

Alumina

Al₂O₃

NANOe

We offer two main types of alumina powders: one with binding system (Al100-BA), one without (Al100). The powders are available in spray-dried granulates, in slurries or in ceramic injection molding.

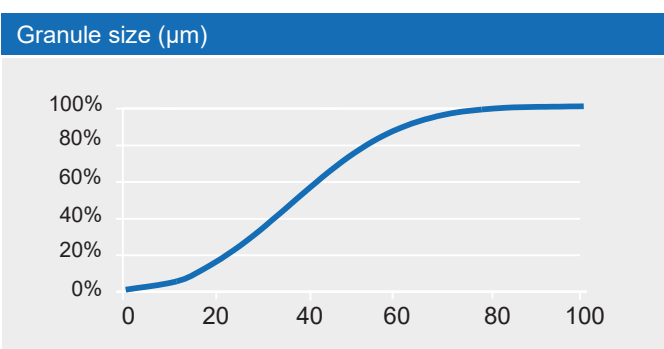
Key Benefits

Higher toughness
Better wear resistance

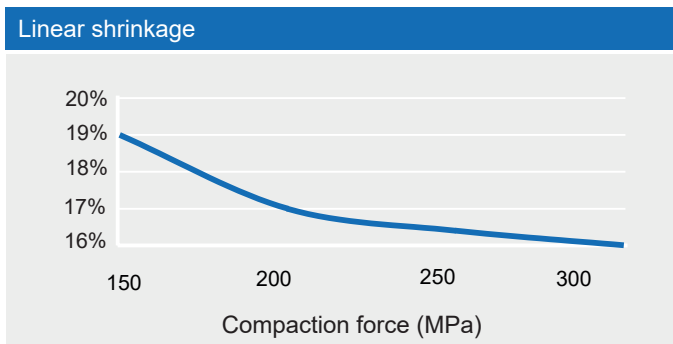
Extremely high hardness
Higher breakdown electrical field

Increased thermal shock resistance
Less rugosity

General characteristics		Al100-BA / Al100
Loss on ignition	wt%	1 - 3
Average crystallite size	nm	150
Free density	g/cm ³	1.1 - 1.3
Minimum purity	%	99.9
Alpha phase	%	100
Specific surface area	m ² /g	10 ± 2
Granulates size (ds50)	µm	35



Purity		Al100
Al ₂ O ₃	wt%	>99.7
MgO	ppm	1000
Na ₂ O	ppm	< 100
SiO ₂	ppm	< 50
Fe ₂ O ₃	ppm	< 30
K ₂ O, CaO	ppm	total < 150
ZrO ₂	wt%	0.1%



Sintering		Al100
Compaction force	MPa	> 200
Sintering temperature	°C	1580
Sintered density	g/cm ³	> 3.96
Intercept grain size	µm	2 - 3
Elasticity modulus	GPa	390
Hardness (Hv10)	GPa	21
Fracture toughness (K ₁₀)	Mpa.m ^{0.5}	3.84
Bending strength	MPa	500 - 600

