

Technical Data Sheet

OSSFILA™ PEEK

OSF-FLC

3D Printer Filament

Ossfila™ PEEK is a medical grade 3D printing material suitable for creating patient specific orthopaedic implants or surgical tools.

The production of Ossfila™ PEEK follows ISO 13485 and ISO 14644. The raw materials meet the requirements of ISO 10993. The final products meet the requirements of USP Class VI and ISO 10993-6:2016.

PRODUCT FEATURES

- USP Class VI certified
- ISO 10993-6:2016 certified
- Excellent biocompatibility
- Excellent mechanical strength
- Non-toxic
- Stable to autoclave, gamma radiation, E-beam, and ethylene oxide

APPLICATIONS

Ossfila™ PEEK is recommended for creating patient specific orthopaedic implants, spinal implants, dental implants, and surgical tools.

IMPORTANT NOTICE

- The Filament is intended to be used as a raw material to additively manufacture medical devices, surgical tools and/or equipment parts via an FDM 3D printer.
- Store the Filament in a dry cool place and away from heat. Absorption of moisture could affect filament quality.
- All recommendations in this document are based on the operations conducted by the manufacturer's facility. While every effort has been made to ensure safety, accuracy and reliability, it is imperative that the user verifies and/or validates the process parameters with their own facility's equipment and conditions if deemed necessary.

PRODUCT SPECIFICATIONS

Key Materials	Polyether ether ketone
Filament Diameter	1.75 mm $\pm$ 0.05 mm
Net Weight	500 g
Colour	Natural
Storage Condition	Sealed, cool and dry place
Drying Condition	120°C for 4 hours
Features	Biocompatible, medical grade

RECOMMENDED PRINTER SETTINGS

Extrusion/ Nozzle Temperature	390 – 410°C
Build Plate Temperature	130 – 150°C
Chamber Temperature	90°C or higher as appropriate
Adhesion Type	Glue or Kapton® film
Nozzle Diameter	> 0.4 mm

MECHANICAL PROPERTIES

	XZ Orientation	XY Orientation	Method
<i>Tensile Properties</i>			
Ultimate Tensile Strength	78 MPa	86 MPa	ASTM D638 (Type IV)
Young's Modulus	3030 MPa	3250 MPa	ASTM D638 (Type IV)
Elongation	6%	5%	ASTM D638 (Type IV)
<i>Flexural Properties</i>			
Flexural Strength	146 MPa	151 MPa	ASTM D790
Flexural Modulus	3110 MPa	3570 MPa	ASTM D790

THERMAL PROPERTIES

	Test Value	Method
Melting Point	343°C	ISO 11357
Glass Transition Temperature	143°C	ISO 11357

Note:

1. The test articles of the mechanical test are 3D printed objects printed to the dimension specified in ASTM D638 and ASTM D790.
2. Test articles were printed with 100% infill and line as the infill pattern.
3. It is recommended that the 3D printer equips with a closed chamber and a heating build plate which could reach at least 130°C.
4. It is recommended to use a raft instead of a brim for build plate adhesion.
5. It is recommended to dry the Filament at 120°C for 4 hours before printing for best performance. If the mentioned conditions cannot be achieved, dry the filament at 50°C for 24 hours.

DISCLAIMER

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For the latest specifications, additional product information and sales and distribution locations, please contact us at phone: (852) 3188 9234 or email: info@ossfila.com