



	Units	Technical Alumina (92%)	Technical Alumina (95%)	Technical Alumina (99%)
Max use temperature	°C	1400	1450	1600
	°F	2550	2650	2900
Density	g/cm ³	3.6	3.7	3.8
Open porosity	%	<0.5	<0.5	<0.5
Bending strength	MPa	150	175	200
Modulus of elasticity	GPa	300	300	300
Thermal conductivity	W/mK	20	25	25
Coefficient of thermal expansion	x10 ⁻⁶ /K	7		8
KIC Fracture Toughness	MPam ^{1/2}			
Volume resistance	(Ω.cm)	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴
Dielectric constant	-	8	9	10
Dielectric strength	(kV/mm)	10	20	30

Technical Grade Alumina

Alumina is the most widely used technical ceramic and is the material of choice in about 80% of engineering applications due to its combination of properties. Fired at over 1600°C (2900°F) to give a fully dense technical ceramic, alumina exhibits high mechanical strength, rigidity and can be machined to tight tolerances and fine surface finishes. Alumina is often used as a replacement for metallic components in demanding engineering applications.



	Units	Refractory Alumina (90%)	Refractory Alumina (99%)	Fused Mullite (80%)
Max use temperature	°C	1600	1750	1500
	°F	2900	3200	2700
Density	g/cm ³	2.8	3	2.7
Open porosity	%	20	21	20
Thermal conductivity	W/mK	3	3	2.3
Coefficient of thermal expansion	x10 ⁻⁶ /K	7	8	5

Refractory Grade Alumina

Our refractory grades of Alumina are thermally stable to 1600°C (2900°F) in oxidising atmospheres and reducing atmospheres. Alumina under vacuum can be stable up to 2000°C (3600°F). They also offer increased load bearing capacity at higher temperatures compared to the technical alumina grades.