

# rPLA Filament Technical Data Sheet

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# rPLA

rPLA is a blend of 90% recycled 3D printing material and 10% virgin material, designed to deliver the same exceptional print performance and surface quality as the highest quality virgin materials.

# rPLA Filament

## CHEMICAL COMPOSITION

Polylactic acid (PLA) is a biodegradable thermoplastic polyester derived from renewable resources.

## MATERIAL PROPERTIES

Property	Result
Density	1.24 g/cm <sup>3</sup>
Melt Flow Rate	3 g/10min @ 190°C, 2.16Kg
Melt Flow Rate	7 g/10min @ 210°C, 2.16Kg
Melt Density	1.08 g/cm <sup>3</sup> @ 230°C

## MECHANICAL PROPERTIES

Property	Testing Method	Result
Young's Modulus	ISO 527	3500 Mpa
Tensile Strength At Yield	ISO 527	50 Mpa
Tensile Strength	ISO 527	53 Mpa
Tensile Stress At Break	ISO 527	60 Mpa
Tensile Modulus	ISO 527	3500 Mpa
Elongation At Break	ISO 37	6 %
Bending Modulus	ISO 178	3200 Mpa
Charpy Notched Impact, 23°C	ISO 179	≤5 J/m
Notched Izod Impact	ISO 180	16 J/m
Hardness	ISO 7619	60 Shore Hardness A

Disclaimer: This data sheet provides typical values for reference and comparison purposes only. These values should not be used for quality control purposes or as design specifications. It is important to note that the actual values may vary depending on the printing conditions used. Additionally, the end-use performance of the printed parts will depend on various factors, such as part design, environmental conditions, and printing conditions. It is important to remember that product specifications may change without notice. As a user, it is your responsibility to determine the safety, suitability, and proper disposal/recycling practices of the materials provided by STANDARD PRINT CO. for your specific application. It is also important to note that STANDARD PRINT CO. makes no warranty of any kind, unless announced separately, to the fitness for any use

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or application. Furthermore, STANDARD PRINT CO. cannot be held liable for any damage, injury, or loss resulting from the use of STANDARD PRINT CO. materials in any application. Therefore, we recommend that you exercise caution and carefully evaluate all aspects of your application before using our materials.

## THERMAL PROPERTIES

Property	Testing Method	Result
Glass Transition Temperature (Tg)	DSC	55°C
Vcat Softening Temperature (VST)	DCS	60°C
Heat Deflection Temperature (HDT)	ISO 75	60°C @ 0.45 MPa
Melt Temperature	DCS	155°C

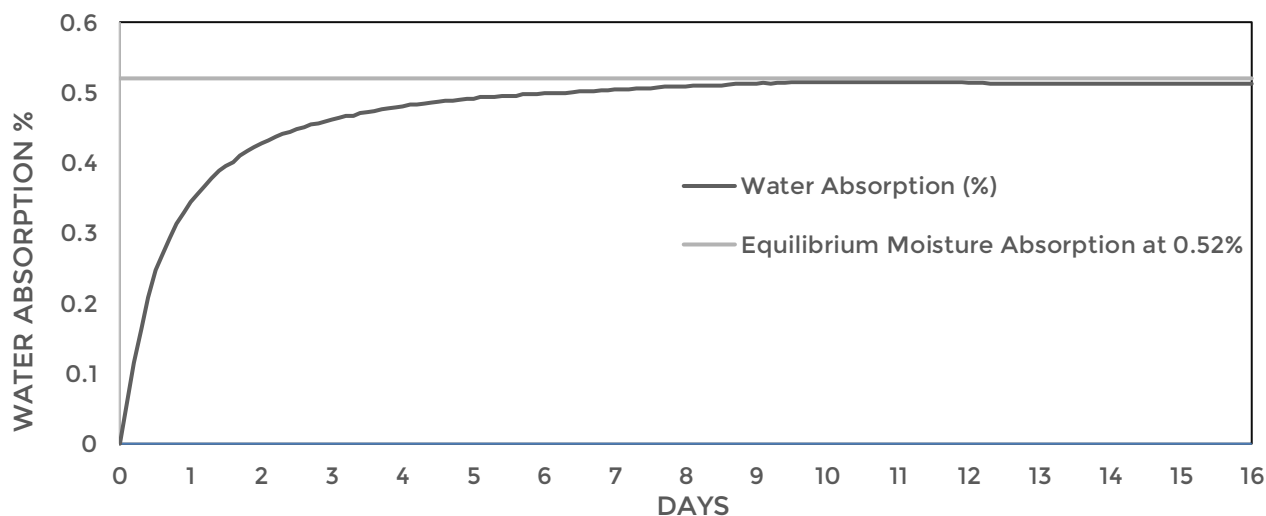
## ENVIRONMENTAL RESISTANCE

UV Resistance Poor

Weather Resistance Poor

## MOISTURE ABSORPTION CURVE

(23°C at 75% RH)



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## CHEMICAL RESISTANCE

Substance	Resistance
Water	Great Resistance
Salt Water	Moderate Resistance
Weak Acids	Poor Resistance
Weak Base	Poor Resistance
Strong Acids	Poor Resistance
Strong Bases	Poor Resistance
Isopropyl Alcohol	Poor Resistance
Ethanol	Poor Resistance
Acetone	Very Poor Resistance

The resistance of each material to different chemicals can vary depending on the specific chemical, concentration, temperature, and duration of exposure. This table provides a general overview of the chemical resistance of PLA, but it is always a good idea to test the compatibility of each material with specific chemicals in the intended application.

## PRINTING PARAMETERS

Printer Type:	Cartesian / Delta
Extruder Type:	Direct Drive/Bowden Tube
Layer Height:	0.1mm - 0.3mm
Fill Density:	0 - 100%
Shell Thickness:	>0.4 mm
Print Speed:	20 - 60 mm/s
Printing Temperature:	180 - 200°C
Build Bed Temperature:	0 - 45°C
Recommended Retraction Speed:	30 - 50 mm/s
Recommended Retraction Distance:	3 - 10 mm
Cooling Fan:	Yes

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## TEST SPECIMEN PRINTING PARAMETERS

Printing Temperature	190
Bed Temperature	45
Shells	2
Top & Bottom Layers	4
Infill	100
Ambient Temperature	27
Cooling Fan	OFF

Disclaimer: The material data properties presented here are for informational purposes only and are based on the materials that we believe we collect to produce our recycled PLA product. As this is a recycled product, the actual material properties may vary from batch to batch and the values presented here should be considered as indicative only. We cannot guarantee the accuracy or completeness of the data presented here and assume no liability for any errors or omissions. Users of our rPLA product are responsible for testing and verifying the suitability of the material for their specific applications.