

High Density Alumina Materials Data Sheet

Property	Units	99.8% Alumina	99.7% Alumina	95.0% Alumina	92.0% Alumina
Description					
Nominal Composition		α - Alumina (99.8%)	α - Alumina (99.7%)	α - Alumina (95.0%)	α - Alumina (92.0%)
Microstructure					
Density	[g/cm ³]	3.90	3.93	3.65	3.60
Water Absorption	[%]	0	0	0	0
Porosity	[vol%]	0	0	0	0
Colour					
		Cream	Cream	White	White
Mechanical Properties					
Compressive Strength	[MPa]	3700	-	1960	2480
Flexural (Bending) Strength (@20°C)	[MPa]	550	-	408	338
Young's Modulus E	[GPa]	380	-	-	276
Fracture Toughness	[MPa.m ^{1/2}]	4	3	-	-
Vickers Hardness	[kg/mm ²]	1600	1800	-	1100
Thermal Properties					
Max Working Temperature	[°C]	1800	1500	-	1000
Thermal Conductivity (@20°C)	[W/mK]	38	-	-	16.7
Thermal Expansion Coefficient	[x10 ⁻⁶ /K]	8.4	-	7.2	8
Thermal Shock Resistance (ΔT _C)	[°C]	200	200	-	250
Electrical Properties					
Specific Resistance (@20°C)	[Ωcm]	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴	-

Note: The above data represent typical values of Rojan sintered Alumina.