

Technical Data Sheet (TDS)

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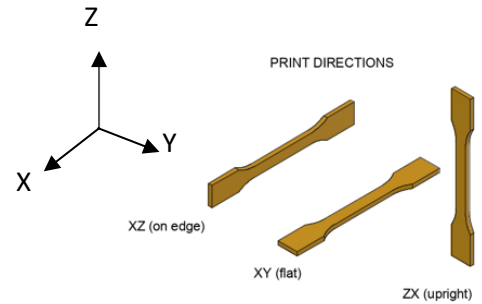


General Information

Thermoplastic Polyimide for fused fabrication filament printing

Product Highlights

- Highest Z-strength
- Inherent flame retardant
- Easy to print Polyimide



Property	Method	Units	Value		
* Print orientation -45°/45°			XY* (flat)	XZ (on edge)	ZX (upright)
Mechanical					
Tensile Strength *	ISO 527 Type 1BA	MPa	83	89	68
Tensile Modulus*	ISO 527 Type 1BA	GPa	2.73	2.89	2.56
Strain at Break *	ISO 527 Type 1BA	%	4.8	4.8	3.5
Tensile Strength **	ASTM D638 type V	MPa	N/A	101	59
Tensile Modulus**	ASTM D638 type V	GPa	N/A	2.82	2.57
Strain at Break **	ASTM D638 type V	%	N/A	4.5	2.7
Tensile Strength ***	ASTM 1708	MPa	N/A	N/A	96
Tensile Modulus***	ASTM 1708	GPa	N/A	N/A	2.41
Strain at Break ***	ASTM 1708	%	N/A	N/A	4.7
Flexural Modulus	ASTM D 790	GPa	TBD	TBD	TBD
Flexural strength @ break	ASTM D 790	MPa	TBD	TBD	TBD
Flexural elongation @ break	ASTM D 790	%	TBD	TBD	TBD
Impact Strength Izod (notched) **	ISO180	KJ/m ²	5.3	5.3	4.3
Impact Strength Izod (unnotched) **	ISO180	KJ/m ²	29	28	26
Thermal					
Flammability 0,8mm	UL 94	-	TBD	TBD	TBD
Flammability 1,6mm	UL 94	-	TBD	TBD	TBD
Temp. of deflection under load (1.80 MPa) *	ISO 75-1/-2	°C	167		
Temp. of deflection under load (0.45 MPa) *	ISO 75-1/-2	°C	175		

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Property	Method	Units	Value	
Thermal				
* Print orientation -45°/45°			XY* Flat	XZ (on edge) and ZX (upright)
CTE (-45/45 infill) -50 °C to 60 °C	ASTM 831	ppm/°C	43.05	46.64
	ASTM 831	ppm/°F	23.92	25.91
CTE (-45/45 infill) 60°C to 120 °C	ASTM 831	ppm/°C	53.95	58.52
	ASTM 831	ppm/°F	29.97	32.51
CTE (-45/45 infill) 120 °C to 190 °C	ASTM 831	ppm/°C	62.51	67.74
	ASTM 831	ppm/°F	34.73	37.63
CTE (90° XZ infill) -50 °C to 60 °C	ASTM 831	ppm/°C	50.15	44.68
	ASTM 831	ppm/°F	27.86	24.82
CTE (90° XZ infill) 60°C to 120 °C	ASTM 831	ppm/°C	61.07	58.30
	ASTM 831	ppm/°F	33.92	32.38
CTE (90° XZ infill) 120 °C to 190 °C	ASTM 831	ppm/°C	68.64	65.23
	ASTM 831	ppm/°F	38.13	36.23
Tg	DMA	°C	195	
Td at 1% loss	DMA	°C	343	
Td	DMA	°C	460	

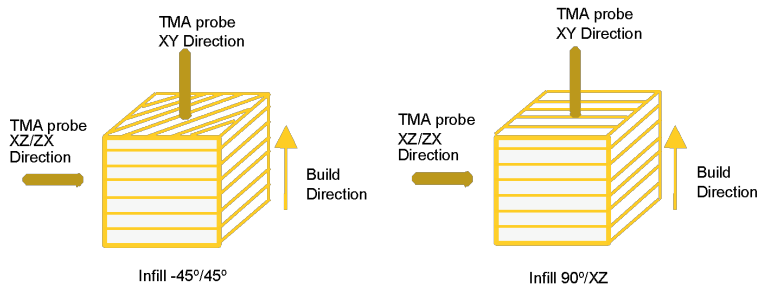
* Printed flat op bed representing XY/XZ/ZX (Intamsys funmat HT)

** XZ/ZX Bars out of water jetted 3D printed plates (Minifactory Ultra)

*** Single wall data on Z-strength (Minifactory Ultra)

- Tnozzle 405°C, Tbuildplate 160°C, Tchamber 160°C
- Layer thickness 0,2mm (30 mm/s), Beadwidth 0,5mm

CTE method ASTM 831



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Property	Method	Units	Value
Physical			
Filament diameter (+/- 0,05mm)	-	mm	1.75
Density	ASTM B923-10	g/cm3	1.51
Electrical			
Dielectric constant (1GHz)	ASTM D150	-	2.87
Dielectric constant (10GHz)	ASTM D150	-	2.85
Dielectric loss (1GHz)	ASTM D150	-	0.0094
Dielectric loss (10GHz)	ASTM D150	-	0.0083
Breakdown voltage	ASTM D149	MV/m	172

Recommended Processing conditions	
Nozzle temperature	390°C-410°C
Bed temperature	120°C-160°C
Chamber temperature	80°C-160°C
Bed material	Glass, Carbon plate
Adhesion promoter	Magigoo HT, Nano polymer adhesive, GeckoTec EZ-Hot
Nozzle diameter	≥ 0.4 mm, Ruby or Hardened preferred
Print speed	15-150 mm/s
Drying instructions filament	>4 hours at 120 °C

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