Zetamix Alumina datasheet

PRODUCT DESCRIPTION

Zetamix Alumina is an alumina filament used for 3D printing. The binders mixed with alumina 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 and 2.85 mm
Post-process: debinding and sintering

IDENTIFICATION

Trade name	Zetamix Alumina
Chemical symbol	Al_2O_3
Binder system proportion $_{vol}$%	55
Binder system proportion $_{wt}$%	24,5
Alumina proportion $_{vol}$%	45
Alumina proportion $_{wt}$%	75,5

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PRINTING AND SINTERING RECOMMANDATION

Printing temperature	170-180°C
Solvant debinding	Acetone
Sintering temprature	1550°C under air
Shrinkage	x,y = 20.8% ±1% / z = 23.2% ±1%
Density	98-99%

TYPICAL PROPERTIES OF FILAMENTS

Specific Gravity [$g.cm^{-3}$]	2,5
Melt Flow Rate [g/10(min)]	200
Melt Volume Rate [cm^3/10(min)]	80
Moisture Absorption 24 hours [%]	<0,1%
Moisture Absorption , 7 days [%]	<0,3%
Shore D hardness	40

DIELECTRIC PROPERTIES

Dielectric constant * ➔ 9 (± 0.5)
Loss tangent ➔ ≈ 1.10^{-3} (± 5.10^{-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
± 5% between -50°C to +110°C

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Zetamix by NANOE

MECHANICAL PROPERTIES ON FINAL PART

Hardness (Hv10) GPa ➔ 19

Bending strength ➔ 200 to 500 MPa

Disclaimer : The results presented above are for information and do not constitute a legally binding Material Safety Data sheet (MSDS). Moreover, values are significally 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.

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