

## Overview of materials for Polyethersulfone (PES), 10% Glass Fiber Filled

Category : Polymer , Thermoplastic , Polyethersulfone (PES) , Polyethersulfone (PES), 10%Glass Fiber Filled

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyethersulfone (PES), 10% Glass Fiber Filled". Specific grades with glass content between 5% and 14% 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-Polyethersulfone-PES-10-Glass-Fiber-Filled.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Polyethersulfone-PES-10-Glass-Fiber-Filled.php)

Physical Properties	Metric	English	Comments
Density	1.39 - 1.70 g/cc	0.0502 - 0.0614 lb/in <sup>3</sup>	Average value: 1.50 g/cc Grade Count:19
Filler Content	5.00 - 10.0 %	5.00 - 10.0 %	Average value: 8.75 % Grade Count:8
Water Absorption	0.100 - 0.400 %	0.100 - 0.400 %	Average value: 0.225 % Grade Count:15
Linear Mold Shrinkage	0.00100 - 0.00800 cm/cm	0.00100 - 0.00800 in/in	Average value: 0.00467 cm/cm Grade Count:19
Melt Flow	15.0 - 23.2 g/10 min	15.0 - 23.2 g/10 min	Average value: 17.7 g/10 min Grade Count:3

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	121 - 123	121 - 123	Average value: 122 Grade Count:6
Tensile Strength, Ultimate	66.9 - 145 MPa	9700 - 21000 psi	Average value: 109 MPa Grade Count:17
	70.0 - 95.0 MPa @Temperature 60.0 - 150 °C	10200 - 13800 psi @Temperature 140 - 302 °F	Average value: 82.5 MPa Grade Count:1
Elongation at Break	2.00 - 8.00 %	2.00 - 8.00 %	Average value: 4.36 % Grade Count:11
	3.70 - 20.0 % @Temperature 60.0 - 150 °C	3.70 - 20.0 % @Temperature 140 - 302 °F	Average value: 8.05 % Grade Count:1
Elongation at Yield	1.60 - 4.80 %	1.60 - 4.80 %	Average value: 2.86 % Grade Count:8
	3.20 - 3.20 % @Temperature 150 - 150 °C	3.20 - 3.20 % @Temperature 302 - 302 °F	Average value: 3.20 % Grade Count:1

Modulus of Elasticity Mechanical Properties	Metric	English	Comments
	3.45 - 12.0 GPa	500 - 1740 ksi	Average value: 6.11 GPa Grade Count:18
	4.10 - 4.50 GPa	595 - 653 ksi	Average value: 4.33 GPa Grade Count:1
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	
Flexural Yield Strength	121 - 210 MPa	17500 - 30500 psi	Average value: 161 MPa Grade Count:18
Flexural Modulus	3.45 - 10.0 GPa	500 - 1450 ksi	Average value: 5.27 GPa Grade Count:18
Compressive Yield Strength	110 MPa	16000 psi	Average value: 110 MPa Grade Count:3
Izod Impact, Notched	0.374 - 0.747 J/cm	0.700 - 1.40 ft-lb/in	Average value: 0.587 J/cm Grade Count:10
Izod Impact, Unnotched	3.74 - 11.2 J/cm	7.00 - 21.0 ft-lb/in	Average value: 5.94 J/cm Grade Count:8
Charpy Impact Unnotched	3.00 - 5.50 J/cm <sup>2</sup>	14.3 - 26.2 ft-lb/in <sup>2</sup>	Average value: 4.40 J/cm <sup>2</sup> Grade Count:8
Charpy Impact, Notched	0.350 - 1.00 J/cm <sup>2</sup>	1.67 - 4.76 ft-lb/in <sup>2</sup>	Average value: 0.836 J/cm <sup>2</sup> Grade Count:7
Coefficient of Friction	0.200 - 0.230	0.200 - 0.230	Average value: 0.213 Grade Count:3
Coefficient of Friction, Static	0.150 - 0.230	0.150 - 0.230	Average value: 0.193 Grade Count:3

Thermal Properties	Metric	English	Comments
CTE, linear	31.0 - 50.4 µm/m-°C	17.2 - 28.0 µin/in-°F	Average value: 37.4 µm/m-°C Grade Count:9
Thermal Conductivity	0.288 - 0.380 W/m-K	2.00 - 2.64 BTU-in/hr-ft <sup>2</sup> -°F	Average value: 0.321 W/m-K Grade Count:8
Maximum Service Temperature, Air	180 - 200 °C	356 - 392 °F	Average value: 189 °C Grade Count:9
Deflection Temperature at 0.46 MPa (66 psi)	207 - 220 °C	405 - 428 °F	Average value: 210 °C Grade Count:5
Deflection Temperature at 1.8 MPa (264 psi)	204 - 215 °C	400 - 419 °F	Average value: 208 °C Grade Count:17
Vicat Softening Point	215 - 220 °C	419 - 428 °F	Average value: 219 °C Grade Count:8
Flammability, UL94	V-0	V-0	Grade Count:15

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+12 - 1.00e+16 ohm-cm	1.00e+12 - 1.00e+16 ohm-cm	Average value: 6.38e+15 ohm-cm Grade Count:8
Insulation Resistance	1.00e+12 ohm	1.00e+12 ohm	Average value: 1.00e+12 ohm Grade Count:8

Electrical Properties	Metric	English	Comments
			Average value: 3.70 Grade Count:4
Dielectric Strength	15.0 - 21.7 kV/mm	380 - 550 kV/in	Average value: 16.1 kV/mm Grade Count:6
Dissipation Factor	0.00700	0.00700	Average value: 0.00700 Grade Count:4

Processing Properties	Metric	English	Comments
Processing Temperature	343 - 366 °C	650 - 690 °F	Average value: 351 °C Grade Count:11
Nozzle Temperature	340 - 360 °C	644 - 680 °F	Average value: 350 °C Grade Count:8
Melt Temperature	343 - 380 °C	650 - 716 °F	Average value: 364 °C Grade Count:15
Mold Temperature	120 - 200 °C	248 - 392 °F	Average value: 158 °C Grade Count:17
Drying Temperature	149 - 180 °C	300 - 356 °F	Average value: 151 °C Grade Count:14
Moisture Content	0.0400 %	0.0400 %	Average value: 0.0400 % Grade Count:5
Dew Point	-31.7 °C	-25.0 °F	Average value: -31.7 °C Grade Count:5
Injection Pressure	68.9 - 103 MPa	10000 - 15000 psi	Average value: 86.2 MPa Grade Count:8

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