

PBT Optimal printed on Lisa X

Material's Technical Data Sheet

Polybutylene terephthalate (PBT) enables substantial cost savings in the development and low-volume production of components, especially in the realm of electrical and electronic components. It is known for its high rigidity, excellent detailing, and additional advantageous properties such as electronic insulation and resistance to solvents. This material not only provides the high level of detail quality but also ensures the lowest possible cost per part.



Compatible with:



FEATURES

- The most economical per print in compact SLS (Selective Laser Sintering)
- Low refresh ratio, just 20%
- Exceptionally high stiffness
- Great reproduction of intricate details
- Good mechanical properties
- High resistance to chemicals
- Offers sustainable printing without any powder waste when used as intended

APPLICATIONS

- Cost-effective prototyping
- Production of thermoforming molds
- Utilized in medical and dental applications
- Manufacturing of electrical and electronic components
- Construction of electronic enclosures
- Production of rigid tooling components



Information provided within this document are average values for reference and comparison only. Parameters presented in this specification are subject to change. Final part properties may vary based on printed part design and print orientation. All mechanical tests were carried out on samples conditioned to ISO standards only, at $(23 \pm 2)^{\circ}\text{C}$ and $(50 \pm 5)\%$ r. h.

The presented results are based on printing with fresh, non-replenished powder.

General properties			Test method
Dedicated for	LISA X (fresh powder) ¹		
Nitrogen needed	No		
Colour	black		internal
Granulation	37 µm (D10, Volumetric Distribution, ISO 13320-1; particle size by laser diffraction) 57 µm (D50, Volumetric Distribution, ISO 13320-1; particle size by laser diffraction) 86 µm (D90, Volumetric Distribution, ISO 13320-1; particle size by laser diffraction)	µm	Laser diffraction
Refresh ratio ²	20	%	internal
Bulk density	500 - 600 kg/m ³ (20°C)	kg/m ³	PN-EN ISO 60:2010
Printout density	1.238 - 1.284	g/cm ³	PN-EN ISO 845:2010
Printout water absorption	0.49 - 0.122	%	PN-EN ISO 62:2008

Mechanical properties			Test method
Tensile Strength (X direction)	49.04	MPa	PN-EN ISO 527-1:2012
Tensile Strength (Y direction)	48.28	MPa	PN-EN ISO 527-1:2012
Tensile modulus (X direction)	2718	MPa	PN-EN ISO 527-1:2012
Tensile modulus (Y direction)	2663	MPa	PN-EN ISO 527-1:2012
Elongation at Break (X direction)	2.55	%	PN-EN ISO 527-1:2012
Elongation at Break (Y direction)	2.62	%	PN-EN ISO 527-1:2012
Impact strength X (Charpy - unnotched)	9.18	kJ/m ²	PN-EN ISO 179-1:2010
Impact strength Y (Charpy - unnotched)	11.12	kJ/m ²	PN-EN ISO 179-1:2010

1. Can be used only with Sinterit Studio Advanced.
2. Refresh ratio is the amount of refreshing powder that is required to be mixed after the printing with unsintered material.

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