

## PLA for 3D Printing

### *The next generation Biopolymer*

- Ideal for tooling, prototyping and general industrial applications
- Ideal material to replace ABS (odourless)
- Machinable
- High mechanical and impact resistance
- Consistent diameter and extremely round
- Reduced breakage for longer printing performance
- High temperature resistance (180°C melting point after annealing)

Size Specifications <sup>[a]</sup>		Units	Test Method
Nominal Diameter	1.75 / 2.85	mm	-
Diameter Tolerances	±0.05 / ±0.15	mm	-
Mechanical Properties		Units	Test Method
Tensile Modulus	2400 ± 40	MPa	ISO 527-1
Tensile Stress at Yield	35.2 ± 0.8	MPa	ISO 527-1
Tensile Stress at Break	30.0 ± 3.0	MPa	ISO 527-1
Tensile Strain at Yield	2.0 ± 0.0	%	ISO 527-1
Tensile Strain at Break	6.0 ± 2.0	%	ISO 527-1
Flexural Strength	68 ± 5	MPa	ISO 178
Flexural Modulus	2120 ± 480	MPa	ISO 178
Izod Impact Strength, notched	10 ± 3	kJ/m <sup>2</sup>	ISO 180

<sup>[a]</sup>Property measured using the filament. All remaining properties are measured using 3D test specimens.

Thermal Properties		Units	Test Method
Melt Mass-Flow Rate	13 ± 2	g/10min	ISO 1133
Heat Deflection (HDT) at 0.455 MPa	135 ± 36	°F	ISO 75
Heat Deflection (HDT) at 1.820 MPa	129 ± 37	°F	ISO 75
Glass Transition, 1Hz	151 – 153	°F	ISO 6721
Coefficient of Thermal Expansion	8 x 10 <sup>-5</sup>	m/m°C	-
Melting Temperature <sup>[a]</sup>	342 ± 41	°F	ISO 11357
VICAT Softening Temperature	135 ± 36	°F	ISO 306
Printer Settings <sup>[b]</sup>		Units	Test Method
Extruder Temperature	392 – 419	°F	-
Plate Temperature	140	°F	-
Ventilation	0 – 50	%	-

<sup>[b]</sup>Recommended settings. For the best results when printing with our filaments, carefully read the 3D printer manufacturer's instructions manual.

### Additional Information

Regulatory Compliance: REACH / RoHs

Spool Weight: 1kg (2.2lbs)

All filaments are supplied in vacuum-sealed packaging containing a desiccant bag

Other sizes, spool weight and packaging are available upon request

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#### Disclaimer:

This information is based on our current knowledge of raw materials and the manufacturing process and refers to the above mentioned products when leaving Volumic 3D. It is solely the customer's responsibility to determine if the product and information in this document are appropriate for the customer's end use. Responsibility for the use, storage, handling and disposal of the products herein is that of the purchaser or end user.