

Material Portfolio	Material	Alumina						Zirconia	Silicon Carbide	Black alumina	Electrically conductive		Low thermal conductive	
		ASUZAC Brand	ARK	ARW	High Alumina AR	ARP	AR4N	ARP4N	ARZ	ARC	BARL	Alumina	Colseed	Alcima L
											CAR	CTR	ARSML	ARSMM
Purity	%	96.0	99.6	99.6	99.96	99.99	99.99	-	-	99.4	-	99.9	98.2	99.6
Density	kg/m ³	3.76×10 ³	3.94×10 ³	3.94×10 ³	3.99×10 ³	3.94×10 ³	3.99×10 ³	6.00×10 ³	3.14×10 ³	3.75×10 ³	3.6×10 ³	4.21×10 ³	2.33×10 ³	2.50×10 ³
Color tone		White	White	Ivory	Dark Ivory	White	Light orange	White	Black	Black	Black	Gray	Gray	White
Flexural rigidity	MPa	340	440	370	490	410	490	980	500	539	340	224	146	150
Young's ratio	GPa	370	380	390	390	391	406	210	410	363	340	269	99	137
Poisson's ratio		-	-	-	-	0.24	0.24	-	-	0.23	-	0.27	0.27	0.31
Fracture toughness	MN/m ^{3/2}	3	4	4	5	4	3.5	7	2	3.2	-	2.3	-	1.6
Vickers hardness	Gpa	12.7	14.7	14.7	17.6	16.7	17.6	11.8	30.4	10.6	17.6	8.4	5.5	8.8
Thermal expansion coefficient	x10 ⁻⁶ [0-800°C]	7.9	8	8	8	7.6	8.1	10	3.1	8.1	8.6	8.8	2.3	2.1
Thermal conductivity	W/m.K	21	29	29	29	34.4	34.4	4	138	31.2	22	7	1.7	4.8
Specific heat	KJ/kg.K	-	-	-	-	0.77	0.77	-	-	0.8	-	0.68	0.8	0.8
Heat shock	C	-	-	-	-	200	200	-	400	-	-	-	550	500
Dielectric constant	[1MHz]	10.5	11.5	10.2	9.8	9.7	9.7	-	-	16.7	-	-	4.6	4.7
Dielectric loss	x10 ⁻⁴ [1MHz]	7	5	70	3	1	2	-	-	10	-	-	40	10
Volume resistance	Ω.cm	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴	>10 ¹²	0.86	>10 ¹⁴	8	100	>10 ¹⁵	>10 ¹⁵
Withstand voltage	Kv/mm	13	15	15	-	15	15	-	-	9.3	-	-	10	10
Mirror plane reflectivity	% (Wave length 400 thru 2400nm)	-	-	-	-	-	-	-	-	4.1 0.5 when blasted	7	-	-	-
Features & applications	High rigidity High dielectric constant Excellent wear resistance						Excellent thermal resistance High rigidity Excellent wear resistance			Less reflection		High density	High purity	
	High purity Less contamination			High density Free from microscopic dust			High breakage tenacity High chemical strength (excl fluorine)		High dielectric constant		High dielectric constant Reduction atmosphere at high temperature		Low thermal expansion Excellent thermal resistance Low thermal conduction	