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

IDENTFICATION 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.

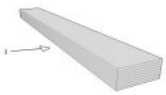
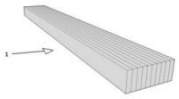
MATERIAL PROPERTIES		Test Method
Melt temperature	~260℃	ISO 11357
Melt flow rate (MFR) [1]	15~20g/10min	ISO 1133
Heat deflection temperature(HDT) [2]	205℃	ISO 75
Vicat softening temperature(VST) [3]	225℃	ISO 306
density	1.25~1.27g/cm^3	ISO 1183
Odor	Odorless	/
Solubility	Insoluble in water	/

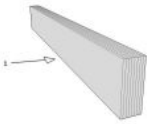
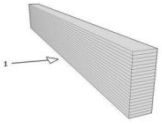
1.test conditions: T= 270℃; m= 2.16kg.

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℃ Heated bed temperature：100℃ 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
Emodulus（Mpa）	10000~12000	14000~15000	2100~2500

MECHANICAL PROPERTIES|IMPACT TEST			Test Method ISO 179
The same conditions as tensile test. 1→impact direction			
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			
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