

TECHNICAL DATA SHEET

KEXCELLED PLA K5Silk

| | | | |
|----------------------|-------------------------|-----------------------|-----------------|
| Product code: | Revision Number: | Revision date: | TDS No.: |
| 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

| | |
|----------------------|-----------------|
| Trade name | PLA K5Silk |
| Chemical name | Polylactic Acid |
| Use | 3D Printing |
| Origin | KEXCELLED |

GUIDELINE FOR PRINT SETTINGS

| | |
|---------------------------|-------------------------|
| Nozzle temperature | 210~230°C |
| Bed temperature | 30~60°C |
| Bed modification | Tape or glue below 60°C |
| Active cooling fan | ON, 50%~100% |
| 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 | 5~10g/10min | ISO 1133 |
| Heat deflection temperature(HDT)² | 53°C | ISO 75 |
| Vicat softening temperature(VST)³ | 60°C | ISO 306 |
| Density | 1.24g/cm ³ | ISO 1183 |
| Odor | Odorless | / |
| Solubility | 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°



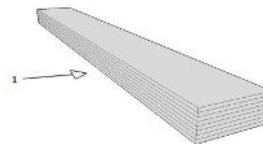
Printed horizontal X,Y-axis

| | |
|-------------------------|-----------|
| 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

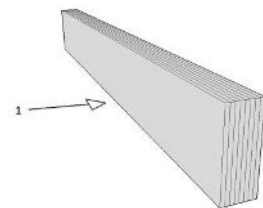


| | |
|---|-------|
| Infill | 100% |
| Impact strength (KJ/m ²) | 17~22 |
| Notch impact strength ¹ (KJ/m ²) | 4~6 |

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 |