

TECHNICAL DATA SHEET

KEXCELLED THE K9™ PPA CF15

Product code:	Revision Number:	Revision date:	TDS No.:
THE K9™ PPA CF15	01	02/12/2024	KT098

Characteristic:

High strength | high heat resistance | lower shrinkage

IDENTIFICATION OF THE MATERIAL

Trade name	THE K9™ PPA CF15
Chemical name	Carbon fiber reinforced Polyphthalamide
Use	3D Printing
Origin	KEXCELLED

GUIDELINE FOR PRINT SETTINGS

Nozzle temperature	270~310℃
Bed temperature	90~110℃
Bed modification	Tape or glue
Active cooling fan	0%~50%
Layer height	0.2mm
Shell thickness	≥0.8mm
Print speed	≤250mm/s

Settings are based on a 0.4mm nozzle.

MATERIAL PROPERTIES

		Test Method
Melt temperature	~260℃	ISO 11357
Melt flow rate (MFR)¹	15~20g/10min	ISO 1133
Heat deflection temperature(HDT)²	205℃	ISO 75
Vicat softening temperature(VST)³	225℃	ISO 306
density	1.25~1.27g/cm ³	ISO 1183
Odor	Odorless	/
Solubility	Insoluble in water	/

1. test conditions: T= 270℃; m= 2.16kg.

2. test conditions:0.45MPa;120℃/h.

3. test conditions:10N; 120℃/h.

MECHANICAL PROPERTIES|TENSILE TEST
Test Method ISO 527

All test specimens were printed using a BambuLab X1C under the following conditions:

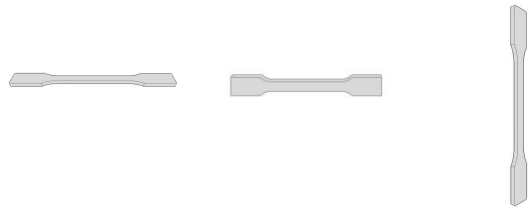
Printing temperature: 290°C

Heated bed temperature: 100°C

Print speed: 81.25mm/s

Shell thickness: 1.2mm

Infill under Concentric circles

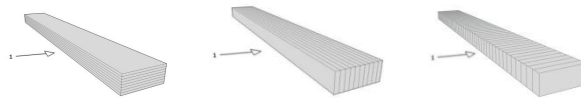


	Printed horizontal X,Y-axis	Printed horizontal X,Z-axis	Printed horizontal Z,X-axis ^{1,2}
Infill	100%	100%	100%
Tensile strength (Mpa)	136~143	165~170	22~27
Elongation at break (%)	5~7	7~9	2~4
E modulus (Mpa)	10000~12000	14000~15000	2100~2500

MECHANICAL PROPERTIES|IMPACT TEST
Test Method ISO 179

The same conditions as tensile test.

1→impact direction

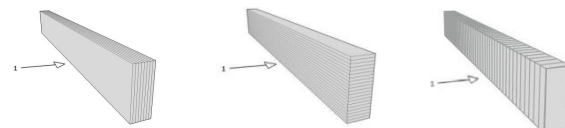


	100%	100%	100%
Infill	100%	100%	100%
Impact strength (KJ/m ²)	30~40	42~49	1~7
Notch impact strength ³ (KJ/m ²)	6~8	9~12	2~4

MECHANICAL PROPERTIES |FLEXURAL TEST
Test Method ISO 178

The same conditions as tensile test.

1→bending direction



	100%	100%	100%
Infill	100%	100%	100%
Maximum force (Mpa)	197~206	278~286	54~66
Flexural modulus (Mpa)	7200~7500	12000~13000	2200~2400

1. Z,X-axis test data are for reference only
2. the stress range of the Z,X-axis modulus: 10~20MPa
3. notch type: type A

*The mechanical properties of nylon and its HDT have a great relationship with its water absorption rate. This table shows its performance in its dry state.

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