

# CAPROLACTISSE PCL 30% HA TECHNICAL DATA SHEET

PCL HA, or polycaprolactone filled with 30% hydroxyapatite, is a white, rigid, semi-crystalline thermoplastic. It degrades slowly once implanted, over a period of more than 24 months. Our filament is composed of 70% polycaprolactone [PCL] and 30% (by mass) hydroxyapatite [HA]. This innovative composition combines the long-term resorption properties of PCL with a natural component of bone, hydroxyapatite, thereby improving osteoconductivity and osseointegration, making it an ideal filament for bone reconstruction applications.

## PRODUCT IDENTIFICATION

Product	[PCL] Polycaprolactone and [HA] Hydroxyapatite
Reference	PF - PCH
Technology	FDM - Filament deposition
Diameters	1.75 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
- Ostéointégration

## APPLICATIONS

- 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)	60-62°C
Glass transition	< -40°C
Degradation temperature	>250°C
Maximum tensile stress	20-25 MPa
Elongation at break	50-60%
Young's modulus	~ 0.25 GPA
Molar mass	40,000 - 50,000 g/mol

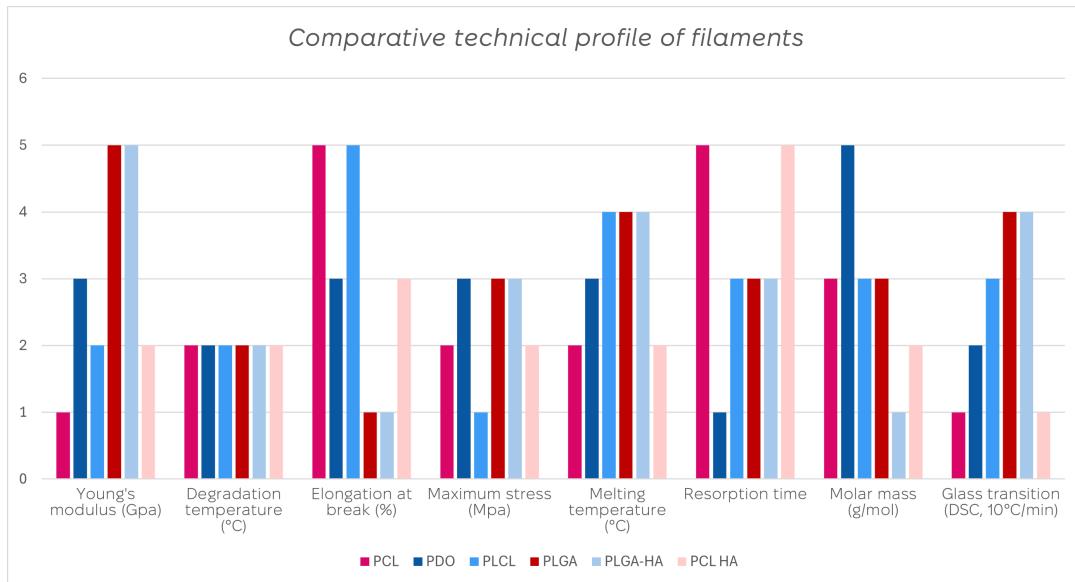
## PRINTING PROPERTIES

Printing temperature	200°C
Build plate temperature	45°C
Print speed	20-60 mm/s
Cooling fan speed	0% for the first layer, then 50%

# PERFORMANCE PROFILE OF OUR FILAMENTS

Lattice  
Services

IMAGINE.PRINT.HEAL.



## USE INDEX

PCL/HA filament is compatible with most hot-platen 3D printers, provided the material adheres well to the print substrate.

We recommend using a nozzle with a minimum diameter of 0.4 mm to avoid any risk of clogging. For optimum print quality, we recommend drying the product in an oven for 48 hours at 40°C.

**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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