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

Polyamide 12

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3D printer filament

Product Description

Clariant Polyamide 12 3D printer filament uses a good flowing Polyamide 12 . Polyamide 12 is often desired due to its better moisture resistance compared to Polyamide 6. Clariant improves the capabilities of Polyamide 12 via a Renol® masterbatch using Clariant Hostanox® P-EPQ® and Nylostab® S-EED®.

Benefits

General properties

- Semi-crystalline thermoplastic
- Strong and tough engineering thermoplastic
- High impact strength

Optimized benefits

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

Recommended Applications

- Mechanical and technical application parts

*Subject to detailed product specifications.

Printing Parameters

- Print Temperature = 190-230°C
- Print Speed = 20-40 mm/s
- Bed Adhesion = directly on glass, polyimide film or a directly on a PEI surface
- 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 a 3ntr A4 V2 printer.

Typical Property Values

Property	Typical Values				Units	Test Method	Test Specimen
	white	black	red[a]	natural			
RHEOLOGICAL PROPERTIES							
Melt flow rate, 260°C / 2.16 kg					g/10 min	ISO 1133	
MECHANICAL PROPERTIES							
Tensile stress at yield, 50 mm/min				45	MPa	ISO 527	Injection molded
Tensile stress at break, 50 mm/min				50	MPa	ISO 527	Injection molded
Tensile elongation at break, 50 mm/min				>50	%	ISO 527	Injection molded
Flexural modulus					MPa	ISO 178	Injection molded
Flexural strength					MPa	ISO 178	Injection molded
Izod impact notched				6	MPa	ISO 180	Injection molded
THERMAL PROPERTIES							
Melting point				178	°C	ISO 11357, DSC[b]	
Glass transition temperature					°C	ISO 11357, DSC[b]	
Heat deflection temperature at 1.8 MPa (A)				45	°C	ISO 75	Injection molded
Heat deflection temperature at 0.45 MPa (B)				115	°C	ISO 75	Injection molded
GENERAL PROPERTIES							

Density	1183	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 2 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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