

Overview of materials for Polyphenylene Ether, Molded

Category : Polymer , Thermoplastic , Polyphenylene Ether/PPO , Polyphenylene Ether, Molded

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyphenylene Ether, Molded". 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-Ether-Molded.php

Physical Properties	Metric	English	Comments
Density	1.04 - 1.27 g/cc	0.0376 - 0.0459 lb/in ³	Average value: 1.08 g/cc Grade Count:66
Water Absorption	0.000 - 0.500 %	0.000 - 0.500 %	Average value: 0.0952 % Grade Count:23
Moisture Absorption at Equilibrium	0.0600 - 0.900 %	0.0600 - 0.900 %	Average value: 0.251 % Grade Count:14
Water Absorption at Saturation	0.230 - 0.400 %	0.230 - 0.400 %	Average value: 0.310 % Grade Count:3
Linear Mold Shrinkage	0.00500 - 0.0160 cm/cm	0.00500 - 0.0160 in/in	Average value: 0.00715 cm/cm Grade Count:53
Linear Mold Shrinkage, Transverse	0.00550 - 0.0100 cm/cm	0.00550 - 0.0100 in/in	Average value: 0.00700 cm/cm Grade Count:5
Melt Flow	0.100 - 96.0 g/10 min	0.100 - 96.0 g/10 min	Average value: 20.7 g/10 min Grade Count:28

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	82.0 - 84.0	82.0 - 84.0	Average value: 83.3 Grade Count:3
Hardness, Rockwell R	110 - 119	110 - 119	Average value: 116 Grade Count:14
Tensile Strength, Ultimate	34.5 - 90.0 MPa	5000 - 13100 psi	Average value: 52.7 MPa Grade Count:35
	20.0 - 46.0 MPa @Temperature 60.0 - 120 °C	2900 - 6670 psi @Temperature 140 - 248 °F	Average value: 33.2 MPa Grade Count:2
Tensile Strength, Yield	34.5 - 76.0 MPa	5000 - 11000 psi	Average value: 51.4 MPa Grade Count:46
Elongation at Break	2.00 - 140 %	2.00 - 140 %	Average value: 46.9 % Grade Count:37
Elongation at Yield	3.00 - 45.0 %	3.00 - 45.0 %	Average value: 13.4 % Grade Count:13

Modulus of Elasticity Mechanical Properties	2.00 - 5.70 GPa Metric	290 - 827 ksi English	Average value: 2.77 GPa Grade Count:11
Flexural Yield Strength	47.6 - 117 MPa	6900 - 17000 psi	Average value: 76.5 MPa Grade Count:43
Flexural Modulus	1.76 - 2.80 GPa	255 - 406 ksi	Average value: 2.26 GPa Grade Count:56
	2.06 - 2.50 GPa @Temperature 60.0 - 120 °C	299 - 363 ksi @Temperature 140 - 248 °F	Average value: 2.26 GPa Grade Count:2
Izod Impact, Notched	0.690 - 7.35 J/cm	1.29 - 13.8 ft-lb/in	Average value: 2.38 J/cm Grade Count:55
	0.540 - 1.90 J/cm @Temperature -40.0 - - 20.0 °C	1.01 - 3.56 ft-lb/in @Temperature -40.0 - - 4.00 °F	Average value: 1.21 J/cm Grade Count:12
	0.784532 - 0.980665 J/cm @Temperature -40.0 - - 30.0 °C	1.46975 - 1.83719 ft- lb/in @Temperature -40.0 - - 22.0 °F	Average value: 1.21 J/cm Grade Count:1
	0.784532 - 0.980665 J/cm @Thickness 3.20 - 3.20 mm	1.46975 - 1.83719 ft- lb/in @Thickness 0.126 - 0.126 in	Average value: 1.21 J/cm Grade Count:1
Izod Impact, Notched (ISO)	4.20 - 4.20 kJ/m ² @Temperature -30.0 - - 30.0 °C	2.00 - 2.00 ft-lb/in ² @Temperature -22.0 - - 22.0 °F	Average value: 4.20 kJ/m ² Grade Count:1
Charpy Impact Unnotched	4.50 J/cm ² - NB	21.4 ft-lb/in ² - NB	Average value: 18.8 J/cm ² Grade Count:11
	>= 30.0 J/cm ² @Temperature -40.0 - - 20.0 °C	>= 143 ft-lb/in ² @Temperature -40.0 - - 4.00 °F	Average value: 30.0 J/cm ² Grade Count:2
Charpy Impact, Notched	1.00 - 3.60 J/cm ²	4.76 - 17.1 ft-lb/in ²	Average value: 1.93 J/cm ² Grade Count:17
Gardner Impact	13.6 - 16.9 J	10.0 - 12.5 ft-lb	Average value: 16.3 J Grade Count:15
Tensile Impact Strength	42.0 - 268 kJ/m ²	20.0 - 128 ft-lb/in ²	Average value: 155 kJ/m ² Grade Count:6

Thermal Properties	Metric	English	Comments
CTE, linear	50.0 - 100 µm/m-°C	27.8 - 55.6 µin/in-°F	Average value: 68.4 µm/m-°C Grade Count:25
CTE, linear, Transverse to Flow	50.0 µm/m-°C	27.8 µin/in-°F	Average value: 50.0 µm/m-°C Grade Count:7

Thermal Properties	Metric	English	Comments
Deflection Temperature at 0.46 MPa (66 psi)	87.8 - 190 °C	190 - 374 °F	Average value: 133 °C Grade Count:41
Deflection Temperature at 1.8 MPa (264 psi)	77.0 - 260 °C	171 - 500 °F	Average value: 116 °C Grade Count:62
Vicat Softening Point	116 - 216 °C	241 - 421 °F	Average value: 148 °C Grade Count:16
Flammability, UL94	HB - 5VA	HB - 5VA	Grade Count:45
Oxygen Index	22.0 - 30.0 %	22.0 - 30.0 %	Average value: 26.0 % Grade Count:3

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+15 - 1.00e+17 ohm-cm	1.00e+15 - 1.00e+17 ohm-cm	Average value: 9.59e+15 ohm-cm Grade Count:22
Surface Resistance	1000 - 1.00e+15 ohm	1000 - 1.00e+15 ohm	Average value: 4.25e+14 ohm Grade Count:12
Dielectric Constant	2.00 - 3.50	2.00 - 3.50	Average value: 2.53 Grade Count:14
Dielectric Strength	19.0 - 50.0 kV/mm	483 - 1270 kV/in	Average value: 30.8 kV/mm Grade Count:13
Dissipation Factor	0.000100 - 0.0200	0.000100 - 0.0200	Average value: 0.00293 Grade Count:14
Comparative Tracking Index	85.0 - 400 V	85.0 - 400 V	Average value: 237 V Grade Count:12

Processing Properties	Metric	English	Comments
Processing Temperature	193 - 300 °C	379 - 572 °F	Average value: 258 °C Grade Count:15
Melt Temperature	204 - 316 °C	400 - 600 °F	Average value: 280 °C Grade Count:20
Mold Temperature	50.0 - 104 °C	122 - 220 °F	Average value: 79.5 °C Grade Count:29
Drying Temperature	55.0 - 120 °C	131 - 248 °F	Average value: 101 °C Grade Count:32

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