

Zirconia Toughened Alumina 25% **NANOe**

We offer several types of ZTA powders: one with binding system (ZTA-25 BA), one without (ZTA-25). Our ZTA is a homogeneous mix of our 150 nm alpha alumina and our 100 nm yttria stabilized zirconia. The powders are available in spray-dried granulates or slurries.

Key Benefits

Higher toughness than alumina

high hardness

Better bending strength

General characteristics		ZTA BA-25/ ZTA-25
Loss on ignition	wt%	3/1
Average crystallite size	nm	Al:150 / Zr:100
Free density	g/cm ³	1.3 - 1.4
Minimum purity(Zr+Y+Hf+Al)	%	99.95
Zirconia content	%	25
Specific surface area	m ² /g	15 ± 2
Granulates size	µm	35

Purity		ZTA25
Al ₂ O ₃	wt%	75
ZrO ₂	wt%	23.3
Y ₂ O ₃	wt%	1.3
HfO ₂	wt%	< 0.3
MgO	ppm	1000
Na ₂ O	ppm	< 100
SiO ₂ , K ₂ O, CaO, Fe ₂ O ₃	µm	total < 230

Sintering		ZTA25
Compaction force	MPa	> 200
Sintering temperature	°C	1550
Sintered density	g/cm ³	> 4.34
Intercept grain size Al	µm	0.6 - 0.7
Intercept grain size Zr	µm	0.3 - 0.4
Hardness (Hv10)	GPa	> 18
Fracture toughness (K ₁₀)	Mpa.m ^{0.5}	> 5
Bending strength	MPa	900

