

Overview of materials for Polyphenylene Sulfide (PPS) with 40% Glass Fiber Filler

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

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyphenylene Sulfide (PPS)- 40% Glass filled; Molded". Specific grades with glass content between 35% and 44% are included. Each property range of values reported is minimum and maximum values of appropriate MatWeb entries. The comments report the average value, and number of data points used to calculate the average. The values are not necessarily typical of any specific grade, especially less common values and those that can be most affected by additives or processing methods.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Overview-of-materials-for-Polyphenylene-Sulfide-PPS-with-40-Glass-Fiber-Filler.php

Physical Properties	Metric	English	Comments
Density	0.000926 - 1.80 g/cc	0.0000335 - 0.0650 lb/in ³	Average value: 1.57 g/cc Grade Count:92
Filler Content	35.0 - 40.0 %	35.0 - 40.0 %	Average value: 39.8 % Grade Count:29
Water Absorption	0.0100 - 0.600 %	0.0100 - 0.600 %	Average value: 0.0488 % Grade Count:56
Water Absorption at Saturation	0.0200 - 0.100 %	0.0200 - 0.100 %	Average value: 0.0247 % Grade Count:19
Additive Loading	40.0 %	40.0 %	Average value: 40.0 % Grade Count:4
Linear Mold Shrinkage	0.000500 - 0.00600 cm/cm	0.000500 - 0.00600 in/in	Average value: 0.00243 cm/cm Grade Count:68
Linear Mold Shrinkage, Transverse	0.00400 - 0.0110 cm/cm	0.00400 - 0.0110 in/in	Average value: 0.00555 cm/cm Grade Count:47

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	94.0 - 104	94.0 - 104	Average value: 101 Grade Count:33
Hardness, Rockwell R	100 - 125	100 - 125	Average value: 120 Grade Count:30
Hardness, Shore D	86.0 - 88.0	86.0 - 88.0	Average value: 87.3 Grade Count:3
Tensile Strength, Ultimate	32.4 - 207 MPa	4700 - 30000 psi	Average value: 167 MPa Grade Count:84
	59.2949 - 180 MPa @Temperature -40.0 - 204 °C	8600.01 - 26100 psi @Temperature -40.0 - 400 °F	Average value: 115 MPa Grade Count:5
Tensile Strength, Yield	124 - 185 MPa	18000 - 26800 psi	Average value: 148 MPa Grade Count:9

Elongation at Break Mechanical Properties	0.500 - 3.00 % Metric	0.500 - 3.00 % English	Average value: 1.56 % Grade Count:89 Comments
	1.16 - 3.40 % @Temperature -40.0 - 204 °C	1.16 - 3.40 % @Temperature -40.0 - 400 °F	Average value: 2.00 % Grade Count:5
Modulus of Elasticity	3.10 - 37.3 GPa	450 - 5410 ksi	Average value: 15.1 GPa Grade Count:49
	3.24054 - 17.7885 GPa @Temperature -40.0 - 204 °C	470.007 - 2580.04 ksi @Temperature -40.0 - 400 °F	Average value: 10.7 GPa Grade Count:6
Flexural Yield Strength	49.6 - 343 MPa	7200 - 49700 psi	Average value: 240 MPa Grade Count:83
	126.864 - 256.485 MPa @Temperature -40.0 - 204 °C	18400.0 - 37200.1 psi @Temperature -40.0 - 400 °F	Average value: 181 MPa Grade Count:2
Flexural Modulus	6.89 - 34.9 GPa	1000 - 5060 ksi	Average value: 14.1 GPa Grade Count:83
	6.20528 - 14.9616 GPa @Temperature -40.0 - 204 °C	900.014 - 2170.03 ksi @Temperature -40.0 - 400 °F	Average value: 9.58 GPa Grade Count:2
Compressive Yield Strength	35.0 - 285 MPa	5080 - 41300 psi	Average value: 235 MPa Grade Count:29
Poissons Ratio	0.370 - 0.430	0.370 - 0.430	Average value: 0.396 Grade Count:17
Shear Strength	55.8 - 97.0 MPa	8100 - 14100 psi	Average value: 80.9 MPa Grade Count:3
Izod Impact, Notched	0.374 - 4.48 J/cm	0.700 - 8.39 ft-lb/in	Average value: 1.06 J/cm Grade Count:63
	3.41696 - 3.41696 J/cm @Temperature -40.0 - - 40.0 °C	6.40137 - 6.40137 ft- lb/in @Temperature -40.0 - - 40.0 °F	Average value: 3.42 J/cm Grade Count:2
Izod Impact, Unnotched	0.854 - 8.00 J/cm	1.60 - 15.0 ft-lb/in	Average value: 4.97 J/cm Grade Count:42
Izod Impact, Notched (ISO)	8.00 - 44.0 kJ/m ²	3.81 - 20.9 ft-lb/in ²	Average value: 14.6 kJ/m ² Grade Count:32
	7.00 - 10.0 kJ/m ² @Temperature -30.0 - - 30.0 °C	3.33 - 4.76 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 9.07 kJ/m ² Grade Count:7
Izod Impact, Unnotched (ISO)	20.0 - 48.0 kJ/m ²	9.52 - 22.8 ft-lb/in ²	Average value: 34.1 kJ/m ² Grade Count:24
			Average value: 4.40 J/cm ² Grade

Charpy Impact Unnotched Mechanical Properties	Metric	English	Count:24 Comments
	2.80 - 5.30 J/cm ²	13.3 - 25.2 ft-lb/in ²	Average value: 4.68 J/cm ² Grade Count:8
	@Temperature -30.0 - -20.0 °C	@Temperature -22.0 - -4.00 °F	
Charpy Impact, Notched	0.700 - 2.20 J/cm ²	3.33 - 10.5 ft-lb/in ²	Average value: 1.01 J/cm ² Grade Count:28
	0.700 - 1.20 J/cm ²	3.33 - 5.71 ft-lb/in ²	Average value: 0.985 J/cm ² Grade Count:10
	@Temperature -30.0 - -20.0 °C	@Temperature -22.0 - -4.00 °F	
Coefficient of Friction	0.160 - 0.500	0.160 - 0.500	Average value: 0.318 Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	8.00 - 230 µm/m-°C	4.44 - 128 µin/in-°F	Average value: 25.5 µm/m-°C Grade Count:49
	10.0 - 100 µm/m-°C	5.56 - 55.6 µin/in-°F	Average value: 21.2 µm/m-°C Grade Count:23
	@Temperature -100 - 250 °C	@Temperature -148 - 482 °F	
CTE, linear, Transverse to Flow	32.0 - 2780 µm/m-°C	17.8 - 1540 µin/in-°F	Average value: 118 µm/m-°C Grade Count:36
	22.0 - 100 µm/m-°C	12.2 - 55.6 µin/in-°F	Average value: 81.8 µm/m-°C Grade Count:23
	@Temperature -100 - 250 °C	@Temperature -148 - 482 °F	
Specific Heat Capacity	1.00 - 1.50 J/g-°C	0.239 - 0.359 BTU/lb-°F	Average value: 1.33 J/g-°C Grade Count:6
Thermal Conductivity	0.200 - 0.340 W/m-K	1.39 - 2.36 BTU-in/hr-ft ² -°F	Average value: 0.306 W/m-K Grade Count:25
Melting Point	278 - 285 °C	532 - 545 °F	Average value: 282 °C Grade Count:29
Maximum Service Temperature, Air	180 - 260 °C	356 - 500 °F	Average value: 215 °C Grade Count:25
Deflection Temperature at 0.46 MPa (66 psi)	250 - 282 °C	482 - 540 °F	Average value: 275 °C Grade Count:18

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1000 - 1.00e+17 ohm-cm	1000 - 1.00e+17 ohm-cm	Average value: 1.16e+16 ohm-cm Grade Count:54
Surface Resistance	1e+05 - 1.00e+16 ohm	1e+05 - 1.00e+16 ohm	Average value: 5.67e+15 ohm Grade Count:29
	1.00e+12 - 1.00e+13 ohm	1.00e+12 - 1.00e+13 ohm	Average value: 5.50e+12 ohm Grade Count:2

Electrical Properties	@Temperature 90.0 - 90.0 °C Metric	@Temperature 194 - 194 °F English	Comments
Insulation Resistance	1.00e+11 - 1.00e+12 ohm @Temperature 90.0 - 90.0 °C	1.00e+11 - 1.00e+12 ohm @Temperature 194 - 194 °F	Average value: 5.15e+11 ohm Grade Count:13
Dielectric Constant	3.00 - 4.70	3.00 - 4.70	Average value: 3.92 Grade Count:46
Dielectric Strength	9.17 - 30.0 kV/mm	233 - 762 kV/in	Average value: 19.8 kV/mm Grade Count:49
Dissipation Factor	0.000200 - 0.0200	0.000200 - 0.0200	Average value: 0.00256 Grade Count:42
Arc Resistance	100 - 134 sec	100 - 134 sec	Average value: 126 sec Grade Count:33
Comparative Tracking Index	125 - 275 V	125 - 275 V	Average value: 145 V Grade Count:39

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