

3D PRINTER FILAMENTS

for medical use



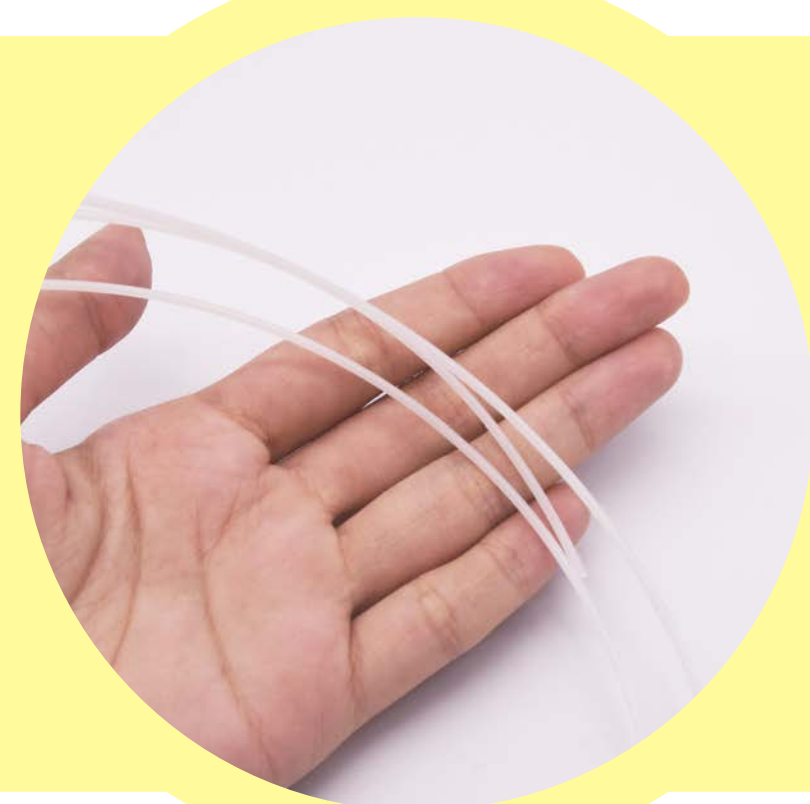
BONLECULE MEDICAL GRADE BIOACTIVE 3D PRINTER FILAMENT

OSSFILA® Bonlecule is bioactive and is a PMMA-based biomaterial with evenly distributed nano-hydroxyapatite of around 20nm in length. Bonlecule is ideal for printing implants and medical devices. Printed objects share similar mechanical property to native bone and demonstrate excellent osteoconductivity, facilitating the reparative growth of native bone.

Suggested Applications:

Cranioplasty, oral maxillofacial implants, parietal bone, spinal interbody fusion cage, radius, ulna, carpal bones, metacarpal bones and phalanges, and many more.

- Excellent bone-like mechanical properties and osteoconductivity
- Biocompatible & Non-toxic (ISO 10993-5:2009, ISO 10993-6:2016, ISO 10993:10:2021, ISO 10993-11:2017, ISO 10993-23:2021, USP 43 <88> Class VI and REACH)
- Radiopaque – visible to X-Ray and MRI imaging
- Sterilizable by gamma radiation, e-beam and ethylene oxide
- Compatible with standard Fused filament fabrication (FFF) machines



Specifications

- Color
- Diameter
- Flexural strength (ASTM D790)
- Flexural modulus (ASTM D790)

White
1.75 mm $\pm$ 0.05 mm
56 MPa
1.77 GPa

Recommended Print Settings

- Print Temperature
- Bed Temperature
- Chamber Temperature
- Adhesion Type

220 – 240°C
80 – 90°C
Optional (70 – 90°C)
Glue or Kapton® film



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MEDICAL PMMA (ACRYLIC) 3D PRINTER FILAMENT

OSSFILA® Medical PMMA Filament is a biocompatible, non-toxic and chemical resistant 3D printing material perfect for printing implants, medical devices and medical equipment. It is an alternative to polycarbonate (PC) with more transparent and high-gloss finish.

Suggested Applications:

Surgical instrument and training models including body fluid container, microfluidic device, pump impeller, stirrers, and many more.



- High optical transparency
- Outstanding impact resistance polishability & UV tolerance
- Resistant to most chemicals especially acids
- Biocompatible and non-toxic (ISO 10993-5:2009, ISO 10993-7:2008 /Amd 1:2019, ISO 10993-10:2010, ISO 10993-10:2021, ISO 11737-2:2019 and USP 43 <88> Class VI)
- Sterilizable by gamma radiation, e-beam and ethylene oxide
- Ready to use - stored in vacuum sealed aluminum bag with desiccants
- Compatible with standard Fused filament fabrication (FFF) machines

Specifications

- Color
- Diameter
- Flexural strength (ASTM D790)
- Flexural modulus (ASTM D790)

Transparent
1.75 mm $\pm$ 0.05 mm
62 MPa
1.68 GPa

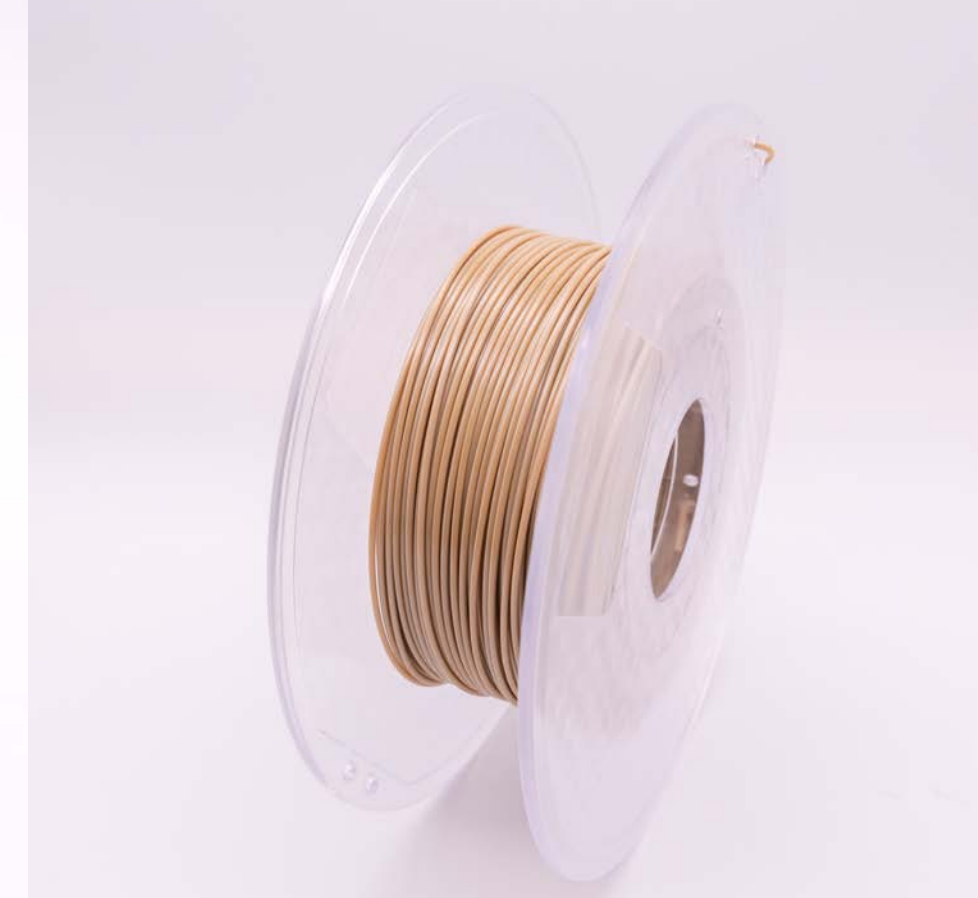
Recommended Print Settings

- Print Temperature
- Bed Temperature
- Chamber Temperature
- Adhesion Type

240 – 260°C
80 – 90°C
Recommended (50 – 80°C)
Glue or Kapton® film



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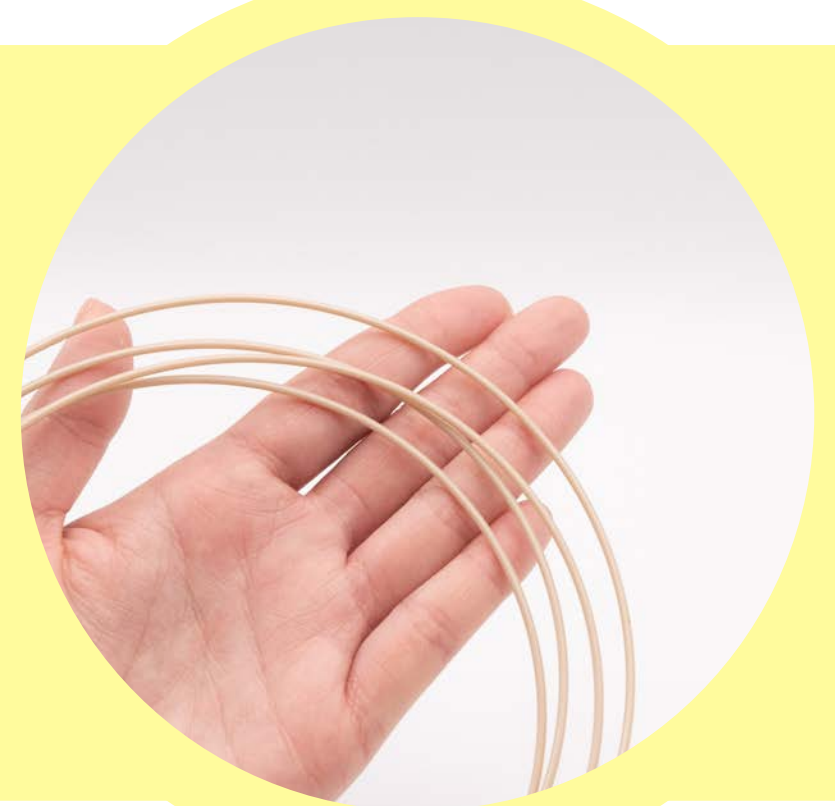
MEDICAL PEEK 3D PRINTER FILAMENT

OSSFILA® Medical PEEK Filament is a high-performance, biocompatible, non-toxic and chemical resistant 3D printing material perfect for printing medical devices and implants. The high quality of the medical grade PEEK ensure utmost safety to produce implants. Ossfila Medical PEEK filament is one of the best choices on the market.

Suggested Applications:

Implants, surgical instrument and other high quality medical equipment including body fluid container, microfluidic device, pump impeller, stirrers, and many more.

- High-performance thermoplastic for medical application
- Excellent mechanical properties
- Outstanding impact resistance polishability & UV tolerance
- Resistant to most chemicals especially acids
- Biocompatible and non-toxic (ISO 10993-5:2009, 10993-6:2016, 10993-10:2021, 10993-23:2021, ISO 11737-2:2019 and USP 43 <88> Class VI)
- Sterilizable by gamma radiation, e-beam, autoclave and ethylene oxide
- Ready to use - stored in vacuum sealed aluminum bag with desiccants
- Compatible with all professional FFF machines



Specifications

- Color
- Diameter
- Flexural strength (ASTM D790)
- Flexural modulus (ASTM D790)

Natural
1.75 mm $\pm$ 0.05 mm
151 MPa
3.57 GPa

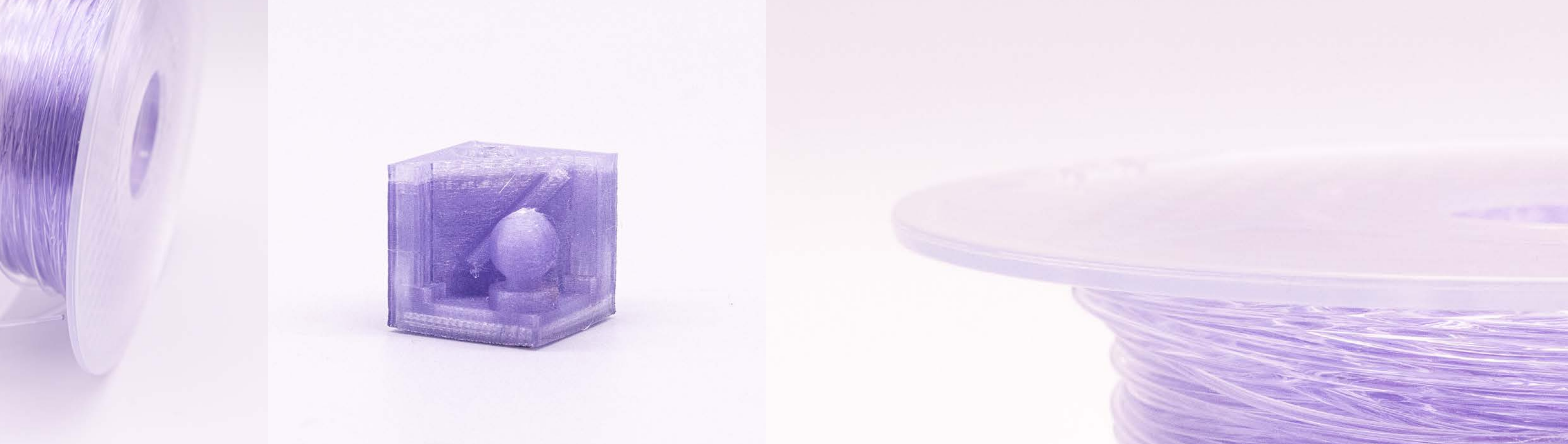
Recommended Print Settings

- Print Temperature
- Bed Temperature
- Chamber Temperature
- Adhesion Type

390 – 410°C
130 – 150°C
90°C or higher as appropriate
Glue or Kapton© film



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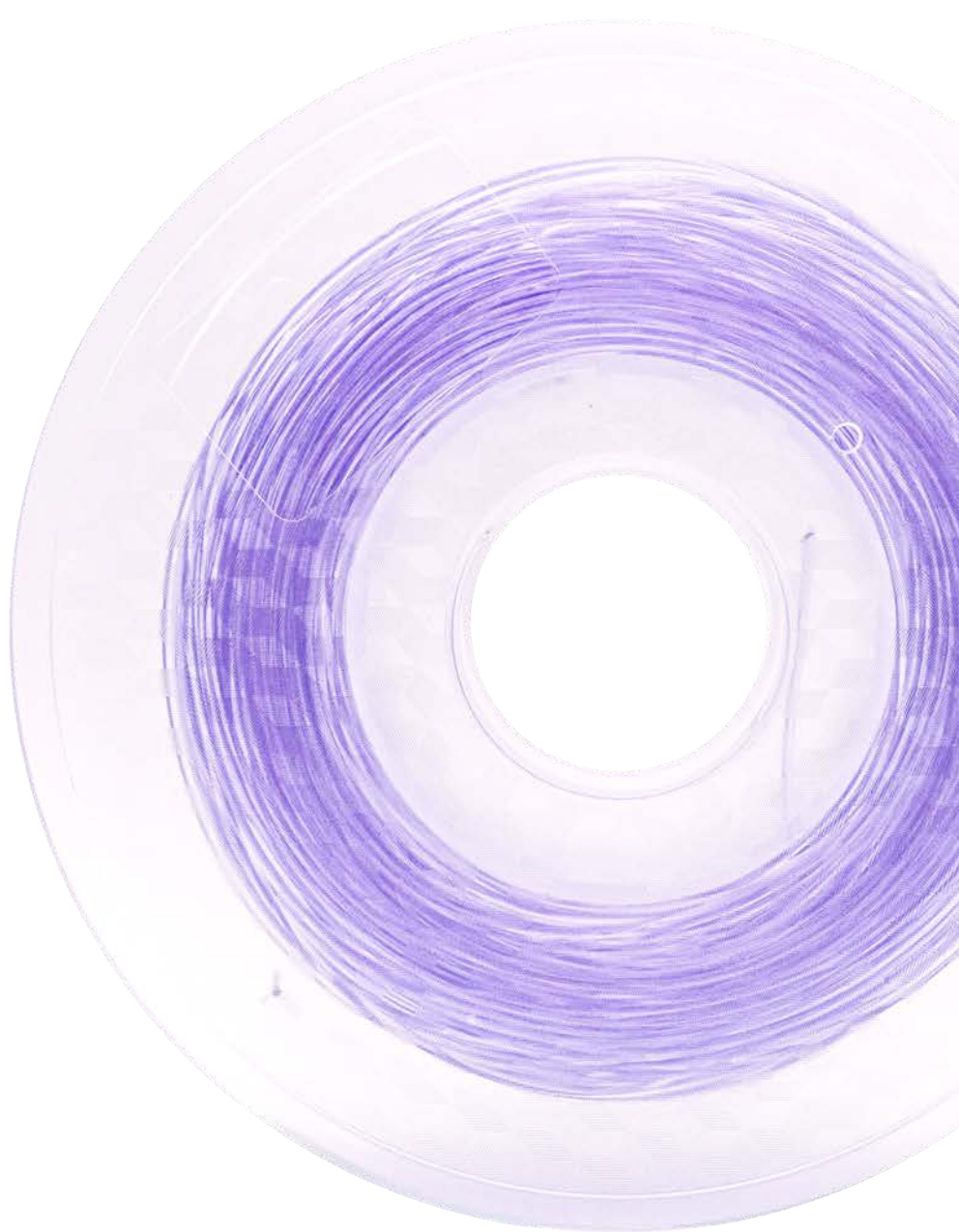


MEDICAL POLYCARBONATE 3D PRINTER FILAMENT

OSSFILA® Medical Polycarbonate Filament is a biocompatible, non-toxic and chemical resistant 3D printing material perfect for printing surgical guides, medical devices and medical equipment. It is an alternative to PMMA with better impact resistance, rigidity and drillability.

Suggested Applications:

Surgical instrument and training models including body fluid container, microfluidic device, pump impeller, stirrers, and many more.



- High optical transparency
- Outstanding impact resistance polishability & UV tolerance
- Resistant to most chemicals especially acids
- Biocompatible and non-toxic (USP 43 <88> Class VI)
- Sterilizable by gamma radiation, e-beam, autoclave and ethylene oxide
- Ready to use - stored in vacuum sealed aluminum bag with desiccants
- Compatible with standard Fused filament fabrication (FFF) machines

Specifications

- Color
- Diameter
- Flexural strength (ASTM D790)
- Flexural modulus (ASTM D790)

Purple Transparent
1.75 mm ± 0.05 mm
86.3 MPa
2.01 GPa

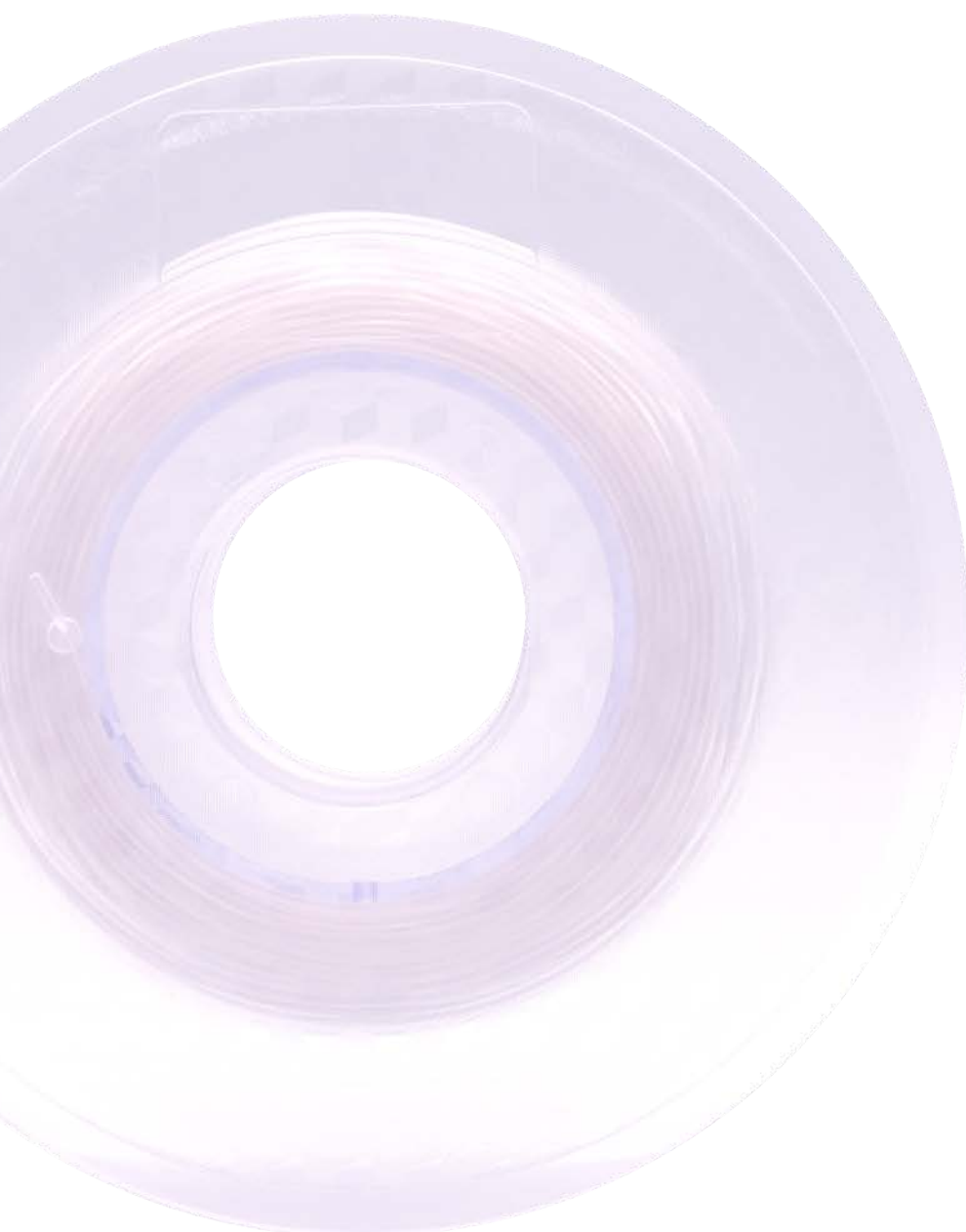
Recommended Print Settings

- Print Temperature
- Bed Temperature
- Chamber Temperature
- Adhesion Type

260 – 280°C
100 – 120°C
90°C or higher as appropriate
Glue or Kapton© film



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MEDICAL PETG 3D PRINTER FILAMENT

OSSFILA® PETG is a biocompatible filament renowned for its exceptional durability, strength, and clarity. Its superior chemical and impact resistance makes it ideal for producing reliable prints that can withstand challenging environments. Additionally, PETG is a cost-effective option that delivers high performance without compromise. This makes it an attractive choice for those seeking both durability and precision in their 3D printing projects.

Suggested Applications:

Surgical instruments and training models. Customized surgical guides, dental crowns and prostheses, and many more.

- High toughness and impact resistance
- Biocompatible & Non-toxic (USP 43 <88> Class VI)
- Sterilizable by gamma radiation, e-beam and ethylene oxide
- Ready to use - stored in vacuum sealed aluminum bag with desiccants
- VITA shades are available: A1, A2, A3, B1, C2 (for on demand shades, please contact info@novusls.com)
- Compatible with standard Fused filament fabrication (FFF) machines



Specifications

- Color
- Diameter
- Flexural strength (ASTM D790)
- Flexural modulus (ASTM D790)

Transparent, Pink, VITA A1, A2, A3, B1, C2
1.75 mm $\pm$ 0.05 mm
58 MPa
1.54 GPa

Recommended Print Settings

- Print Temperature
- Bed Temperature
- Chamber Temperature
- Adhesion Type

230 – 250°C
60 – 80°C
Not Required
Glue or Kapton© film



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MEDICAL PLLA 3D PRINTER FILAMENT

OSSFILA® Poly(L-lactide) Acid (PLLA) is a biodegradable biomaterial designed for medical devices and pharmaceutical applications. Ideal for 3D printing implants, scaffolds, and medical devices, PLLA offers mechanical properties that closely resemble those of native bone, with a resorption rate of approximately 3 years, making it an excellent choice for creating reliable and effective medical solutions for bone repair.

Suggested Applications:

Cranioplasty, oral maxillofacial implants, parietal bone, spinal interbody fusion cage, radius, ulna, carpal bones, metacarpal bones and phalanges, and many more.



- Excellent bone-like mechanical properties
- Bioresorbable
- Biocompatible & non-toxic (USP 43 <88> Class VI)
- Sterilizable by gamma radiation, e-beam and ethylene oxide
- Ready to use - stored in vacuum sealed aluminum bag with desiccants
- Compatible with standard Fused filament fabrication (FFF) machines

Specifications

- Color
- Diameter
- Flexural strength (ASTM D790)
- Flexural modulus (ASTM D790)

Natural
1.75 mm $\pm$ 0.05 mm
68 MPa
2.46 GPa

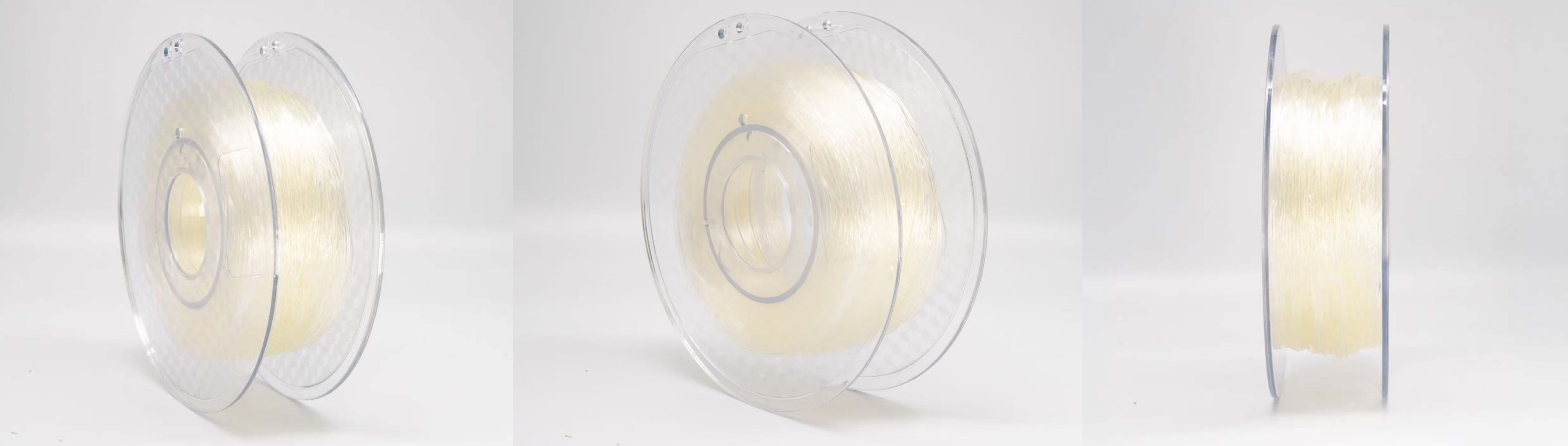
Recommended Print Settings

- Print Temperature
- Bed Temperature
- Chamber Temperature
- Adhesion Type

180 – 220°C
50 – 70°C
Not Required
Glue or Kapton© film



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MEDICAL TPU 3D PRINTER FILAMENT

OSSFILA® Thermoplastic Polyurethane (TPU) is a flexible, medical-grade elastomer formulated for medical devices and wearable healthcare applications. Ideal for 3D printing soft-tissue models, surgical guides, cushioning components, and wearable parts, TPU provides high elasticity, excellent abrasion and tear resistance, and long-term dimensional stability, making it an excellent choice for creating reliable and durable medical solutions that require flexibility and impact absorption.

Suggested Applications:

Soft-tissue prosthetics, flexible surgical guides, joint pads, wearable device housings and straps, dental soft-tissue models, and many more.

- High elasticity and flexibility with excellent abrasion and tear resistance
- Biocompatible & non-toxic
- Sterilizable by gamma radiation, e-beam and ethylene oxide
- Available in multiple Shore hardnesses to suit soft-to-firm requirements
- Ready to use - stored in vacuum sealed aluminum bag with desiccants
- Custom colors and translucency on request
- Compatible with standard Fused Filament Fabrication (FFF) machines



Specifications

- Color
- Diameter
- Shore hardness
- Flexural strength (ASTM D790)
- Flexural modulus (ASTM D790)

Transparent
1.75 mm $\pm$ 0.05 mm
90A
3.96 MPa
7.09 MPa

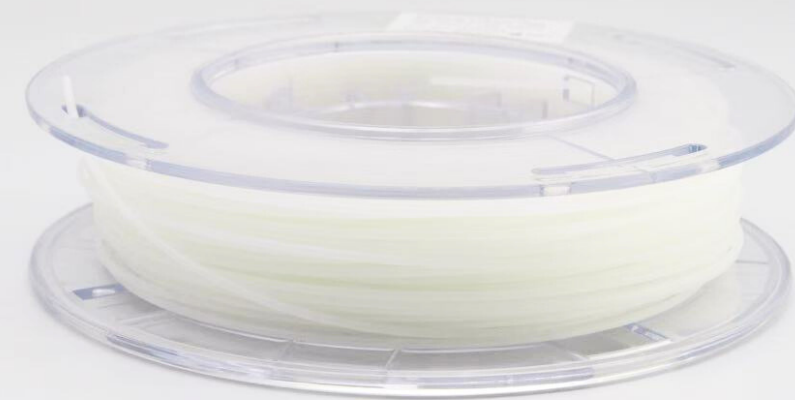
Recommended Print Settings

- Print Temperature
- Bed Temperature
- Chamber Temperature
- Adhesion Type

220 – 240°C
35 – 55°C
Not Required
Glue or Kapton© film



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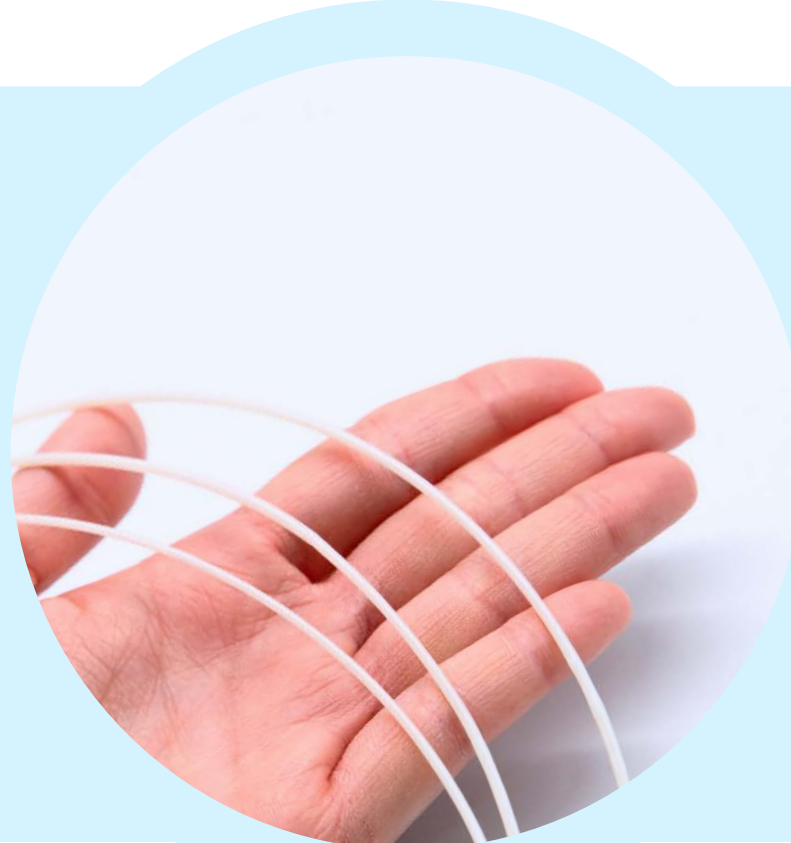


MEDICAL PCL 3D PRINTER FILAMENT

OSSFILA® Polycaprolactone (PCL) is a biodegradable, medical-grade aliphatic polyester formulated for medical devices, tissue engineering, and controlled-release applications. PCL offers a low melting point, excellent shapeability, and predictable slow hydrolytic degradation, making it an excellent choice for reliable and adaptable medical solutions that require gradual resorption and long-term biocompatibility.

Suggested Applications:

Resorbable scaffolds for bone and cartilage repair, implants, tissue-engineering constructs, degradable wound dressings, surgical molds and templates, and many more.



- Low melting point and excellent thermoformability
- Predictable slow hydrolytic degradation suitable for resorbable applications
- Biocompatible & non-toxic
- Sterilizable by gamma radiation, e-beam and ethylene oxide
- Ready to use - stored in vacuum sealed aluminum bag with desiccants
- Compatible with standard Fused filament fabrication (FFF) machines

Specifications

- Color
- Diameter

White
1.75 mm $\pm$ 0.05 mm

Recommended Print Settings

- Print Temperature
- Bed Temperature
- Chamber Temperature
- Adhesion Type

120 – 140°C
20 – 40°C
Not Required
Glue or Kapton© film



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