

Zirconia ZrO₂ nanopowders

Our offer

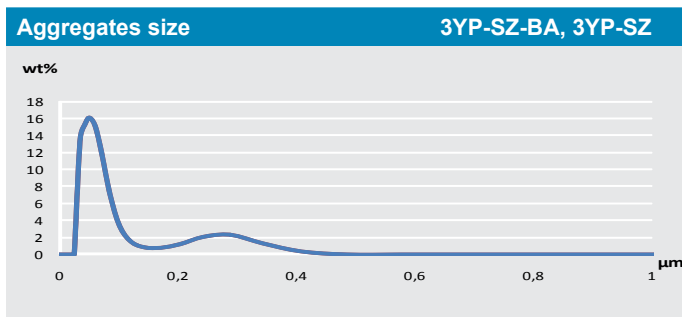
We offer two main types of zirconia nanopowders: one with binding system (3Y-TZP-BA), one without (3Y-TZP). The powders are available in spray-dried granulates or slurries. Customized zirconia nanopowders are available on demand, such as 8mol% yttrium, ceria or magnesia stabilized zirconia.

Key Benefits

- Higher toughness
- Better wear resistance
- Slower ageing

General Characteristic		3Y-TZP-BA	3Y-TZP
Yttrium Y ₂ O ₃	mol %	3	3
Binding System	-	Organic, PVA based	None
Average Particle Size	nm	12	12
Powder Density	g/cm ³	2	2
Minimum Purity (Zr+Y+Hf+Al)	%	99.9%	99.9%
Specific surface area	m ² /g	20 ± 5	20 ± 5

Purity		3YP-SZ-BA, 3YP-SZ
ZrO ₂	wt%	93.80%
Y ₂ O ₃	wt%	5.15%
Al ₂ O ₃	wt%	0.25%
HfO ₂	wt%	0.80%
SiO ₂	ppm	< 30
Fe ₂ O ₃	ppm	< 15
Na ₂ O	ppm	< 20



Sintering		3YP-SZ-BA, 3YP-SZ
Compaction Force	MPa	150
Green density	%	51%
Sintering temperature	°C	1400 - 1450
Sintered density	g/cm ³	> 6
Sintered grain size	nm	300 - 500
Elasticity modulus	GPa	210
Hardness (Vickers)	GPa	> 11
Abrasion resistance	nm/h	5
Fracture toughness	MPam ^{0.5}	> 6

