

TECHNICAL DATA SHEET

KEXCELLED PLA^{silk}g

Product code:	Revision Number:	Revision date:	TDS No.:
PLA ^{silk} g	01	09/08/2019	KT04.012.0152

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

Trade name	PLA ^{silk} g
Chemical name	Polylactic Acid
Use	3D printing
Origin	KEXCELLED

GUIDELINE FOR PRINT SETTINGS

Nozzle temperature	220±10°C
Bed temperature	0~60°C
Bed modification	Tape or glue below 60°C
Active cooling fan	ON, 100%
Layer height	0.2mm
Shell thickness	≥0.8mm
Print speed	40-80mm/s

Settings are based on a 0.4mm nozzle.

MATERIAL PROPERTIES

		Test Method
Melt temperature	~160°C	ISO 11357
Glass transition temperature	~60°C	ISO 11357
Melt flow rate (MFR)¹	8±2 g/10min	ISO 1133
Heat deflection temperature(HDT)²	52°C	ISO 75
Vicat softening temperature(VST)³	/	ISO 306
density	1.24g/cm ³	ISO 1183
Odor	Odorless	/
Solubility	Insoluble in water	/

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

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: 50°C

Print speed: 50mm/s

Shell thickness: 0.8mm

Infill under 45°

Infill

Tensile strength (Mpa)

Force at break (Mpa)

Elongation at break (%)

E modulus (Mpa)



Printed horizontal X,Y-axis

100%

41.5

/

10

2100

MECHANICAL PROPERTIES|IMPACT TEST

Test Method ISO 179

The same conditions as tensile test.

1→impact direction



Charpy(ep)

Infill

100%

Impact strength (KJ/m²)

22.5

Notch impact strength¹ (KJ/m²)

6

MECHANICAL PROPERTIES |FLEXURAL TEST

Test Method ISO 178

The same conditions as tensile test.

1→bending direction



Normal

Infill

100%

Maximum force (Mpa)

70.5

Flexural modulus (Mpa)

2650

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