Technical Data Sheet

Ultrafuse PC GF30

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General information

Components

Polycarbonate based filament filled with 30% glass fibers for Fused Filament Fabrication.

Product Description

Ultrafuse® PC GF30 is polycarbonate, reinforced with 30% glass fiber content. The fibers in this material are specially designed for 3D-printing filaments and are compatible with a wide range of FFF 3D-printers. The extreme stiffness makes this material highly suitable for demanding applications. Ultrafuse® PC GF30 delivers superior strength and good temperature resistance. With its resilience to UV light and its flame retardancy and V0 verification it is perfectly suitable for various industrial applications.

Delivery form and warehousing

Ultrafuse® PC GF30 filament should be stored at 15 - 25°C in its originally sealed package in a clean and dry environment. If the recommended storage conditions are observed the products will have a minimum shelf life of 12 months.

For you information

When melted, Ultrafuse® PC GF30 filament can be abrasive due to its glass reinforcement. Printing with Ultrafuse® PC GF30 may reduce brass nozzles and extruder driving wheels' lifetime. For a better experience, using hardened steel nozzles and extruder driving wheels is advised.

Product safety

Recommended: Process materials in a well ventilated room, or use professional extraction systems. For further and more detailed information please consult the corresponding material safety data sheets.

Notice

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

Recommended 3D-Print processing parameters	
Nozzle Temperature	280 – 330 °C / 137.8 – 165.6 °F
Build Chamber Temperature	-
Bed Temperature	80 – 100 °C / 26.7 – 37.8 °F
Bed Material	PC adhesive
Nozzle Diameter	≥ 0.6 mm
Print Speed	30 - 60 mm/s

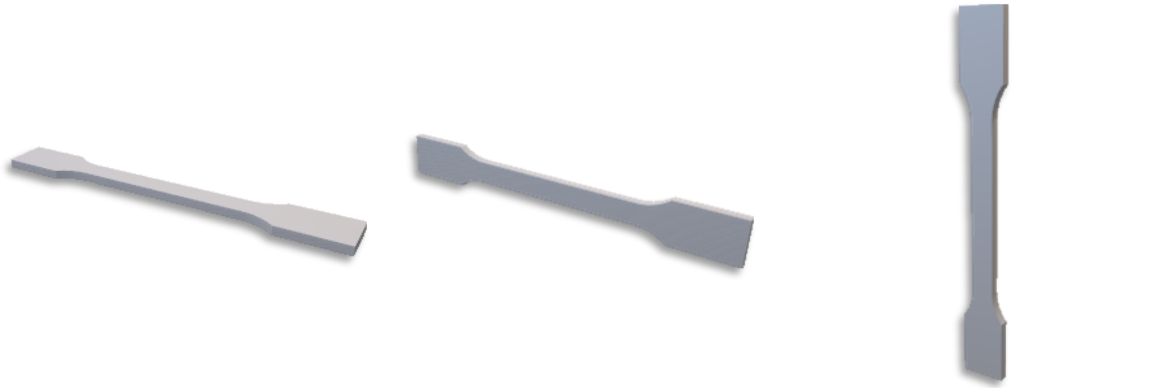
Drying Recommendations	
Drying recommendations to ensure printability	100 °C in a hot air dryer or vacuum oven for 4 to 16 hours

Please note: To ensure constant material properties the material should always be kept dry.

General Properties		Standard
Printed Part Density	1176 kg/m^3 / 73.4 lb/ft^3	ISO 1183-1

Thermal Properties		Standard
HDT at 1.8 MPa	124 °C / 51.1 °F	ISO 75-2
HDT at 0.45 MPa	134 °C / 56.7 °F	ISO 75-2
Glass Transition Temperature	259 °C / 126.1 °F	ISO 11357-2
Melting Temperature	142 °C / 61.1 °F	ISO 11357-3
Melt Volume Rate	26 cm^3/10 min / 1.6 in^3/10 min (300 °C, 2.16 kg)	ISO 1133
Flame class rating	V0 @ 1.5 mm and 3.0 mm thickness	UL 94

Mechanical Properties



Print direction	Standard	XY	XZ	ZX
		Flat	On its edge	Upright
Tensile strength	ISO 527	36.1 MPa / 5.3 ksi	-	11.2 MPa / 1.6 ksi
Elongation at Break	ISO 527	2.4 %	-	1.1 %
Young's Modulus	ISO 527	2665 MPa / 386.5 ksi	-	1231 MPa / 178.5 ksi
Flexural Strength	ISO 178	63.4 MPa / 92 ksi	78.8 MPa / 11.4 ksi	19 MPa / 2.8 ksi
Flexural Modulus	ISO 178	2690 MPa / 390.2 ksi	3450 MPa / 500.4 ksi	934 MPa / 135.5 ksi
Flexural Elongation at Break	ISO 178	3.2 %	2.9 %	2.5 %
Impact Strength Charpy (notched)	ISO 179-2	6.1 kJ/m^2	6.5 kJ/m^2	1.8 kJ/m^2
Impact Strength Charpy (unnotched)	ISO 179-2	17.1 kJ/m^2	18.9 kJ/m^2	3.7 kJ/m^2
Impact Strength Izod (notched)	ISO 180	5.6 kJ/m^2	5.4 kJ/m^2	2.1 kJ/m^2
Impact Strength Izod (unnotched)	ISO 180	13.9 kJ/m^2	17.8 kJ/m^2	3.4 kJ/m^2