

Overview of materials for Polyethersulfone (PES), 30% Glass Fiber Filled

Category : Polymer , Thermoplastic , Polyethersulfone (PES) , Polyethersulfone (PES), 30%Glass Fiber Filled

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyethersulfone (PES), 30% Glass Fiber Filled". Specific grades with glass content between 25% and 34% 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-30-Glass-Fiber-Filled.php

Physical Properties	Metric	English	Comments
Density	1.46 - 1.70 g/cc	0.0527 - 0.0614 lb/in ³	Average value: 1.60 g/cc Grade Count:22
Filler Content	25.0 - 30.0 %	25.0 - 30.0 %	Average value: 29.6 % Grade Count:12
Water Absorption	0.300 - 1.60 %	0.300 - 1.60 %	Average value: 0.440 % Grade Count:15
Additive Loading	30.0 %	30.0 %	Average value: 30.0 % Grade Count:3
Linear Mold Shrinkage	0.00100 - 0.00500 cm/cm	0.00100 - 0.00500 in/in	Average value: 0.00232 cm/cm Grade Count:21
Linear Mold Shrinkage, Transverse	0.00580 - 0.00800 cm/cm	0.00580 - 0.00800 in/in	Average value: 0.00660 cm/cm Grade Count:3
Melt Flow	4.50 - 25.0 g/10 min	4.50 - 25.0 g/10 min	Average value: 10.6 g/10 min Grade Count:5

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	120 - 123	120 - 123	Average value: 123 Grade Count:7
Tensile Strength, Ultimate	50.0 - 150 MPa	7250 - 21800 psi	Average value: 125 MPa Grade Count:18
	10.0 - 135 MPa	1450 - 19600 psi	Average value: 70.2 MPa Grade Count:2
	@Temperature 60.0 - 150 °C	@Temperature 140 - 302 °F	
	31.0 - 43.0 MPa	4500 - 6240 psi	Average value: 70.2 MPa Grade Count:1
	@Temperature 180 - 180 °C	@Temperature 356 - 356 °F	
	31.0 - 43.0 MPa	4500 - 6240 psi	Average value: 70.2 MPa Grade Count:1
	@# of Cycles 100000 - 1.00e+7	@# of Cycles 100000 - 1.00e+7	

Mechanical Properties	Metric 50.0 MPa	English 7250 psi	Comments
	@Temperature 160 - 160 °C	@Temperature 320 - 320 °F	Average value: 70.2 MPa Grade Count:1
	50.0 - 80.0 MPa @Strain 0.600 - 1.40 %	7250 - 11600 psi @Strain 0.600 - 1.40 %	Average value: 70.2 MPa Grade Count:1
Tensile Strength, Yield	125 - 169 MPa	18200 - 24500 psi	Average value: 142 MPa Grade Count:5
Elongation at Break	1.40 - 4.00 %	1.40 - 4.00 %	Average value: 2.37 % Grade Count:21
	2.10 - 2.50 % @Temperature 60.0 - 150 °C	2.10 - 2.50 % @Temperature 140 - 302 °F	Average value: 2.33 % Grade Count:1
Modulus of Elasticity	6.60 - 10.9 GPa	957 - 1580 ksi	Average value: 9.31 GPa Grade Count:20
	8.60 - 10.0 GPa @Temperature 60.0 - 160 °C	1250 - 1450 ksi @Temperature 140 - 320 °F	Average value: 9.41 GPa Grade Count:2
Flexural Yield Strength	172 - 221 MPa	25000 - 32100 psi	Average value: 192 MPa Grade Count:19
Flexural Modulus	7.58 - 11.3 GPa	1100 - 1640 ksi	Average value: 8.54 GPa Grade Count:19
Compressive Yield Strength	124 - 145 MPa	18000 - 21000 psi	Average value: 140 MPa Grade Count:5
Shear Modulus	0.200 - 1.00 GPa @Temperature 50.0 - 225 °C	29.0 - 145 ksi @Temperature 122 - 437 °F	Average value: 0.762 GPa Grade Count:1
Izod Impact, Notched	0.641 - 1.07 J/cm	1.20 - 2.00 ft-lb/in	Average value: 0.822 J/cm Grade Count:18
Izod Impact, Unnotched	3.74 - 7.47 J/cm	7.00 - 14.0 ft-lb/in	Average value: 5.91 J/cm Grade Count:13
Izod Impact, Notched (ISO)	8.00 - 8.00 kJ/m ² @Temperature -30.0 - -30.0 °C	3.81 - 3.81 ft-lb/in ² @Temperature -22.0 - -22.0 °F	Average value: 8.00 kJ/m ² Grade Count:1
Izod Impact, Unnotched (ISO)	42.0 - 59.0 kJ/m ² @Temperature -25.0 - 120 °C	20.0 - 28.1 ft-lb/in ² @Temperature -13.0 - 248 °F	Average value: 52.7 kJ/m ² Grade Count:1
Charpy Impact Unnotched	2.50 - 4.20 J/cm ²	11.9 - 20.0 ft-lb/in ²	Average value: 3.40 J/cm ² Grade Count:3
	4.50 - 4.50 J/cm ² @Temperature -30.0 - -	21.4 - 21.4 ft-lb/in ² @Temperature -22.0 - -	Average value: 4.50 J/cm ² Grade Count:1

Mechanical Properties	30.0 °C Metric	22.0 °F English	Comments
Charpy Impact, Notched	0.600 - 0.800 J/cm ²	2.86 - 3.81 ft-lb/in ²	Average value: 0.733 J/cm ² Grade Count:3
	0.800 - 0.800 J/cm ² @Temperature -30.0 - - 30.0 °C	3.81 - 3.81 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 0.800 J/cm ² Grade Count:1

Thermal Properties	Metric	English	Comments
CTE, linear	15.0 - 36.0 µm/m-°C	8.33 - 20.0 µin/in-°F	Average value: 28.2 µm/m-°C Grade Count:12
	17.0 - 17.0 µm/m-°C @Temperature 140 - 180 °C	9.44 - 9.44 µin/in-°F @Temperature 284 - 356 °F	Average value: 17.0 µm/m-°C Grade Count:1
Thermal Conductivity	0.230 - 0.317 W/m-K	1.60 - 2.20 BTU-in/hr- ft ² -°F	Average value: 0.295 W/m-K Grade Count:4
Maximum Service Temperature, Air	185 - 220 °C	365 - 428 °F	Average value: 203 °C Grade Count:3
Deflection Temperature at 0.46 MPa (66 psi)	215 - 222 °C	419 - 432 °F	Average value: 219 °C Grade Count:9
Deflection Temperature at 1.8 MPa (264 psi)	204 - 220 °C	400 - 428 °F	Average value: 214 °C Grade Count:22
Glass Transition Temp, Tg	225 °C	437 °F	Average value: 225 °C Grade Count:3
Flammability, UL94	V-0	V-0	Grade Count:18
Oxygen Index	40.0 - 44.5 %	40.0 - 44.5 %	Average value: 42.2 % Grade Count:3

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+12 - 2.00e+16 ohm-cm	1.00e+12 - 2.00e+16 ohm-cm	Average value: 8.00e+15 ohm-cm Grade Count:15
Surface Resistance	1.00e+14 - 1.00e+15 ohm	1.00e+14 - 1.00e+15 ohm	Average value: 4.00e+14 ohm Grade Count:3
Dielectric Constant	4.11 - 4.30	4.11 - 4.30	Average value: 4.18 Grade Count:8
Dielectric Strength	14.6 - 37.0 kV/mm	370 - 940 kV/in	Average value: 18.4 kV/mm Grade Count:11
Dissipation Factor	0.00180 - 0.0100	0.00180 - 0.0100	Average value: 0.00529 Grade Count:8
Arc Resistance	75.0 - 120 sec	75.0 - 120 sec	Average value: 84.0 sec Grade Count:5

Processing Properties	Metric	English	Comments
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Processing Temperature Processing Properties	343 - 366 °C Metric	650 - 690 °F English	Average value: 354 °C Grade Count:6 Comments
Melt Temperature	343 - 399 °C	649 - 750 °F	Average value: 365 °C Grade Count:12
Mold Temperature	135 - 190 °C	275 - 374 °F	Average value: 157 °C Grade Count:17
Drying Temperature	149 - 180 °C	300 - 356 °F	Average value: 156 °C Grade Count:10
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:11

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