

## ANTIBACTERIAL PLA

INNOVATEFIL PLA ANTIBACTERIAL is a filament composed of PLA and silver nanoparticles that provide antibacterial properties to the material, avoiding in the printed parts the growth of molds, fungi and all bacteria that cause bad odors, discoloration, stains, deterioration and corrosion.

The antibacterial effectiveness of this filament has been tested and certified in an external laboratory under ISO 22196. The test has been carried out on two bacterial strains: *Staphylococcus aureus* and *Escherichia coli*. The results obtained indicate a reduction in bacterial activity by 99.99% after 24 hours.



Allow for all printers



Antibacterial

	VALUES		UNIT OF MEASUREMENT	STANDARD	
<b>PHYSICAL PROPERTIES</b>					
Chemical name	Polylactic acid with additives				
Density	1,24		g/cm <sup>3</sup>	ASTM D792	
<b>MECHANICAL PROPERTIES<sup>1</sup></b>					
	XY PLANE	ZX PLANE			
Tensile strength	55,5	43,8	MPa	ISO 527	
Traction module	4635,7	3129,8	MPa	ISO 527	
Flexion strength	107	18	MPa	ISO 178	
Flexion module	3189,7	2467,1	MPa	ISO 178	
Elongation at maximum effort	1	1,4	%	ISO 527	
Tensile elongation (until breakage)	1,1	1,4	%	ISO 527	
Elongation by flexion at break	5,2	1,8	%	ISO 178	
Charpy Impact Force (non-notched)	17,5	7	kJ/m <sup>2</sup>	ISO 179	
Hardness	85,4		Shore D	ISO 7619-1	
<b>THERMAL PROPERTIES</b>					
Glass transition temperature (T <sub>g</sub> )	60		°C	ISO 11357	
VICAT B (50 N 50°C/h)	59		°C	ISO 306	
HDT B (0,45 MPa)	60		°C	ISO 75	
<b>PRINTING PROPERTIES</b>					
Printing temperature	205 - 220		°C		
Bed temperature	40 - 60		°C		
Layer fan	100		%		
Material flow	100		%		
Layer height	≥ 0,2		mm		
Nozzle recommendations	≥ 0,4		mm		
Print speed	30 - 50		mm/s		
<b>SIZE</b>					
SIZE	NET WEIGHT	GROSS WEIGHT	DIAMETER	COLOR	PACKAGING
M	750 g	975 g	1,75 mm/2,85 mm	Natural (white)	Innovatefil box

<sup>1</sup> Values obtained on printed specimens, nozzle 0,4 mm, rectilinear infill 100%, layer height 0,2 mm. Formore information please contact us by email at [info@smartmaterials.com](mailto:info@smartmaterials.com) or visit our website [www.smartmaterials3d.com](http://www.smartmaterials3d.com)

NOTICE: The information provided in the data sheets is intended for reference only. It should not be used as design or quality control values. Actual values may differ significantly depending on printing conditions. The final performance of printed components not only depends on materials, design and printing conditions are also important.