

TECHNICAL DATA SHEET

KEXCELLED PLA K5

Product code:	Revision Number:	Revision date:	TDS No.:
PLA K5	02	2/04/2020	KT04.012.0121

CHARACTERISTIC

Environmentally friendly | good interlayer bond | no buckling deformation | high melt flow rate.

IDENTIFICATION OF THE MATERIAL

Trade name	PLA K5
Chemical name	Polylactic Acid
Use	3D printing
Origin	KEXCELLED

GUIDELINE FOR PRINT SETTINGS

Nozzle temperature	205±15°C
Bed temperature	30~60°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	7~15 g/10min	ISO 1133
Heat deflection temperature(HDT)²	57 °C	ISO 75
Vicat softening temperature(VST)³	57 °C	ISO 306
density	1.23~1.26 g/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: 205°C
- Heated bed temperature: 50°C
- Print speed: 50mm/s
- Shell thickness: 0.8mm
- Infill under 45°



Printed Vertical Z-axis

Printed horizontal X,Y-axis

	50%	100%	50%	100%
Infill	50%	100%	50%	100%
Tensile strength (Mpa)	18~25	32~35	32~38	44~48
Elongation at break (%)	3~5	3~5	4~6	4~6

MECHANICAL PROPERTIES|IMPACT TEST
Test Method ISO 179

The same conditions as tensile test.

1→impact direction



	50%	100%	50%	100%
Infill	50%	100%	50%	100%
Impact strength (KJ/m ²)	15~18	22~28	14~18	22~26
Notch impact strength ¹ (KJ/m ²)	2~4	4~6	2~4	4~6

MECHANICAL PROPERTIES |FLEXURAL TEST
Test Method ISO 178

The same conditions as tensile test.

1→bending direction



	50%	100%	50%	100%
Infill	50%	100%	50%	100%
Maximum force (Mpa)	75~78	78~82	82~85	92~98
Flexural modulus (Mpa)	2700~2900	2900~3200	2700~2900	3200~3400

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