



Bilby 3D

MATERIAL DATA SAFETY SHEET

Issued in Australia by Bilby 3D Pty Ltd.

The attached Material Data Safety Sheet has been prepared by the manufacturer outside Australia.

In accordance with Australia WHS regulations the following Australian contact details apply

Section 1: AUSTRALIAN COMPANY DETAILS

In Australia the product is imported and distributed by:
Bilby 3D Pty Ltd

Mailing Address :

Kingsgrove Business Centre, 7/192 Kingsgrove Rd, Kingsgrove NSW 2208

Head Office Address :

Kingsgrove Business Centre, 7/192 Kingsgrove Rd, Kingsgrove NSW 2208

Contact Phone: 1800 847 333

Section 2: AUSTRALIAN EMERGENCY CONTACT

Emergency Contact

In the event of an emergency please contact:

Poisons Information Centre 24 hour Telephone Advice Line on 13 11 26

Section 3: AUSTRALIAN ISSUE DATA

Date of Issue : 1 March 2020

Technical Data Sheet

Spectrum Filaments SILK PLA

Identification	
Trade name	Spectrum SILK PLA
Chemical name	Polylactic Acid
Use	Additive Manufacturing
Origin	Spectrum Group Sp. z o.o.

Filament Specification	
Diameter 1.75	1.75 ± 0.05 mm
“Verify your spool” option	YES



Material properties		
Melt Flow Rate ¹	6 g/10 min	ASTM D1238
Melt temperature	150-180°C	-
Density	1.24 g/cm ³	ASTM D792
Glass transition temperature	55-60°C	ASTM E2092
Water solubility	insoluble	-
Odor	odorless	-
Storage	at temperatures not exceeding 50°C	-



¹Test conditions: T = 210°C; m = 2.16 kg



Guideline for print settings*	
Nozzle temperature	185-215°C
Bed temperature	0-45°C
Active cooling fan	YES (up to 100%)
Layer height**	0.05 - 0.35 mm
Shell thickness**	0.40 – 2.4 mm
Print speed**	40 – 150 mm/s

*Settings are based on a 0,4 mm nozzle.

** The range depends on the geometrical complexity

Mechanical properties	Tensile test		Test Method ASTM D638	
	Printed vertical (Z-axis)		Printed horizontal (X, Y-axis)	
Infill	50 %	100 %	50 %	100 %
Tensile strength (MPa)	12,6	16,2	15,8	23,8
Force at break (MPa)	12,6	16,2	15,7	23,6
Elongation at max force (%)	4,0	3,9	8,8	5,3
Elongation at break (%)	4,0	3,9	11,0	13,3
E modulus (MPa)	313,3	428,7	307,8	453,8
<p>All specimens were printed using the BLIXET B100 Multi 3D printer using following parameters: Nozzle temperature: 210°C Bed temperature: 60°C Printing speed: 45mm/s Number of shells: 4 Infill type: lattice Infill under: 45°</p>				
				

Mechanical properties	Impact test		Test Method ISO 179	
	Charpy - Printed vertical (Z-axis)		Charpy - Printed horizontal (X, Y-axis)	
Infill	50%	100%	50%	100%
Impact strength (J/cm ²)	2,59	4,61	1,38	1,70
Impact energy (mJ)	1000	1900	600	700
<p>All specimens were printed using the BLIXET B100 Multi 3D printer using following parameters: Nozzle temperature: 210°C Bed temperature: 60°C Printing speed: 45mm/s Number of shells: 4 Infill type: lattice Infill under: 45°</p>				
				

Mechanical properties	Flexural test		Test Method ISO 178	
	Printed vertical (Z-axis)		Printed horizontal (X, Y-axis)	
Infill	50%	100%	50%	100%
Flexural modulus (MPa)	1429	1490	1682	2157
Maximum bending stress (MPa)	2,39	23,48	43,75	63,64
Deflection (mm)	0,8	11	1,5	10,5
<p>All specimens were printed using the BLIXET B100 Multi 3D printer using following parameters: Nozzle temperature: 210°C Bed temperature: 60°C Printing speed: 45mm/s Number of shells: 4 Infill type: lattice Infill under: 45°</p>				

Preparation date: 08-05-2019

All shown data are typical properties. Users should confirm results by their own tests.