PCL CAPROLACTISSE 100 TECHNICAL DATA SHEET

Lattice Services
IMAGINE.PRINT.HEAL.

PCL or caprolactone is a white, flexible, semi-crystalline thermoplastic. Once implanted, it degrades slowly over 36 months. The polymer has a glass transition temperature below room temperature, which gives it a certain suppleness and flexibility. As a result, this material is widely used to make scaffolds for tissue engineering, osteosynthesis plates and screws, and sutures.

PRODUCT IDENTIFICATION

Product	PCL 100 - Caprolactone
Reference	PF - CPL
Technology	FDM - Filament deposition
Diameters	1.75 mm - 2.85 mm
Color	White
Storage	After opening, store in a dry, ventilated place. Vacuum-pack coils in a dry place. If hermetically sealed, store in a refrigerator at 4°C.

ADVANTAGES

· Bioresorbable
· Biocompatible
· Implantable*
· Long degradation time

APPLICATIONS

· Scaffolds for tissue engineering
· Osteosynthesis plates and screws

**The implantability of the filament depends on compliance with the regulatory process in force in the customer's country.*

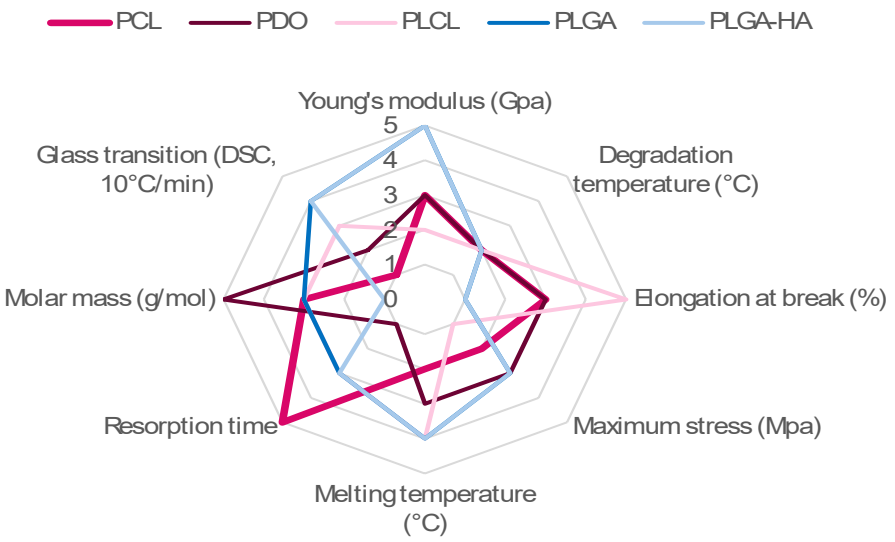
TECHNICAL PROPERTIES

Melting range *(DSC, 10°C/min)*	50 – 70°C
Glass transition	< -50°C
Degradation temperature	>250°C
Maximum tensile stress	20 MPA
Elongation at break	180 %
Young's modulus	~ 0.55 GPA
Molar mass	70,000 - 90,000 g/mol

PRINTING PROPERTIES

Printing temperature	160-200°C
Build plate temperature	40-45°C
Print speed	20-60 mm/s
Cooling fan speed	100 %

PERFORMANCE PROFILE OF OUR FILAMENTS



USE INDEX

For optimum print quality, we recommend drying the product in an oven for 48 hours at 40°C.

As PCL is very difficult to solidify at room temperature, it is advisable to print it slowly enough for the first layers to crystallize before printing an additional layer.

In addition, for related reasons, it is advisable to print parts with a small print volume.

Warning : As it stands, this product is not intended for human implantation. Any transformation, in particular 3D printing, leads to a break in traceability and invalidates the biocompatibility assessment carried out on the original material. It is the user's responsibility to demonstrate the absence of contamination and to carry out a full regulatory assessment of the biocompatibility of the final device. Lattice Services declines all responsibility in the event of use for medical or implant purposes.

DISCLAIMER OF LIABILITY

The values presented in this document are for reference and comparison purposes only. These data may vary according to printing conditions, materials, part design and environmental conditions, and should not be used for specification or quality control purposes.

Each user is responsible for compliance with product and employee safety standards, for use of the product, and for compliance with environmental, waste disposal and recycling regulations. Lattice Services gives no warranty, unless separately stated, as to suitability for any particular use or application.

Lattice Services shall not be liable for any damage, injury or loss resulting from the use of these materials in any application.

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