

## TECHNICAL DATA SHEET

### KEXCELLED PAHT K7CFLM

<b>Product code:</b>	<b>Revision Number:</b>	<b>Revision date:</b>	<b>TDS No.:</b>
PAHT K7CFLM	04	14/01/2022	KT04.20.4104

#### Characteristic:

High strength | high heat resistance | lower shrinkage

#### IDENTIFICATION OF THE MATERIAL

<b>Trade name</b>	PAHT K7CFLM
<b>Chemical name</b>	Carbon fiber reinforced polyamide 12
<b>Use</b>	3D Printing
<b>Origin</b>	KEXCELLED

#### GUIDELINE FOR PRINT SETTINGS

<b>Nozzle temperature</b>	270~290°C
<b>Bed temperature</b>	70~100°C
<b>Bed modification</b>	Tape or glue
<b>Active cooling fan</b>	OFF
<b>Layer height</b>	0.2mm
<b>Shell thickness</b>	≥0.8mm
<b>Print speed</b>	40-80mm/s

Settings are based on a 0.4mm nozzle.

#### MATERIAL PROPERTIES

		Test Method
<b>Melt temperature</b>	~220°C	ISO 11357
<b>Melt flow rate (MFR)<sup>1</sup></b>	8~15g/10min	ISO 1133
<b>Heat deflection temperature(HDT)<sup>2</sup></b>	120°C	ISO 75
<b>Vicat softening temperature(VST)<sup>3</sup></b>	210°C	ISO 306
<b>density</b>	1.15g/cm <sup>3</sup>	ISO 1183
<b>Odor</b>	Odorless	/
<b>Solubility</b>	Insoluble in water	/

1. test conditions: T= 270 °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: 280°C

Heated bed temperature: 100°C

Print speed: 50mm/s

Shell thickness: 1.2mm

Infill under 45°



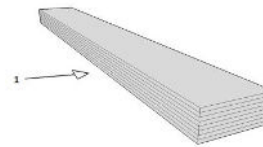
Printed horizontal X,Y-axis

Infill	100%
Tensile strength (Mpa)	80~90
Elongation at break (%)	2~4
E modulus (Mpa)	9000~10000

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

The same conditions as tensile test.

1→impact direction

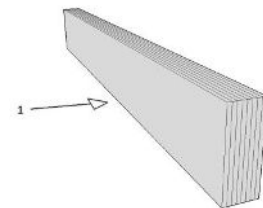


Infill	100%
Impact strength (KJ/m <sup>2</sup> )	20~25
Notch impact strength <sup>1</sup> (KJ/m <sup>2</sup> )	4~6

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

The same conditions as tensile test.

1→bending direction



Infill	100%
Maximum force (Mpa)	120~130
Flexural modulus (Mpa)	6000~8000

1. 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.

<b>FILAMENT SPECIFICATION</b>		<b>Test Method</b>
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