TDS Rev. 1.0
Update: 27.03.2020

Technical Data Sheet

ANTIBACTERIAL PLA

IDENTIFICATION	
Commercial name	ANTIBACTERIAL PLA
Raw Material	PLA – Polylactic Acid + additives
Use	3D printing applications

PHYSICAL PROPERTIES	VALUE	STANDARD
Density	1,24 g/cc	ASTM D1505

ANTIBACTERIAL PERFORMANCES – ISO 22196				
Eschirichia Coli				
Sample ID	Bacterial count (CFU / cm2)		Log reduction	% reduction
	t = 0h	t = 24h		
Control	1.4E+04	1.0E+05	-0.87	0.00
Sample 1	1.4E+04	1.2E+04	0.94*	88.43*

Staphylococcus Aureus				
Sample ID	Bacterial count (CFU / cm2)		Log reduction	% reduction
	t = 0h	t = 24h		
Control	1.6E+04	4.2E+03	0.58	73.54
Sample 1	1.6E+04	1.7E+01	2.37*	99.59*

*Reduction calculated versus control at **t=24h**

THERMAL PROPERTIES	VALUE	STANDARD
Melting point	145 – 160 °C	ASTM D3418
Glass Transition Temperature	60 °C	ASTM D3418

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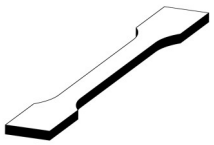
MECHANICAL PROPERTIES

TENSILE TEST – STANDARD ISO 527

Test specimens printed on Ultimaker 2+ with the following setup:
- Nozzle type: standard brass
- Nozzle Temperature: 210 ºC
- Heat bed Temp: 35 ºC
- Print speed: 50 mm/s
- Infill orientation: 45º

xz

xy

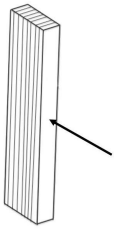


Infill	15%	50%	100%	15%	50%	100%
Tensile strength (Mpa)	12,3	21,8	25,4	29,3	34,6	47,8
Elastic Modulus (Mpa)	1302	1639	2190	1782	2001	2467
Elongation at break (%)	1,80	2,83	2,49	3,87	4,72	4,59
Energy at break (J)	0,5	1,3	1,4	3,1	5	6,6

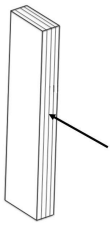
IMPACT TEST IZOD – STANDARD ISO 180

Test specimens printed on Ultimaker 2+ with the following setup:
- Nozzle type: standard brass
- Nozzle Temperature: 210 ºC
- Heat bed Temp: 35 ºC
- Print speed: 50 mm/s
- Infill orientation: 45º

zy- normal



xy- parallel



Infill	15%	50%	100%	15%	50%	100%
Impact strength (KJ/m^2)	10,85	11,81	15,27	11,03	11,34	17,91
Impact Energy (J)	0,43	0,47	0,61	0,44	0,45	0,72

FILAMENT SPECIFICATIONS AND PRINT SETTINGS

Diameter 1.75mm	1.75 ± 0.05 mm
Diameter 2.85mm	2.85 ± 0.05 mm
Roundness deviation	max 2%
Suggested Print Temperature	200 – 215 °C
Suggested Print Speed	40 – 85 mm/s
Suggested Bed Temperature	30 – 50 °C (not necessary)
Cooling fan	100%