

Material specifications

Properties		AC998 Aluminium Oxide	99.5% Aluminium Oxide	Silicon	Quartz	Silicon Carbide	Silicon Nitride	Aluminium Nitride	Zirconia	Macor	Graphite	Sapphire	Pyrex	Stainless Steel 316	Aluminium 6061	Vespel	Celazole		
Mechanical	Density	g/cm ³	3.9	3.8-3.9	2.33	2.2	3.08-3.20	3.18-3.30	3.19-3.25	5.79-6.05	2.52-2.63	1.57-1.88	3.97	2.23	8.08	2.7	-	1.3	
	Color	-	ivory	ivory/white	gray	white / transp.	black	gray	gray	ivory	white	black	white / transp.	white / transp.	silver gray	light gray	brown	black	
	Water Absorption	%	0	0	0	0	0	0	0	0	0	0.5-3.0	0	0	0	0	-	0.0-0.4	
	Flexural Strength	MPa @ room temp.	400	310-379	-	80	462	338-590	428	900-980	89	50	760-1035	-	-	-	-	-	221
	Compressive Strength	MPa @ room temp.	3180	2070-2620	-	650-1100	1725-2500	-	-	-	345	96	2000	-	-	-	-	-	400
	Hardness	GPa	14.0-15.0	13.8-17.6	11.3	11.5-13.5	23.5-24.5	13.2-14.7	10.4-11.7	11.0-12.7	2.5	8.5	18.5-21.5	4.1	»19	»11	-	-	-
Thermal	Coefficient of Linear Thermal Expansion	10 ⁻⁶ /°C	8	9.0-9.4	2.3-2.6	0.55	4.0-4.5	2.5-3.5	4.6-5.7	9.2-10.3	6.3-9.7	8.39	7.9-8.8	3.25 (through 300°C)	17.5	21-23	30	13 (through 150°C)	
	Thermal Conductivity	W/mK @ room temp.	29.5	25.1-35.6	125	14	75-155	15-30	100-115	2.2-3.8	18	95.6	40	11	16.2	153-180	-	0.4	
	Specific Heat	cal/g°C @ room temp.	0.21	0.19-0.21	0.18	0.16	0.15	0.17	-	0.12	-	0.16-0.38	0.18	0.18	0.12	-	-	-	
	Thermal Shock Resistance	ΔT(°C)	250	200	-	-	350-500	500-670	400	280-360	-	200-250	-	100	-	-	-	-	-
	Maximum Use Temperature	°C	1800	1600-1750	1350	1200	1400	1200-1400	1600	2400	950-1000	-	» 2000	230-490	900	540	288-482	345-540	
Electrical	Volume Resistivity	Ωcm @ room temp.	>10 ¹⁴	>10 ¹⁴	0.005 - >20	7 x 10 ⁷	10 ⁸	10 ¹²	>10 ¹⁴	-	>10 ¹⁴	0.45-1.00 x 10 ⁻³	10 ¹⁶	-	7.4 x 10 ⁻⁶	2.6 x 10 ⁻⁶	>10 ¹⁴	>10 ¹³	
	Dielectric Contact	1MHz @ room temp.	9.8	9.6-10.2	11.7	3.75	-	-	8.0-9.0	-	6	-	9.3-11.5	4.6	-	-	3.55	-	