

PEEK-OPTIMA™ Natural LT1 (Small Rods Ø 5-16 mm)

General Information

Product Description

High performance biocompatible thermoplastic material, PolyEtherEtherKetone (PEEK), semi crystalline. Stockshape rod diameters between 5–16 mm 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)	1.30	g/cm ³	ISO 1183
Water Absorption (Equilibrium, 23°C, 50% RH)	0.50	%	ISO 62
Crystallinity DSC	32.0	%	Internal Method
Mechanical	Nominal Value	Unit	Test Method
Tensile Stress (Yield, 23°C)	108	MPa	ISO 527-2
Tensile Strain (Break, 23°C)	16	%	ISO 527-2
Flexural Modulus (23°C)	4040	MPa	ISO 178
Flexural Stress			ISO 178
Yield, 23°C	178	MPa	
3.5% Strain, 23°C	134	MPa	
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact Strength (23°C)	5.4	kJ/m ²	ISO 180
Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature (Onset)	145	°C	ISO 11357-2
Melting Temperature	340	°C	ISO 11357-3
Recrystallization Temperature (Peak)	292	°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.

PEEK-OPTIMA™ Natural LT1 (Small Rods Ø 5-16 mm)

Revision Date: June 2026

This information is provided "as is". It is not intended to amount to advice. Use of the product is at the customer's/user's risk. It is the customer's/user's responsibility to thoroughly test the product in each specific application to determine its performance, efficacy and safety for each end-use product, device or other application and compliance with applicable laws, regulations and standards. Mention of a product is no guarantee of availability. Victrex reserves the right to modify products, data sheets, specifications and packaging. **Victrex makes no warranties, express or implied (including, without limitation, any warranty of fitness for a particular purpose or of intellectual property non-infringement) and will not be liable for any loss or damage of any nature (however arising) in connection with customer's/user's use or reliance on this information, except for any liability which cannot be excluded or limited by law.** This document may be modified or retracted at any time without notice to the customer/user.

Victrex Manufacturing Limited (or another member of the Victrex group) is the owner or the licensee of all intellectual property rights in and to this document including the following trade marks, VICTREX, INVIBIO, JUVORA, APTIV, 450G, PEEK-OPTIMA, SHAPING FUTURE PERFORMANCE, LMPAEK, TRIANGLE (Device). All rights are protected by intellectual property rights including copyright under relevant national and international intellectual property laws and treaties. All rights reserved. Copyright © Victrex Manufacturing Limited 2026.

Invibio Limited

Victrex Technology Centre, Hillhouse International, Thornton-Cleveleys, Lancashire, FY5 4QD, UK

Tel: +44 (0)1253 898 000 Fax: +44 (0)1253 898 001 Email: info@invibio.com

Registered in England and Wales No. 4088050 at address above

www.invibio.com