



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 $_{\text{vol}}\%$	48
Binder system proportion $_{\text{wt}}\%$	17
Alumina proportion $_{\text{vol}}\%$	52
Alumina proportion $_{\text{wt}}\%$	83

PRINTING AND SINTERING RECOMMANDATIONS

Printing temperature	150°C
Solvent debinding	Acetone
Sintering temperature	1550°C under air
Shrinkage	19,7% (x and y) ; 19,3% (z)
Density	98-99%

TYPICAL PROPERTIES OF THE FILAMENT

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

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 significantly dependent on printing and 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.



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 and 2.85 mm
Post-process: debinding and sintering

IDENTIFICATION

Trade name	Zetamix White Zirconia
Chemical symbol	ZrO ₂ · Y ₂ O ₃
Binder system proportion vol%	50
Binder system proportion wt%	14
Zirconia proportion vol%	50
Zirconia proportion wt%	86

PRINTING AND SINTERING RECOMMANDATIONS

Printing temperature	180°C
Solvent debinding	Acetone
Sintering temperature	1475°C under air
Shrinkage	21,5% (x, y and z)
Density	98-99%

TYPICAL PROPERTIES OF THE FILAMENT

Specific Gravity [g.cm ⁻³]	3,5
Melt Flow Rate [g/10(min)]	50
Melt Volume Rate [cm ³ /10(min)]	14
Moisture Absorption 24 hours [%]	<0,1%
Moisture Absorption 7 days [%]	<0,3%
Shore D hardness	45

MECHANICAL PROPERTIES ON FINAL PART

Hardness (Hv10) GPa → 10

Bending strength → 400 à 1000 MPa

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Zetamix Stainless steel datasheet

PRODUCT DESCRIPTION

Zetamix Stainless Steel is a 316L stainless steel filament used for 3D printing. The binders mixed with stainless steel 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: 1,75mm and 2,85mm
Postprocess : debinding and sintering

IDENTIFICATION

Trade name	Zetamix Stainless steel
Chemical name of raw material	316 L stainless steel
Binding proportion (vol) %	45%
Binding proportion (mass) %	9%
Zirconia proportion (vol) %	55%
Zirconia proportion (mass) %	91%

PRINTING AND SINTERING RECOMMANDATIONS

Printing temperature	170°C
No solvent debinding	-
Sintering temperature	1300°C, under hydrogenated argon
Shrinkage	10%
Density	90-95%

TYPICAL PROPERTIES OF THE FILAMENT

Specific Gravity [g/cm ³]	4,5
MFR [g/10(min)]	250
MVR [cm ³ /10(min)]	56
Moisture Absorption 24 hours [%]	<0,05%
Moisture Absorption , 7 days [%]	<0,1%
Shor D	35

MECHANICAL PROPERTIES ON FINAL PART

Strength limit → 100 MPa

Breaking strength → 300 – 600MPa

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Zetamix Black Zirconia datasheet

PRODUCT DESCRIPTION

Zetamix Black 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: 1,75mm and 2,85mm

Postprocess : debinding and sintering

IDENTIFICATION

Trade name	Zetamix Zirconia
Chemical name of raw material	ZrO ₂ · Y ₂ O ₃
Binding proportion (vol) %	50
Binding proportion (mass) %	15
Zirconia proportion (vol) %	50
Zirconia proportion (mass) %	85

PRINTING AND SINTERING RECOMMANDATIONS

Printing temperature	170°C
Solvent debinding	Acetone
Sintering temperature	1475°C under air
Shrinkage	21,5% (x and y) ; 21,1% (z)
Density	98-99%

TYPICAL PROPERTIES OF THE FILAMENT

Specific Gravity [g/cm ³]	3,5
MFR [g/10(min)]	14
MVR [cm ³ /10(min)]	50
Moisture Absorption 24 hours [%]	<0,1%
Moisture Absorption , 7 days [%]	<0,3%
Shor D	45

MECHANICAL PROPERTIES ON FINAL PART

Hardness GPA → 10

Bending strenght → 400 to 1000 MPa

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Zetamix H13 steel datasheet

PRODUCT DESCRIPTION

Zetamix H13 steel is a filament used for 3D printing. The binders mixed with H13 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: thermal debinding and sintering

IDENTIFICATION

Trade name	Zetamix H13 steel
Other designation	X40CrMoV5-1
Binder system proportion _{vol} %	48
Binder system proportion _{wt} %	10
H13 steel proportion _{vol} %	52
H13 steel proportion _{wt} %	90

PRINTING AND SINTERING RECOMMANDATIONS

Printing temperature	180°C
No chemical debinding	-
Sintering temperature	1400°C under Ar/H ₂ (97.5/2.5) gas
Shrinkage	16-17%
Density	90-91%

TYPICAL PROPERTIES OF THE FILAMENT

Specific Gravity [g.cm ⁻³]	4.5
Melt Flow Rate [g/10(min)] (180°C - 875g – half die)	3,5
Melt Volume Rate [cm ³ /10(min)] (180°C - 875g – half die)	0,8
Moisture Absorption 24 hours [%]	<0,1%
Moisture Absorption 7 days [%]	<0,3%
Shore D hardness	50

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