

TECHNICAL DATA SHEET

3YSZ (powder)*

Innovnano's 3 mol % Yttria-stabilised Zirconia (3YSZ) is available as a binderless and ready-to-press powder or suspension (up to 40 wt.% solid content). Its inherent nanostructure provides enhanced properties for improved end-product characteristics in physically demanding applications.

Chemical analysis

ZrO ₂ + HfO ₂ + Y ₂ O ₃ + Al ₂ O ₃ (wt. %)	> 99.9
HfO ₂	< 3.0
Y ₂ O ₃	5.2 ± 0.2
Al ₂ O ₃	0.4 ± 0.1
SiO ₂	< 0.015
Fe ₂ O ₃	< 0.02

Physical properties

Primary particle D ₅₀ (nm)	~ 50
Powder D ₅₀ (nm)	< 250
Granule D ₅₀ (µm)	~ 60

Mechanical properties after sintering

Grain size (nm)	< 250
Density (g/cm ³)	6.07
Hardness (HV10)	1350
Bending strength (MPa)	1800
Fracture toughness (HV10) (MPa.m ^{0.5})	5

* data relates to HIP

Enhanced material properties for physically demanding applications

Innovnano is a specialist manufacturer of high quality zirconia-based ceramic powders. Using a unique synthesis technology - emulsion detonation synthesis (EDS) - Innovnano guarantees enhanced material properties so that you can expect more from your ceramics.

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