

# TECHNICAL DATA SHEET

## PEEK

### BRIEF INTRODUCTION

PEEK as a representative material of special plastics, it has excellent mechanical property, heat resistance, self-extinguishing, corrosion resistance of most chemical reagents and solvents, radiation resistance, also has good bio-compatibility. Combined with those excellent properties, an ideal filament for printing precision electronic parts, parts that require special high temperature and flame resistance, as well as some medical devices

### CHARACTERISTIC

Excellent heat resistance|High strength|Chemical resistance|Excellent toughness|Flame resistance|Biocompatibility

### IDENTIFICATION OF THE MATERIAL

<b>Trade name</b>	PEEK
<b>Chemical name</b>	Polyetheretherketone
<b>Application</b>	3D PRINTING

### GUIDELINE FOR PRINT SETTINGS

<b>Nozzle temperature</b>	425±25°C
<b>Bed temperature</b>	100~160°C
<b>Chamber temperature</b>	80~140°C
<b>Bed modification</b>	NO
<b>Active cooling fan</b>	OFF
<b>Layer height</b>	0.2mm
<b>Shell thickness</b>	≥0.8mm
<b>Print speed</b>	20~50mm/s

Settings are based on a 0.4mm nozzle.

### MATERIAL PROPERTIES

		Test Method
<b>Melt temperature</b>	~340°C	ISO 11357
<b>Melt flow rate (MFR) <sup>1</sup></b>	14~18 g/10min	ISO 1133
<b>Heat deflection temperature(HDT)<sub>2</sub></b>	150 °C(amorphous state) 170 °C(crystalline state)	ISO 75
<b>Vicat softening temperature(VST)<sup>3</sup></b>	/	ISO 306
<b>Density</b>	1.28 g/cm <sup>3</sup>	ISO 1183
<b>Odor</b>	Odorless	/
<b>Solubility</b>	Insoluble in water	/

1. Test conditions: T= 380°C; m= 5 kg.

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 INTAMSYS FUNMAT HT,

under the following conditions:

Printing temperature: 420°C

Heated bed temperature: 100°C

Chamber temperature: 80°C

Print speed: 30 mm/s

Shell thickness: 0.8mm

Infill under 45.

Infill 100%

Tensile strength (Mpa) 70~80

Elongation at break (%) 4~6

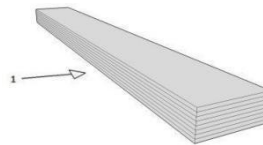


**MECHANICAL PROPERTIES|IMPACT TEST**

**Test Method ISO 179**

The same conditions as tensile test.

1→Impact direction



Infill 100%

Impact strength (KJ/m<sup>2</sup>) 60~70

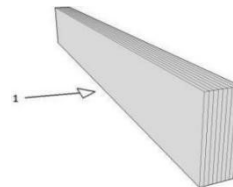
Notch impact strength<sup>1</sup> (KJ/m<sup>2</sup>) 14~18

**MECHANICAL PROPERTIES |FLEXURAL TEST**

**Test Method ISO 178**

The same conditions as tensile test.

1→Bending direction



Infill 100%

Maximum force (Mpa) 110~120

Flexural modulus (Mpa) 2400~2600

1. Notch Type: Type A

**FILAMENT SPECIFICATION****Test Method**

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

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