	3,8	3,85	3,9	5.75	6	> 5.40	5.65	3.15
Absorption		%	0	0	0	0	0	0	0	0	0
Gas permeability			0	0	0	0	0	0	0	0	0
Bending strenght	20º C	Mpa	340	358	375	379	900	1300	>800	>1000	480
Elastic modulus	20º C	Gpa	280	303	350	370	200	210	235	255	410
Poisson´s ratio	20º C		0.21	0.21	0.22	0.22	0.3	0.23	0.30	0.29	0.21
Compressive strength	20º C	MPa	2100	2068	2500	2600	1750	2500	>2000	>2000	3500
Hardness		Kg/mm2	1100	1175	1400	1440	1200	1300	1450	1300	2800
Tensile strength	25º C	MPa	200	221	248	262	483	-	NA	NA	-
Fracture toughness	K(Ic)	Mpa m1/2	4.5	4.5	4.5	4.5	11	13	6	15	4
Thermal conductivity	20º C	W/mK	20	24.7	27	30	2.2	2.2	-	-	150
Thermal Expansion	25-1000º C	1x10 /ºC	8.1	8.2	8.2	8.2	10.2	10.3	-	-	4.4
Specific heat	100º C		900	880	880	880	400	400	NA	NA	800
Thermal shock resistance	Δ Tc	J/Kg*K	250	250	200	200	350	350	-	-	300
Maximum use temperature		ºC	1500	1600	1650	1700	500	1500	1000	1000	1700
Dielectric strength		ac Kv/mm	8.3	8.3	8.7	8.7	9.4	9	9	9	-
Dielectric constant	1 MHz	25º C	8.9	9	9.6	9.7	28	29	29	29	-
Dielectric loss	1 MHz	25º C	0,0004	0,0002	0,0002	0,0001	0,001	0,001	0,001	0,001	-
Resistivity	25º C	ohm-cm	>10^14	>10^14	>10^14	>10^14	>10^13	>10^13	>10^13	>10^13	>10^5

The table shows typical properties and representative values
Data can vary depending on the production method and dimensions of the piece.