

ULTIMAKER PLA

<u>Chemical Name</u>	Polylactic acid
<u>Description</u>	Our PLA is really easy to print with, it's reliable, gives good surface quality and it's made from renewable sources, so it's biodegradable too. It also works perfectly with Cura material profiles.
<u>Key features</u>	If you want to easily achieve high resolution prints, printing concept models and prototypes when aesthetics and fine details are key, when you're casting metal parts through lost PLA casting, it's perfect for printing in education or in the office, thanks to low ultrafine particle emissions, a heated bed isn't necessary, it works with glue and blue tape as well
<u>Applications</u>	House hold tools, education, show objects, prototyping, architectural models, modelling, toys.
<u>Non suitable for</u>	PLA isn't suitable for medium temperature applications (50°C +) or long term outdoor usage. ABS is a better material for high temperature applications and CPE for outdoor usage.

FILAMENT SPECIFICATIONS

	VALUE	METHOD
<u>Diameter</u>	2.85±0.10 mm	-
<u>Max roundness deviation</u>	0.10 mm	-
<u>Net filament weight</u>	750±2% g	-

COLOR INFORMATION

PRODUCT NUMBER	COLOR	RAL NUMBER
UM9013	PLA Green	6018
UM9014	PLA Black	9005
UM9015	PLA Silver Metallic	9006
UM9016	PLA White	9010
UM9020	PLA Transparent	n/a
UM9021	PLA Orange	2008
UM9022	PLA Blue	5002
UM9023	PLA Magenta	4010
UM9025	PLA Red	3020
UM9026	PLA Yellow	1003
UM9029	PLA Pearl White	1013

MECHANICAL PROPERTIES (*)	TYPICAL VALUE	TEST METHOD
<u>Tensile modulus</u>	2852±87.65 MPa	ISO 527-1
<u>Tensile stress at yield</u>	38.08±0.89 MPa	ISO 527-1
<u>Tensile stress at break</u>	36.28±1.14 MPa	ISO 527-1
<u>Elongation at yield</u>	2.10±0.00 %	ISO 527-1
<u>Elongation at break</u>	2.84±0.19 %	ISO 527-1
<u>Flexural strength</u>	-	-
<u>Flexural modulus</u>	-	-
<u>Izod impact strength, notched (at 23°C)</u>	-	-
<u>Izod impact strength, unnotched (at 23°C)</u>	-	-
<u>Charpy impact strength, notched (at 23°C)</u>	-	-
<u>Hardness (R scale)</u>	-	-
<u>Shore A</u>	-	-
THERMAL PROPERTIES	TYPICAL VALUE	TEST METHOD
<u>Mass flow rate at 260 °C (5kg)</u>	-	-
<u>Heat deflection (HDT) at 0.455 MPa</u>	-	-
<u>Heat deflection (HDT) at 1.82 MPa</u>	-	-
<u>Glass transition</u>	60-65 °C	ISO 11357-2
<u>Coefficient of thermal expansion (flow)</u>	-	-
<u>Coefficient of thermal expansion (xflow)</u>	-	-
<u>Melting temperature</u>	145-160 °C	ISO 11357-3
<u>Thermal shrinkage (hot air, 100 °C, 30min)</u>	-	-
OTHER PROPERTIES	TYPICAL VALUE	TEST METHOD
<u>Specific gravity</u>	1.24	ASTM D1505
<u>Flame classification</u>	-	-

(*) On 3D printed bars, see notes.

TYPICAL PRINTING CONDITIONS

<u>Bed temperature</u>	60-75 °C or cold bed + tape
<u>Printing temperature (0.4 mm nozzle)</u>	210-230 °C
<u>Printing speed guideline (0.4 mm nozzle)</u>	40-80 mm/s

NOTES

Properties reported here are average of a typical batch. The mechanical properties are from tensile bars printed flat at 100% infill under 45 °C, 2 shells, 100% fan speed, middle of the bed, nozzle temp 210 °C, bed temp 60 °C, nozzle diameter 0.4 mm, no bed adhesive, all print speeds are 40 mm/s, layer height 0.1 mm

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VERSION

Version 1.002

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