

## Overview of materials for Polyaryletherketone (PAEK), Glass Fiber Filled

Category : Polymer , Thermoplastic , Polyketone , Polyaryletherketone (PAEK), Glass Fiber Filled

### Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polyaryletherketone (PAEK), Glass Fiber Filled". 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-Polyaryletherketone-PAEK-Glass-Fiber-Filled.php](http://www.lookpolymers.com/polymer_Overview-of-materials-for-Polyaryletherketone-PAEK-Glass-Fiber-Filled.php)

Physical Properties	Metric	English	Comments
Density	1.37 - 1.65 g/cc	0.0495 - 0.0596 lb/in <sup>3</sup>	Average value: 1.53 g/cc Grade Count:11
Filler Content	30.0 - 40.0 %	30.0 - 40.0 %	Average value: 32.0 % Grade Count:5
Water Absorption	0.0500 - 0.200 %	0.0500 - 0.200 %	Average value: 0.122 % Grade Count:10
Viscosity	60000 - 650000 cP	60000 - 650000 cP	Average value: 396000 cP Grade Count:5
	@Temperature 400 - 400 °C	@Temperature 752 - 752 °F	
	60000 - 650000 cP	60000 - 650000 cP	Average value: 396000 cP Grade Count:5
	@Shear Rate 1000 - 1000 1/s	@Shear Rate 1000 - 1000 1/s	
Linear Mold Shrinkage	0.00100 - 0.00700 cm/cm	0.00100 - 0.00700 in/in	Average value: 0.00327 cm/cm Grade Count:11
Linear Mold Shrinkage, Transverse	0.00500 - 0.0150 cm/cm	0.00500 - 0.0150 in/in	Average value: 0.00940 cm/cm Grade Count:10
Melt Flow	2.00 - 15.0 g/10 min	2.00 - 15.0 g/10 min	Average value: 8.40 g/10 min Grade Count:5

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	100 - 105	100 - 105	Average value: 102 Grade Count:5
Tensile Strength, Ultimate	110 - 191 MPa	16000 - 27700 psi	Average value: 156 MPa Grade Count:11
	50.0 - 205 MPa	7250 - 29700 psi	
	@Temperature -50.0 - 250 °C	@Temperature -58.0 - 482 °F	Average value: 124 MPa Grade Count:1
Tensile Strength, Yield	158 - 188 MPa	22900 - 27300 psi	Average value: 168 MPa Grade Count:4

Elongation at Break Mechanical Properties	1.80 - 3.20 % Metric	1.80 - 3.20 % English	Average value: 2.53 % Grade Count:10 Comments
Modulus of Elasticity	6.20 - 16.7 GPa	899 - 2420 ksi	Average value: 11.1 GPa Grade Count:11
Flexural Yield Strength	160 - 283 MPa	23200 - 41000 psi	Average value: 235 MPa Grade Count:11
	54.0 - 54.0 MPa @Temperature 250 - 250 °C	7830 - 7830 psi @Temperature 482 - 482 °F	Average value: 54.0 MPa Grade Count:1
Flexural Modulus	5.50 - 15.4 GPa	798 - 2230 ksi	Average value: 10.0 GPa Grade Count:11
Compressive Yield Strength	139 - 182 MPa	20200 - 26400 psi	Average value: 162 MPa Grade Count:5
Shear Strength	80.8 - 89.0 MPa	11700 - 12900 psi	Average value: 84.3 MPa Grade Count:5
Izod Impact, Notched	0.500 - 1.20 J/cm	0.937 - 2.25 ft-lb/in	Average value: 0.858 J/cm Grade Count:10
Izod Impact, Unnotched	4.30 - 10.0 J/cm	8.06 - 18.7 ft-lb/in	Average value: 7.86 J/cm Grade Count:10
Izod Impact, Notched (ISO)	8.50 - 14.0 kJ/m <sup>2</sup>	4.04 - 6.66 ft-lb/in <sup>2</sup>	Average value: 11.9 kJ/m <sup>2</sup> Grade Count:4
Izod Impact, Unnotched (ISO)	41.0 - 70.0 kJ/m <sup>2</sup>	19.5 - 33.3 ft-lb/in <sup>2</sup>	Average value: 61.0 kJ/m <sup>2</sup> Grade Count:4
K (wear) Factor	10100 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M	5000 x 10 <sup>-10</sup> in <sup>3</sup> -min/ft-lb-hr	Average value: 10100 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M Grade Count:4

Thermal Properties	Metric	English	Comments
CTE, linear	15.0 - 19.0 μm/m-°C	8.33 - 10.6 μin/in-°F	Average value: 17.0 μm/m-°C Grade Count:4
Specific Heat Capacity	1.26 - 1.70 J/g-°C @Temperature 50.0 - 200 °C	0.301 - 0.406 BTU/lb-°F @Temperature 122 - 392 °F	Average value: 1.47 J/g-°C Grade Count:5
Thermal Conductivity	0.280 - 0.310 W/m-K	1.94 - 2.15 BTU-in/hr-ft <sup>2</sup> -°F	Average value: 0.294 W/m-K Grade Count:5
Melting Point	340 - 372 °C	644 - 702 °F	Average value: 347 °C Grade Count:6
Deflection Temperature at 1.8 MPa (264 psi)	209 - 360 °C	408 - 680 °F	Average value: 268 °C Grade Count:10
Glass Transition Temp, Tg	150 - 158 °C	302 - 316 °F	Average value: 156 °C Grade Count:6
Flammability, UL94	V-1 - V-0	V-1 - V-0	Grade Count:9

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+16 - 2.10e+17 ohm-cm	1.00e+16 - 2.10e+17 ohm-cm	Average value: 9.11e+16 ohm-cm Grade Count:9
Surface Resistance	1.00e+16 - 1.90e+17 ohm	1.00e+16 - 1.90e+17 ohm	Average value: 1.54e+17 ohm Grade Count:5
Dielectric Constant	3.48 - 3.74	3.48 - 3.74	Average value: 3.62 Grade Count:5
Dielectric Strength	14.0 - 19.0 kV/mm	356 - 483 kV/in	Average value: 15.7 kV/mm Grade Count:10
Dissipation Factor	0.000 - 0.00600	0.000 - 0.00600	Average value: 0.00243 Grade Count:5

Processing Properties	Metric	English	Comments
Nozzle Temperature	360 - 425 °C	680 - 797 °F	Average value: 387 °C Grade Count:6
Melt Temperature	360 - 404 °C	680 - 759 °F	Average value: 374 °C Grade Count:6
Mold Temperature	149 - 220 °C	300 - 428 °F	Average value: 181 °C Grade Count:7
Drying Temperature	149 - 175 °C	300 - 347 °F	Average value: 151 °C Grade Count:7

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