PEEK-CLASSIX™ BC3-WH (Granules)

General Information

Product Description

High performance biocompatible thermoplastic material, white compounded PolyEtherEtherKetone (PEEK), semi crystalline. Granules for injection moulding and extrusion, easy flow, suitable for medical devices that will be in contact with human tissue for 30 days or less. Colour white.

Typical Application Areas

For use in applications requiring high strength, high stiffness, and high ductility. Suitable for medical devices that will be in contact with human tissue for 30 days or less. As PEEK is hygroscopic, drying before use is recommended. Further information is available upon request.

PEEK-CLASSIX™ offers a high-performance polymer solution with a low level of extractables and leachables, and chemical resistance to drug concentrates, and the extremes found within the human body.

Material Properties

Physical	Nominal Value	Unit	Test Method
Density (23°C)	1.39	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	36	g/10 min	Internal Method
Spiral Flow [1]	16.0	cm	Internal Method
Molding Shrinkage			ASTM D955
Flow	1.0	%	
Across Flow	1.2	%	
Water Absorption (Equilibrium, 23°C, 50% RH)	0.60	%	ISO 62
Crystallinity DSC	34.0	%	Internal Method
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus [2] (23°C)	4630	MPa	ISO 527-1
Tensile Stress			ISO 527-2
Yield, 23°C [3]	104	MPa	
Yield, 23°C [4]	100	MPa	
0° : Yield, 23°C [5]	102	MPa	
Tensile Strain			ISO 527-2
Break, 23°C [3]	8.0	%	
Break, 23°C [4]	12	%	
Break, 23°C [5]	15	%	
Flexural Modulus			ISO 178
23°C [3]	4600	MPa	
23°C [4]	4400	MPa	
23°C [5]	4360	MPa	
Flexural Stress			ISO 178
Yield, 23°C [3]	173	MPa	
Yield, 23°C [4]	168	MPa	
Yield, 23°C [5]	167	MPa	
3.5% Strain, 23°C [5]	132	MPa	
Compressive Modulus [5] (23°C)	4330	MPa	ISO 604
Compressive Stress [5] (23°C)	146	MPa	ISO 604
Shear Modulus [5] (23°C)	1410	MPa	ISO 15310

PEEK-CLASSIX™ BC3-WH (Granules)

Mechanical	Nominal Value	Unit	Test Method
Shear Strength [5] (23°C)	83.5	MPa	ASTM D732
Poisson's Ratio [5] (23°C)	0.36		ASTM D638
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact Strength			ISO 180
23°C [3]	4.9	kJ/m²	
23°C [4]	5.6	kJ/m²	
23°C [5]	5.4	kJ/m²	
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (M-Scale, 23°C)	107		ISO 2039-2
Thermal	**Nominal Value**	**Unit**	**Test Method**
Glass Transition Temperature (Onset)	143	°C	ISO 11357-2
Melting Temperature	346	°C	ISO 11357-3
CLTE			ASTM D696
Flow : 50 to 120°C	4.7E-5	cm/cm/°C	
Flow : 170 to 220°C	1.2E-4	cm/cm/°C	
Flow : 220 to 270°C	1.4E-4	cm/cm/°C	
Transverse : 50 to 120°C	4.7E-5	cm/cm/°C	
Transverse : 50 to 120°C [6]	5.8E-5	cm/cm/°C	
Transverse : 170 to 220°C	1.3E-4	cm/cm/°C	
Transverse : 170 to 220°C [6]	1.5E-4	cm/cm/°C	
Transverse : 220 to 270°C	1.6E-4	cm/cm/°C	
Transverse : 220 to 270°C [6]	1.8E-4	cm/cm/°C	
Specific Heat			Internal Method
37°C [7]	1790	J/kg/°C	
37°C [8]	3810	J/kg/°C	
400°C [9]	1910	J/kg/°C	
Recrystallization Temperature (Peak)	291	°C	ISO 11357-3
Fill Analysis	**Nominal Value**	**Unit**	**Test Method**
Melt Viscosity 1000 s^-1 (400°C)	181	Pa·s	Internal Method
Melt Stability 1000 s^-1, 1 hr (400°C)	0.90	%	Internal Method
Shear Viscosity 100 s^-1 (400°C)	286	Pa·s	Internal Method
Shear Viscosity 1000 s^-1 (400°C)	163	Pa·s	Internal Method
Shear Viscosity 10000 s^-1 (400°C)	58.8	Pa·s	Internal Method
Shear Viscosity 200 s^-1 (400°C)	250	Pa·s	Internal Method
Shear Viscosity 2000 s^-1 (400°C)	124	Pa·s	Internal Method
Shear Viscosity 400 s^-1 (400°C)	214	Pa·s	Internal Method
Shear Viscosity 4000 s^-1 (400°C)	93.2	Pa·s	Internal Method

Typical Processing Information

Injection	Nominal Value	Unit
Drying Temperature	120 to 150	°C
Drying Time	3.0 to 5.0	hr
Suggested Max Moisture	0.020	%
Hopper Temperature	< 100	°C
Rear Temperature	350	°C
Middle Temperature	355	°C
Front Temperature	360	°C

PEEK-CLASSIX™ BC3-WH (Granules)

Injection	Nominal Value	Unit
Nozzle Temperature	365	°C
Mould Temperature	160 to 200	°C

Injection Notes

Drying Temperature / Time: 150°C / 3h or 120°C / 5h (residual moisture <0.02%)
Runner: Die / Nozzle >3 mm, Manifold >3.5 mm
Gate: >1 mm or 0.5 x part thickness

Important Notes:
1) Processing conditions quoted in our datasheets are typical of those used in our processing laboratories

- Data for mould shrinkage should be used for material comparison. Actual mould shrinkage values are highly dependent on part geometry, mould configuration, and processing conditions.
- Mould shrinkage differs for along flow and across flow directions. “Along flow” direction is taken as the direction the molten material is travelling when it exits the gate and enters the mould.
- Mould shrinkage is expressed as a percent change in dimension of a specimen in relation to mould dimensions.

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, mould configuration and processing conditions. Properties may also differ for along flow and across flow directions.

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

Notes

[1] 1.00 mm

[2] 0.05 – 0.25%

[3] 3-Cycles Steam

[4] 75 kGy Gamma

[5] As Moulded

[6] Through Flow

[7] Amorphous

[8] Crystalline

[9] Molten

Revision Date: May 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