

Zirconia Toughened Alumina - ZTA nanopowders

Our Offer

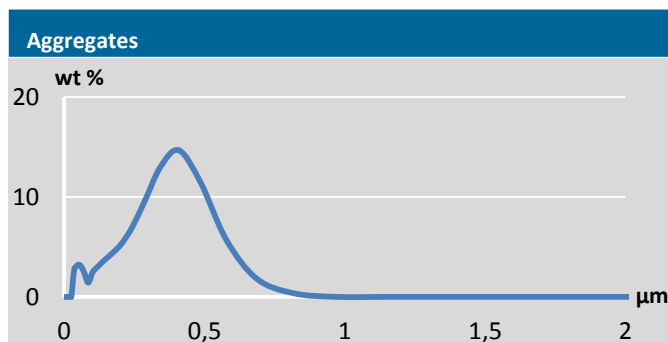
We offer two main types of ZTA nanopowders: one with binding system (ZTA-BA), one without (ZTA). Our ZTA is a homogeneous mix of our 150nm alpha alumina (90wt%) and our 20nm yttria stabilised zirconia (10wt%). The powders are available in spray-dried granulates or slurries. Customized ZTA nanopowders are available on demand, with different weight ratio between alumina and zirconia.

Key Benefits

- Higher toughness than alumina
- Extremely high hardness
- Better wear resistance

General Characteristic		ZTA-10-BA	ZTA-10
Binding System	-	Organic, PVA based	None
Zirconia percentage		10 %	10 %
Powder Free Density	g/cm ³	1,1	1,3
Minimum Purity ((Zr+Y+Hf+Al)	%	99,9%	99,9%
Specific surface area	m ² /g	8± 2	8 ± 2

Purity		ZTA-10-BA
Al ₂ O ₃	wt%	90
ZrO ₂	wt%	9,12
Y ₂ O ₃	wt%	0,51
HfO ₂	wt%	0,34
MgO	ppm	900
SiO ₂ , K ₂ O, CaO	ppm	<200
Na ₂ O, Fe ₂ O ₃	ppm	< 40



Sintering		ZTA-10-BA
Compaction force	MPa	> 200 MPa
Green density	%	60 %
Sintering temperature	°C	1500
Sintered density	g/cm ³	> 4,12
Intercept grain size Al	µm	1,0
Intercept grain size Zr	nm	200
Elasticity modulus	GPa	380
Hardness (Vickers)	GPa	> 19
Fracture toughness	MPa.m ^{0,5}	> 4,5

