Product Data Sheet 3D Printing **New Businesses**

Polyamide 6

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3D Printer Filament

Product Description

Clariant Polyamide 6 3D printer filament is made of a good flowing Polyamide 6 that results in high performance 3D printed parts. Clariant Hostanox® P-EPQ® and Nylostab® S-EED® are added via a Renol® masterbatch to improve resistance to thermo-oxidative degradation and minimize yellowing due to ultraviolet radiation.

Benefits

General properties

- Semi-crystalline thermoplastic
- High impact strength
- High stiffness
- Outstanding wear resistance
- Good coefficient of friction
- Very good temperature resistance

Optimized benefits

- Reduced thermo-oxidative degradation
- Increased process stability at high processing temperatures
- Improved long term heat and stability to ultraviolet and visible light

Applications*

- Mechanical and technical application parts that require toughness and durability
- Models
- Prototypes

*Subject to detailed product specifications.

Printing Parameters

- Print Temperature = 220-250°C
- Print Speed = 30-50 mm/s
- Bed Adhesion = directly on glass, polyimide film or a PEI surface all with a thin coating of EVA or PVP glue
- Bed Temperature = ideally heated up to 70°C
- Fan Settings = medium to high

Note: parameters are dependent on printer used; Clariant tests were performed on an Ultimaker 3 extended a 3ntr A4 V2 printer.

Typical Property Values

Property	Typical Values				Units	Test Method	Test Specimen
	white	black	color[a]	natural			
RHEOLOGICAL PROPERTIES							
Melt flow rate, 260°C / 2.16 kg	117	95		119	g/10 min	ISO 1133	
Melt flow rate, 250°C / 2.16 kg				23	g/10 min	ISO 1133	
MECHANICAL PROPERTIES							
Tensile stress at yield, 50 mm/min	76	78		75	MPa	ISO 527	Injection molded
Tensile elongation at break, 50 mm/min	30	20		19	%	ISO 527	Injection molded

Flexural modulus	2320	2480	2490	MPa	ISO 178	Injection molded
Flexural strength	93	101	96	MPa	ISO 178	Injection molded
Izod impact strength notched	2.9	4.0	2.8	MPa	ISO 180	Injection molded
Charpy impact strength notched			5330	J/m^2	ISO 180	Injection molded
THERMAL PROPERTIES						
Melting point			221	°C	ISO 11357, DSC[b]	
Glass transition temperature			n/a	°C	ISO 11357, DSC[b]	
Heat deflection temperature at 1.8 MPa (A)	57	58	55	°C	ISO 75	Injection molded
Heat deflection temperature at 0.45 MPa (B)	146	165	175	°C	ISO 75	Injection molded
Heat deflection temperature at 0.45 MPa (B)				°C	ISO 75	3D printed XY / flat
GENERAL PROPERTIES						
Density	1143	1141	1130	kg/m^3	ISO 1183	

[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.

Available Colors

Standard Color Range

- White
- Black
- Grey

ColorWorks® ColorForward® consumer color directions 2019

- MADE IN HUMAN - Protect the core (red)

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 80°C for at least 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 & MSDS

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

www.clariant.com

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