



Print this page 3D Printing

New Businesses

PC+ABS-GF15

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3D printer filament

Product Description

Clariant 15% Glass Fiber Reinforced PC+ABS (PC+ABS-GF15) is created by adding 15% glass fibers to a Polycarbonate + Acrylonitrile Butadiene Styrene (PC+ABS) polymer blend to provide a strong and tough material with improved resistance to warpage during printing. Clariant additives are added via a Renol[®] masterbatch to improve the heat stability and resistance to thermo-oxidative degradation and yellowing.

Benefits

- Strong and tough engineering thermoplastic
- High impact strength
- High heat resistance
- Good low temperature ductility
- Glass reinforcement helps minimize warping during printing
- Reduced thermo-oxidative degradation
- Minimized undesired yellowing due to ultraviolet light

Applications*

- Mechanical and technical application parts that require strength and toughness
- Prototypes
- Tools, jigs, fixtures

*Subject to detailed product specifications.

Color Range Standard

- Black

ColorWorks[®] ColorForward[®] consumer color directions 2019

- MADE IN HUMAN - Protect the core (red)
- DO NOT DISTURB - ἀταραξία von has fidanken (green blue)

ColorWorks[®] ColorForward[®] consumer color directions 2020

- EYE AM WATCHED - Catch me if you can (orange)

Printing Parameters

- Print Temperature = 260-285°C
- Print Speed = 20-50 mm/s
- Bed Adhesion = a thin coating of PVP glue on glass or carbon fiber
- Bed Temperature = ideally heated up to 110°C (use an enclosed chamber if possible)
- Fan Settings = low

Note: parameters are dependent on printer used; Clariant tests were performed on Ultimaker S5 and 3ntr A4 V3 printers.

Typical Property Values

Property	Typical Values			Units	Test Method	Test Specimen
	black	fidanken ^a	natural			
MECHANICAL PROPERTIES						
Tensile stress at yield, 50 mm/min				MPa	ISO 527	Injection molded
	n/a	n/a		MPa	ISO 527	3D printed XY / flat at 280°C
	n/a	n/a		MPa	ISO 527	3D printed XZ / on edge at 280°C
	n/a	15		MPa	ISO 527	3D printed ZX / upright at 280°C
Tensile stress at break, 50 mm/min	78			MPa	ISO 527	Injection molded
	49	49		MPa	ISO 527	3D printed XY / flat at 280°C
	65	58		MPa	ISO 527	3D printed XZ / on

					edge at 280°C
	21	19	MPa	ISO 527	3D printed ZX / upright at 280°C
Tensile elongation at yield, 50 mm/min			%	ISO 527	Injection molded
	n/a	n/a	%	ISO 527	3D printed XY / flat at 280°C
	n/a	n/a	%	ISO 527	3D printed XZ / on edge at 280°C
	n/a	0.5	%	ISO 527	3D printed ZX / upright at 280°C
Tensile elongation at break, 50 mm/min	6		%	ISO 527	Injection molded
	1.3	2.1	%	ISO 527	3D printed XY / flat at 280°C
	2.3	1.8	%	ISO 527	3D printed XZ / on edge at 280°C
	0.8	0.7	%	ISO 527	3D printed ZX / upright at 280°C
Tensile modulus (modulus of elasticity), 1 mm/min			MPa	ISO 527	Injection molded
	4449	3480	MPa	ISO 527	3D printed XY / flat at 280°C
	4571	4082	MPa	ISO 527	3D printed XZ / on edge at 280°C
	2231	1885	MPa	ISO 527	3D printed ZX / upright at 280°C
Flexural modulus	4410		MPa	ISO 178	injection molded
Flexural strength	122		MPa	ISO 178	Injection molded
Izod impact notched	12		kJ/m ²	ISO 180	Injection molded
Charpy impact notched	13		kJ/m ²	ISO 179	Injection molded
	32	26	kJ/m ²	ISO 179	3D printed XY / flat at 280°C
THERMAL PROPERTIES					
Melting point				ISO 11357, DSC ^b	
Glass transition temperature	112, 145		°C	ISO 11357, DSC ^b	
Heat deflection temperature at 1.8 MPa (A)	120		°C	ISO 75	Injection molded
	125	121	°C	ISO 75	3D printed XY / flat at 280°C
Heat deflection temperature at 0.45 MPa (B)	134		°C	ISO 75	Injection molded
	131	125	°C	ISO 75	3D printed XY / flat at 280°C
GENERAL PROPERTIES					
Density	1251		kg/m ³	ISO 1183	
Volume			cm ³	ISO 1183	
pH					1% in H ₂ O
Water absorption	0.41		%	ISO 62	24 hours at 23°C
Water content - coulometric Karl Fischer			µg/g	ISO 12937	after drying at 120°C for 2 hours
Water content	0.02		%	ISO 15512	after drying at 120°C for 2 hours
non-volatile-matter content			%	ISO 3251	

^a. Organic based color. ^b. DSC = Differential Scanning Calorimetry at 10°C/minute.

Note: results are generated according to the valid testing standards indicated above and the standard operating procedures used by the testing facilities.

Packaging and Handling

Delivery form

1.75 mm and 2.85 mm diameter 3D printer filament.

Packaging

1 kg and 5 kg spools of 3D printer filament. Custom sizes are available upon request.

Storage

Ideally store the 3D printer filament in a cool, dry place at temperatures between 5 to 25°C in a sealed container with the provided Clariant Desi Pak[®] desiccant bag. If the 3D printer filament has been exposed to moisture, please dry at 100-110°C for 3-4 hours with a vacuum or desiccant drying system if possible. Minimum shelf life is 1 year from the date of shipping when properly stored.

Safety

Contact Us;

Please contact us for safety and regulatory details or the Material Safety Data Sheet (MSDS).

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