Datasheet
PETG

fillamentum ESSENTIAL

Description:

Filament made of PETG (polyethylene terephthalate glycol) is widely used for 3D printing for its universal properties and easy processing.

The material has high strength, good hardness, and flexural resistance. It is a great option in the case when the temperature resistance of PLA is not sufficient, and the shrinkage of ABS is inconvenient.

Low fumes are released while processing Fillamentum PETG under recommended conditions. The material has great optical properties, gloss, and transparency.

The chemical resistance is a little bit lower in comparison with CPE HG100. It depends on the specific type of acid, alkali, and alcohol. When compared, CPE HG100 resists to more types of these substances. It is recommended to try the resistance on a little piece of filament or on the printed object.

This material can be used for production of electrical and electronic equipment. It doesn't contain the restricted substances. The filament complies with the requirements for food contact applications.

Fillamentum guarantees high precision of filament dimensions within the tolerance +/- 0.05 mm. During the production, the filament is produced with the best stability of the diameter, roundness, and colour.

Physical properties	Typical Value	Test Method	Test Condition
Material density	1.27 g/cm^3	ASTM D792	
Diameter tolerance	± 0.05 mm		
Weight	1000 g of filament (+ 250 g spool)		

Mechanical properties	Typical Value	Test Method	Test Condition
Tensile strength	50 MPa	ASTM D638	at yield, 50 mm/min
	26 MPa	ASTM D638	at break, 50 mm/min
Elongation at break	120 %	ASTM D638	50 mm/min
Flexural strength	71 MPa	ASTM D790	1.27 mm/min
Flexural modulus	2150 MPa	ASTM D790	1.27 mm/min
Izod impact strength	85 J/m	ASTM D256	23 °C, notched
Rockwell hardness	105	ASTM D785	R-Scale

Thermal properties	Typical Value	Test Method	Test Condition
Heat distortion temperature	70 °C	ASTM D648	0.455 MPa
	62 °C	ASTM D648	1.820 MPa

Optical properties	Typical Value	Test Method	Test Condition
Haze	< 1.0 %	ASTM D1003	
Transmittance	90 %	ASTM D1003	

Chemical properties	Typical Value	Test Condition
Polymer base	polyethylene terephthalate glycol	
Resistance against water, acids, alkalis, alcohols	good	25 °C
Resistance against acetone, oils, greases, car fluids, ozone	low	25 °C

Printing properties	Recommended	Notes
Print temperature	235–255 °C	Recommended settings! It may differ according to the printer and the object. Try your own settings before printing.
Hot pad	65–75 °C	
Bed adhesive	Magigoo	Use of adhesive is necessary to prevent damage of the pad!
Fan speed	0–30 %	In the case of fast cooling, the material is brittle.
Conditions to re-dry	65 °C, 3–4 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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