

## TECHNICAL DATA SHEET

### KEXCELLED PLA K5Silk

<b>Product code:</b>	<b>Revision Number:</b>	<b>Revision date:</b>	<b>TDS No.:</b>
PLA K5Silk	04	12/01/2022	KT04.20.1005

### BRIEF INTRODUCTION

Filament suitable for all commercially available leading brands FDM/FFF Printers.

#### Characteristic:

high gloss finish and silk-like surface | higher impact strength than normal PLA | non-irritating odor.

### IDENTIFICATION OF THE MATERIAL

<b>Trade name</b>	PLA K5Silk
<b>Chemical name</b>	Polylactic Acid
<b>Use</b>	3D Printing
<b>Origin</b>	KEXCELLED

### GUIDELINE FOR PRINT SETTINGS

<b>Nozzle temperature</b>	210~230°C
<b>Bed temperature</b>	30~60°C
<b>Bed modification</b>	Tape or glue below 60°C
<b>Active cooling fan</b>	ON, 50%~100%
<b>Shell thickness</b>	≥0.8mm
<b>Print speed</b>	40-80mm/s

Settings are based on a 0.4mm nozzle.

### MATERIAL PROPERTIES

		Test Method
<b>Melt temperature</b>	~160°C	ISO 11357
<b>Glass transition temperature</b>	~60°C	ISO 11357
<b>Melt flow rate (MFR)<sup>1</sup></b>	5~10g/10min	ISO 1133
<b>Heat deflection temperature(HDT)<sup>2</sup></b>	53°C	ISO 75
<b>Vicat softening temperature(VST)<sup>3</sup></b>	60°C	ISO 306
<b>Density</b>	1.24g/cm <sup>3</sup>	ISO 1183
<b>Odor</b>	Odorless	/
<b>Solubility</b>	Insoluble in water	/

1. test conditions: T= 190°C; m= 2.16kg.

2. test conditions:0.45MPa;120°C/h.

3. test conditions:10N; 120°C/h.

**MECHANICAL PROPERTIES|TENSILE TEST**
**Test Method ISO 527**

All test specimens were printed using an FlashForge Guider 2s under the following conditions:

Printing temperature: 220°C

Heated bed temperature: 60°C

Print speed: 50mm/s

Shell thickness: 1.2mm

Infill under 45°



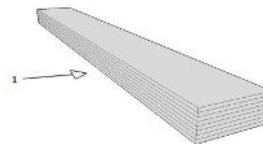
Printed horizontal X,Y-axis

Infill	100%
Tensile strength (Mpa)	31~33
Elongation at break (%)	>30
Emodulus (Mpa)	3900~4100

**MECHANICAL PROPERTIES|IMPACT TEST**
**Test Method ISO 179**

The same conditions as tensile test.

1→impact direction

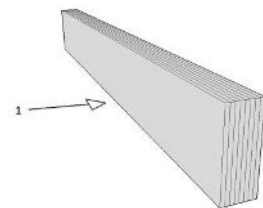


Infill	100%
Impact strength (KJ/m <sup>2</sup> )	17~22
Notch impact strength <sup>1</sup> (KJ/m <sup>2</sup> )	4~6

**MECHANICAL PROPERTIES |FLEXURAL TEST**
**Test Method ISO 178**

The same conditions as tensile test.

1→bending direction



Infill	100%
Maximum force (Mpa)	55~65
Flexural modulus (Mpa)	2000~2200

1. notch type: type A

FILAMENT SPECIFICATION		Test Method
Diameter 1.75mm	1.75±0.03mm	EX1125
Diameter 2.85mm	2.85±0.03mm	EX1125
Diameter 3.00mm	3.00±0.03mm	EX1125
Max roundness deviation (1.75)	0.03mm	EX1125
Max roundness deviation (2.85)	0.03mm	EX1125
Max roundness deviation (3.00)	0.03mm	EX1125
Net weight on reel	1kg	EX1125