



Zetamix White Zirconia datasheet

PRODUCT DESCRIPTION

Zetamix White Zirconia is a 3%_{mol} stabilized zirconia filament used for 3D printing. The binders mixed with zirconia powder enables to have a flexible and resistant filament usable with classical FFF printers (Fused Filament Fabrication). Printed parts need to be debinded and sintered.

Diameter available: 1.75 mm

Post-process: chemical debinding and sintering

IDENTIFICATION

Trade name	Zetamix White Zirconia
Chemical symbol	$\text{ZrO}_2 \cdot \text{Y}_2\text{O}_3$
Binding proportion (vol) %	50
Binding proportion (mass) %	14
Zirconia proportion (vol) %	50
Zirconia proportion (mass) %	86

PRINTING AND SINTERING RECOMMANDATION

Printing temperature	170-180°C
Solvent debinding	Acetone
Sintering temprature	1475°C under air
Shrinkage	21.5% $\pm$ 1% (x, y and z)
Density	98-99%

TYPICAL PROPERTIES OF FILAMENTS

Specific Gravity [g.cm ⁻³]	3.65
Melt Flow Index [g/10(min)] (@180°C, 5kg, half-die)	10
Melt Volume Rate [cm ³ /10(min)]	2.7

DIELECTRIC PROPERTIES

Dielectric constant * $\rightarrow$ 30 ($\pm$ 0.8)

Loss tangent $\rightarrow \approx 4.10^{-3}$ ($\pm 1.10^{-4}$)

* Dielectric constant at 9.4 GHz. The permittivity value depends on the printing parameters and can decrease if the part is not fully dense
 $\pm$ 5% between -50°C to +110°C

MECHANICAL PROPERTIES ON FINAL PART

Hardness (Hv10) GPa → 10

Bending strength → 400 à 1000 MPa

Disclaimer : The results presented above are for information and do not constitute a legally binding Material Safety Data sheet (MSDS). Moreover, values are significantly dependent on printing setting, debinding parameters, operators experience and surrounding conditions. Any descriptions, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product.