VICTREX HPG™ POLYMER 140 GRA

General Information

Product Description

High performance thermoplastic material, unreinforced PolyEtherEtherKetone (PEEK), semi crystalline, granules for injection moulding, standard flow, colour natural. Chemically resistant to aggressive environments

Material Properties

Physical	Nominal Value	Unit	Test Method
Density (Crystalline)	1.30	g/cm³	ISO 1183
Spiral Flow [1]	12.0	cm	Internal Method
Molding Shrinkage [2]			ISO 294-4
Across Flow	1.3	%	
Flow	0.90	%	
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			ISO 527-1
23°C	3700	MPa	
80°C	3500	MPa	
120°C	3300	MPa	
160°C	600	MPa	
Tensile Stress			ISO 527-2
Yield, 23°C	95.0	MPa	
Yield, 80°C	70.0	MPa	
Yield, 120°C	50.0	MPa	
Tensile Strain (Break, 23°C)	32	%	ISO 527-2
Flexural Modulus			ISO 178
23°C	3700	MPa	
80°C	3300	MPa	
120°C	3200	MPa	
160°C	500	MPa	
Flexural Stress			ISO 178
3.5% Strain, 23°C	120	MPa	
23°C [3]	150	MPa	
80°C [3]	110	MPa	
120°C [3]	85.0	MPa	
160°C [3]	25.0	MPa	
Compressive Modulus			ISO 604
23°C	3700	MPa	
80°C	3400	MPa	
120°C	3300	MPa	
160°C	600	MPa	
Compressive Stress			ISO 604
23°C	120	MPa	
80°C	100	MPa	
120°C	80.0	MPa	

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Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	7.0	kJ/m²	ISO 179/A
Thermal	**Nominal Value**	**Unit**	**Test Method**
Glass Transition Temperature (Onset)	143	°C	ISO 11357-2
Melting Temperature	343	°C	ISO 11357-3
Fill Analysis	**Nominal Value**	**Unit**	**Test Method**
Melt Viscosity (400°C)	450	Pa·s	ISO 11443

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	375	°C
Middle Temperature	380 to 385	°C
Front Temperature	390	°C
Nozzle Temperature	395	°C
Mould Temperature	170 to 200	°C

Injection Notes

Runner: Die / nozzle >3mm, manifold >3.5mm

Gate: >1mm 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.victrex.com or upon request.

Notes

[1] Mould Temperature: 180°C, Melt Temperature: 395°C, 1.00 mm

[2] 395°C nozzle, 180°C tool

[3] At yield

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