



Print this page 3D Printing

New Businesses

ESD safe PC+ABS 3D printer filament

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Product Description

Benefits

Printing Parameters

- Print Temperature = 260-285°C
- Print Speed = 20-60 mm/s
- Bed Adhesion = PVP based glue or a polycarbonate/PC+ABS specific type commercial adhesive (e.g. Magigoo PC) on glass or carbon fiber
- Bed Temperature = ideally heated up to 110°C (use an enclosed chamber if possible)
- Fan Settings = off to low

Note: parameters are dependent on printer used; Clariant tests were performed on an Ultimaker 3 extended, an Ultimaker S5 and a Bondtech modified Intamsys HT Pro printer.

Typical Property Values

Property	Typical Values	Units	Test Method	Test Specimen
ESD				
MECHANICAL PROPERTIES				
Tensile stress at yield, 50 mm/min		MPa	ISO 527	Injection molded
	57	MPa	ISO 527	3D printed XY / flat at 280°C
	60	MPa	ISO 527	3D printed XZ / on edge at 280°C
Tensile stress at break, 50 mm/min	--	MPa	ISO 527	3D printed ZX / upright at 280°C
	54	MPa	ISO 527	3D printed XY / flat at 280°C
	58	MPa	ISO 527	3D printed XZ / on edge at 280°C
Tensile elongation at yield, 50 mm/min	4.6	%	ISO 527	3D printed XY / flat at 280°C
	4.3	%	ISO 527	3D printed XZ / on edge at 280°C
		%	ISO 527	3D printed ZX / upright at 280°C
Tensile elongation at break, 50 mm/min		%	ISO 527	Injection molded
	7.1	%	ISO 527	3D printed XY / flat at 280°C
	4.5	%	ISO 527	3D printed XZ / on edge at 280°C
	1.0	%	ISO 527	3D printed ZX / upright at 280°C
Tensile modulus (modulus of elasticity), 1 mm/min		MPa	ISO 527	Injection molded
	2484	MPa	ISO 527	3D printed XY / flat at 280°C
	2466	MPa	ISO 527	3D printed XZ / on edge at 280°C
	2088	MPa	ISO 527	3D printed ZX / upright at 280°C

Izod impact notched		kJ/m^2	ISO 180	Injection molded
Charpy impact notched		kJ/m^2	ISO 179	Injection molded
	11	kJ/m^2	ISO 179	3D printed XY / flat at 280°C
Charpy impact unnotched	65	kJ/m^2	ISO 179	3D printed XY / flat at 280°C
ELECTRICAL PROPERTIES				
Volume resistivity	9.9×10^{12}	ohms•cm		Injection molded
	$2 \times 10^{11} - 5 \times 10^{11}$	ohms•cm		3D printed XY / flat at 260°C
Surface resistivity	6×10^{12}	ohms/sq		Injection molded
	$2 \times 10^9 - 9 \times 10^9$	ohms/sq		3D printed XY / flat at 260°C
THERMAL PROPERTIES				
Melting point		°C	ISO 11357, DSC ^b	
Glass transition temperature	112, 141	°C	ISO 11357, DSC ^b	
Heat deflection temperature at 1.8 MPa (A)		°C	ISO 75	Injection molded
	127	°C	ISO 75	3D printed XY / flat at 280°C
Heat deflection temperature at 0.45 MPa (B)		°C	ISO 75	Injection molded
	133	°C	ISO 75	3D printed XY / flat at 280°C
GENERAL PROPERTIES				
Density	1163	kg/m^3	ISO 1183	
pH	6.0			1% in H ₂ O
Water absorption		%	ISO 62	24 hours at 23°C
Water content - coulometric Karl Fischer	< 100	$\mu\text{g/g}$	ISO 12937	after drying at 100°C for 4 hours
Water content		%	ISO 15512	after drying at 120°C for 2 hours
non-volatile-matter content	> 21	%	ISO 351	

^a. Inorganic pigment 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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