

Omnia Plastica PPS GF40 Polyphenylenesulphide

Category : Polymer , Thermoplastic , Polyphenylene Sulfide (PPS) , Polyphenylene Sulfide (PPS) with 40% Glass Fiber Filler

Material Notes:

Crystalline polymer based on polyphenylene sulfide with the addition of 40% glass-fibre. Very high rigidity, stiffness and flexural strength. The temperature resistance is very high: up to 240° C. Its abrasion resistance is among the very best. It is used for small precision parts where a very high dimensional stability is required in both the electrical and nuclear industries. Features: High temperature resistance (beyond 240° C.) Modulus of elasticity and flexural strength are very high Excellent abrasion resistance Flame resistant Electrical properties Colour: brown Weak Point: Very high rigidity and brittleness Difficult to machine Application: Mechanical: the dimensional stability and heat resistance are both excellent and the flexural and compressive strength are exceptional. Components have very good wear resistance but are highly brittle. It is used for high performance small parts such as bearings, precision gears, etc, at both low and high temperatures. Electrical: very good insulating power and dielectric properties make it irreplaceable for many applications in this field. Chemical: very good chemical resistance. Food contact: it is not used in contact with food Information provided by Omnia Plastica s.p.a. for semifinished products such as sheet, rod, and tube.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Omnia-Plastica-PPS-GF40-Polyphenylenesulphide.php

Physical Properties	Metric	English	Comments
Density	1.64 g/cc	0.0592 lb/in ³	ISO.1183 DIN.53479
Moisture Absorption at Equilibrium	0.00 %	0.00 %	50% relative humidity
Water Absorption at Saturation	0.10 %	0.10 %	23°C

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	123	123	dry sample; ISO2039.2
Ball Indentation Hardness	400 MPa	58000 psi	ISO2039.1 DIN.53456
Tensile Strength at Break	165 MPa	23900 psi	ISO.527 DIN.53455
Elongation at Break	1.0 %	1.0 %	ISO.527 DIN.53455
Tensile Modulus	14.0 GPa	2030 ksi	ISO.527 DIN.53455
Compressive Strength	35.0 MPa	5080 psi	1% strain over 1000 hours; ISO.899 DIN.53444
Charpy Impact Unnotched	4.00 J/cm ²	19.0 ft-lb/in ²	7.5 J; ISO.R179 DIN.53453
Charpy Impact, Notched	0.800 J/cm ²	3.81 ft-lb/in ²	ISO179/3C DIN.53453
Coefficient of Friction, Dynamic	0.50	0.50	on dry ground steel; load =0.05MPa; speed =0.6 m/s

Thermal Properties	Metric	English	Comments
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Thermal Properties	Metric	English	Comments
CTE, linear	@Temperature 23.0 - 60.0 °C	@Temperature 73.4 - 140 °F	
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft ² -°F	DIN.52612
Melting Point	285 °C	545 °F	
Maximum Service Temperature, Air	230 °C	446 °F	Maximum operating temperature continuously for 5000 hours based on a tensile stress of 50% at 23° C.
	260 °C	500 °F	short period, no load
Deflection Temperature at 1.8 MPa (264 psi)	260 °C	500 °F	ISO.75 DIN.53461
Minimum Service Temperature, Air	-50.0 °C	-58.0 °F	impact conditions and heavy loads not considered
Flammability, UL94	V-0	V-0	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+15 ohm-cm	1.00e+15 ohm-cm	ISO.93 DIN.53482
Dielectric Constant	4.0	4.0	ISO.250 DIN.53483
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Dielectric Strength	20.0 kV/mm	508 kV/in	ISO.243 DIN.53481
Dissipation Factor	0.0040	0.0040	ISO.250 DIN.53483
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	

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