

## TECHNICAL DATA SHEET

### KEXCELLED THE K10™ PC

<b>Product code:</b>	<b>Revision Number:</b>	<b>Revision date:</b>	<b>TDS No.:</b>
THE K10™ PC	03	14/01/2022	KT024

#### Characteristic:

Excellent heat resistance | weather resistance

#### IDENTIFICATION OF THE MATERIAL

<b>Trade name</b>	THE K10™ PC
<b>Chemical name</b>	Polycarbonate
<b>Use</b>	3D Printing
<b>Origin</b>	KEXCELLED

#### GUIDELINE FOR PRINT SETTINGS

<b>Nozzle temperature</b>	310~350℃
<b>Bed temperature</b>	140~180℃
<b>Chamber temperature</b>	80~150℃
<b>Bed modification</b>	NO&High temperature glue
<b>Active cooling fan</b>	OFF
<b>Layer height</b>	0.2mm
<b>Shell thickness</b>	≥0.8mm
<b>Print speed</b>	30-60mm/s

Settings are based on a 0.4mm nozzle.

#### MATERIAL PROPERTIES

		Test Method
<b>Melt temperature</b>	~280℃	ISO 11357
<b>Melt flow rate (MFR)<sup>1</sup></b>	30~35g/10min	ISO 1133
<b>Heat deflection temperature(HDT)<sup>2</sup></b>	163℃	ISO 75
<b>Vicat softening temperature(VST)<sup>3</sup></b>	176℃	ISO 306
<b>density</b>	1.18~1.20g/cm <sup>3</sup>	ISO 1183
<b>Odor</b>	Odorless	/
<b>Solubility</b>	Insoluble in water	/

1.test conditions: T= 330℃; 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 an INTAMSYS FUNMAT HT under the following conditions:

Printing temperature: 340°C

Heated bed temperature: 150°C

Chamber temperature: 90°C

Print speed: 50mm/s

Shell thickness: 1.2mm

Infill under 45°



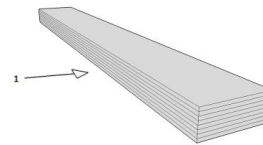
Printed horizontal X,Y-axis

Infill	100%
Tensile strength (Mpa)	65~70
Elongation at break (%)	8~12
E modulus (Mpa)	3700~4000

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

The same conditions as tensile test.

1→impact direction

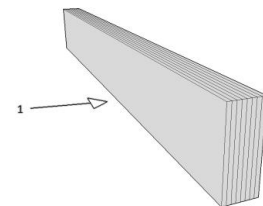


Infill	100%
Impact strength (KJ/m <sup>2</sup> )	43~47
Notch impact strength <sup>1</sup> (KJ/m <sup>2</sup> )	3~6

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

The same conditions as tensile test.

1→bending direction



Infill	100%
Maximum force (Mpa)	97~105
Flexural modulus (Mpa)	2300~2600

1. notch type: type A

<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