

PEEK-OPTIMA™ Natural LT1 (Large Rods Ø 70-180 mm and Plates)

General Information

Product Description

High performance biocompatible thermoplastic material, PolyEtherEtherKetone (PEEK), semi crystalline. Stockshape rod diameters between 70–180mm and plates for machining, for use in long term human implantation. Colour natural/beige.

Typical Application Areas

For use in applications requiring high strength, high stiffness, and high ductility. Suitable for use in long-term implantable medical devices. Excellent sterilisation resistance. As PEEK is hygroscopic, drying before use is recommended. Further information is available upon request.

PEEK-OPTIMA™ is known for its outstanding biocompatibility, chemical resistance, and mechanical strength. PEEK-OPTIMA™ Natural provides a reliable and versatile solution for short and long-term implants.

Material Properties

Physical	Nominal Value	Unit	Test Method
Density (23°C)	1.31	g/cm ³	ISO 1183
Water Absorption (Equilibrium, 23°C, 50% RH)	0.50	%	ISO 62
Crystallinity DSC	42.0	%	Internal Method
Mechanical	Nominal Value	Unit	Test Method
Tensile Stress (Yield, 23°C)	115	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	22	%	ISO 527-2
Flexural Modulus (23°C)	4400	MPa	ISO 178
Flexural Stress			ISO 178
Yield, 23°C	188	MPa	
3.5% Strain, 23°C	149	MPa	
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact Strength (23°C)	5.5	kJ/m ²	ISO 180
Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature (Onset)	145	°C	ISO 11357-2
Melting Temperature	341	°C	ISO 11357-3
Recrystallization Temperature (Peak)	293	°C	ISO 11357-3

Additional Information

Important Notes

- 1) Processing conditions quoted in our datasheets are typical of those used in our processing laboratories.
- 2) Data are generated in accordance with prevailing national, international and internal standards, and should be used for material comparison. Actual property values are highly dependent on part geometry and processing conditions. Properties may also differ for along flow and across flow directions.
- 3) Invibio strongly recommend following the PEEK-OPTIMA™ Machining Guidelines prior to machining to reduce stresses and perform optimal machining techniques.

Storage Requirements

Store in original packaging away from direct sunlight and extremes of temperatures. Do not use if sealing tab is broken prior to opening.

Development Material

During qualification activities NFHI (Not For Human Implantation) grades are available upon request.

Detailed data available on our website www.invibio.com or upon request.

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