

## TECHNICAL DATA SHEET

### KEXCELLED PLA K5

Product code:	Revision Number:	Revision date:	TDS No.:
PLA K5	04	11/01/2022	KT04.20.1001

#### 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	190~220°C
Bed temperature	30~60°C
Bed modification	Tape or glue below 60°C
Active cooling fan	ON, 50%~100%
Layer height	0.2mm
Shell thickness	≥0.8mm
Print speed	40-100mm/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) <sup>1</sup>	6~12 g/10min	ISO 1133
Heat deflection temperature(HDT) <sup>2</sup>	57°C	ISO 75
Vicat softening temperature(VST) <sup>3</sup>	57°C	ISO 306
Density	1.23~1.25g/cm <sup>3</sup>	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: 210°C

Heated bed temperature: 60°C

Print speed: 50mm/s

Shell thickness: 1.2mm

Infill under 45°



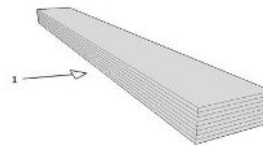
Printed horizontal X,Y-axis

Infill	100%
Tensile strength (Mpa)	36~42
Elongation at break (%)	10~15
E modulus (Mpa)	4500~4800

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

The same conditions as tensile test.

1→impact direction

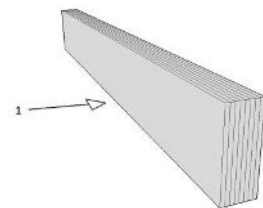


Infill	100%
Impact strength (KJ/m <sup>2</sup> )	25~30
Notch impact strength <sup>1</sup> (KJ/m <sup>2</sup> )	4~8

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

The same conditions as tensile test.

1→bending direction



Infill	100%
Maximum force (Mpa)	70~75
Flexural modulus (Mpa)	2700~3000

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