

TECHNICAL DATA SHEET

KEXCELLED THE K12™ PEEK Ultra

Product code:	Revision Number:	Revision date:	TDS No.:
THE K12™ PEEK Ultra	01	24/01/2022	KT058

Characteristic:

Excellent heat resistance | high strength | chemical resistance |
Radiation resistant | flame resistance | Excellent interlayer bond

IDENTIFICATION OF THE MATERIAL

Trade name	THE K12™ PEEK Ultra
Chemical name	Polyetheretherketone
Use	3D Printing
Origin	KEXCELLED

GUIDELINE FOR PRINT SETTINGS

Nozzle temperature	390~430℃
Bed temperature	110~220℃
Chamber temperature	40~60℃ or 90~200℃
Bed modification	NO
Active cooling fan	0~100%
Layer height	0.2mm
Shell thickness	≥0.8mm
Print speed	30~60mm/s

Settings are based on a 0.4mm nozzle.

MATERIAL PROPERTIES

		Test Method
Melt temperature	~340℃	ISO 11357
Melt flow rate (MFR) ¹	10~15 g/10min	ISO 1133
Heat deflection temperature(HDT) ²	148℃(amorphous state)	ISO 75
Vicat softening temperature(VST) ³	/	ISO 306
density	1.28g/cm ³	ISO 1183
Odor	Odorless	/
Solubility	Insoluble in water	/

1. test conditions: T= 380℃; m= 5kg.

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: 405°C

Heated bed temperature: 100°C

Chamber temperature: 50°C

Print speed: 50mm/s

Shell thickness: 1.2mm

Infill under 45°



Printed horizontal X,Y-axis

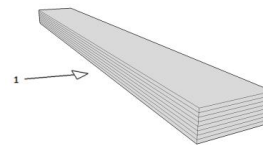
Infill	100%
Tensile strength (Mpa)	75~90
Elongation at break (%)	11~15
Emodulus (Mpa)	4500~5000

MECHANICAL PROPERTIES|IMPACT TEST

Test Method ISO 179

The same conditions as tensile test.

1→impact direction



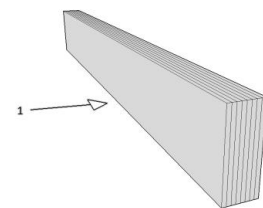
Infill	100%
Impact strength (KJ/m ²)	85~100
Notch impact strength ¹ (KJ/m ²)	30~38

MECHANICAL PROPERTIES |FLEXURAL TEST

Test Method ISO 178

The same conditions as tensile test.

1→bending direction



Infill	100%
Maximum force (Mpa)	100~120
Flexural modulus (Mpa)	2400~2800

1. notch type: type A

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