Datasheet
Flexfill PEBA 90A

fillamentum INDUSTRIAL

Description:

Another Flexfill into the family! This type is based on polyether-block-amide (PEBA), which was specially developed for processing by 3D printing.

Polyamide content ensures very high chemical resistance, especially against car fluids (ASTM oils and fuels), non-polar hydrocarbons, ozone, and certain acids. It is always necessary to try a little piece of filament or object first!

From all the Flexfill types, PEBA excels in low-temperature resistance. High impact strength and flexibility are kept down to -60 °C. It is used with advantages for example for parts of ski boots.

The application for shoe outsoles is possible thanks to high energy return, abrasion resistance and low density. When compared to Flexfill TPU, it exhibits higher dynamic properties, e.g. exceptional energy return, resistance to dynamic stress by cyclic motions, low hysteresis, and low creep. These properties predetermine PEBA especially for objects transferring vibration.

The material has great optical properties, gloss, and transparency. The printed object has smooth and nice surface. The Flexfill PEBA has the lowest density from the whole family.

This material can be used for production of electrical and electronic equipment. It does not contain the restricted substances. The usage for food contact application is not recommended. The material should not be used for medical applications.

For flexible materials, Fillamentum can guarantee maximum deviation of diameter +/- 0.10 mm. During the production, filament is made with the best stability of diameter, roundness, and color.

Physical properties	Typical Value	Test Method	Test Condition
Material density	1.0 g/cm^3	ISO 1183	
Diameter tolerance	± 0.10 mm		
Weight	500 g of filament (+ 230 g spool)		

Mechanical properties	Typical Value	Test Method	Test Condition
Tensile strength	9 MPa	ASTM D638	at 50% elongation
	36 MPa	ASTM D638	at break
Elongation at break	> 1000 %	ASTM D638	
Flexural modulus	65 MPa	ASTM D790	1.27 mm/min
Tear resistance	115 kN/m	ISO 34-1	unnotched
	85 kN/m	ISO 34-1	notched
Abrasion resistance	< 48 mm^3	ISO 4649	10 N, 40 m
Izod impact strength	no break	ASTM D256	23 °C, notched
	no break	ASTM D256	-40 °C, notched
Hardness	42 Shore D	ASTM D2240	

Chemical properties	Typical Value	Test Condition
Polymer base	polyether-block-amide	
Resistance against car fluids, sulfuric and hydrochloric acids, ethanol, toluene, benzene, acetone, ozone	good	25 °C
Resistance against water, oils, alcohols, aromatic oils	low	25 °C

Printing properties	Recommended	Notes
Print temperature	225–245 °C	Recommended settings! It may differ according to the printer and the object. Try your own settings before printing.
Hot pad	70–90 °C	
Bed adhesive	PVA glue, Magigoo PA	Use of adhesive is necessary to prevent damage of the pad!
Type of bed	mirror/glass	Printing on PEI surface can be challenging.
Speed of printing	20–40 mm/s	
Fan speed	0–50 %	In the case of fast cooling, the material is brittle.
Conditions to re-dry	70 °C, 5 hours	Moisture sensitive! Keep in the protective bag. If stringing occurs, the filament is too moist.

Workability of 3D printing filament is at least 12 months from delivery.
The information was processed with the best knowledge of the manufacturer and it is for information only.

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