

Overview of materials for Polypropylene with 40% Glass Fiber Filler

Category : Polymer , Thermoplastic , Polypropylene (PP) , Polypropylene with 40% Glass Fiber Filler

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Polypropylene with 40% Glass Fiber Filler".

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-Polypropylene-with-40-Glass-Fiber-Filler.php

Physical Properties	Metric	English	Comments
Density	1.09 - 1.56 g/cc	0.0394 - 0.0564 lb/in ³	Average value: 1.22 g/cc Grade Count:149
Filler Content	35.0 - 45.0 %	35.0 - 45.0 %	Average value: 39.6 % Grade Count:53
Water Absorption	0.0100 - 0.0700 %	0.0100 - 0.0700 %	Average value: 0.0417 % Grade Count:23
Additive Loading	40.0 %	40.0 %	Average value: 40.0 % Grade Count:3
Linear Mold Shrinkage	0.000300 - 0.0350 cm/cm	0.000300 - 0.0350 in/in	Average value: 0.00325 cm/cm Grade Count:111
Linear Mold Shrinkage, Transverse	0.00500 - 0.0165 cm/cm	0.00500 - 0.0165 in/in	Average value: 0.00972 cm/cm Grade Count:9
Melt Flow	1.00 - 25.0 g/10 min	1.00 - 25.0 g/10 min	Average value: 5.63 g/10 min Grade Count:81
Spiral Flow	106 - 106 cm	41.7 - 41.7 in	Average value: 106 cm Grade Count:1
	@Temperature 250 - 250 °C	@Temperature 482 - 482 °F	
Ash	106 - 106 cm	41.7 - 41.7 in	Average value: 106 cm Grade Count:1
	@Thickness 2.00 - 2.00 mm	@Thickness 0.0787 - 0.0787 in	
Ash	28.0 - 40.0 %	28.0 - 40.0 %	Average value: 38.5 % Grade Count:6

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	58.0 - 72.0	58.0 - 72.0	Average value: 62.5 Grade Count:4
Hardness, Rockwell R	82.0 - 116	82.0 - 116	Average value: 105 Grade Count:34
Hardness, Shore D	74.0 - 85.0	74.0 - 85.0	Average value: 76.6 Grade Count:17

Tensile Strength, Ultimate Mechanical Properties	30.0 - 150 MPa Metric	4350 - 21800 psi English	Average value: 96.4 MPa Grade Count:1
	60.0 - 175.816 MPa @Temperature -40.0 - 93.3 °C	8700 - 25500.0 psi @Temperature -40.0 - 200 °F	Average value: 80.8 MPa Grade Count:16
Tensile Strength, Yield	40.5 - 125 MPa	5870 - 18100 psi	Average value: 89.3 MPa Grade Count:61
	48.0 - 48.0 MPa @Temperature 100 - 100 °C	6960 - 6960 psi @Temperature 212 - 212 °F	Average value: 48.0 MPa Grade Count:1
Elongation at Break	1.00 - 10.0 %	1.00 - 10.0 %	Average value: 3.23 % Grade Count:107
	1.80 - 5.50 % @Temperature 4.44 - 100 °C	1.80 - 5.50 % @Temperature 40.0 - 212 °F	Average value: 2.48 % Grade Count:17
Elongation at Yield	1.00 - 6.70 %	1.00 - 6.70 %	Average value: 3.53 % Grade Count:32
Modulus of Elasticity	3.59 - 12.4 GPa	520 - 1800 ksi	Average value: 8.31 GPa Grade Count:76
	4.50 - 11.6521 GPa @Temperature -40.0 - 100 °C	653 - 1690.03 ksi @Temperature -40.0 - 212 °F	Average value: 6.55 GPa Grade Count:17
Flexural Yield Strength	50.0 - 241 MPa	7250 - 35000 psi	Average value: 143 MPa Grade Count:123
	85.0 - 293.717 MPa @Temperature -40.0 - 93.3 °C	12300 - 42600.1 psi @Temperature -40.0 - 200 °F	Average value: 127 MPa Grade Count:14
Flexural Modulus	2.80 - 12.5 GPa	406 - 1810 ksi	Average value: 7.10 GPa Grade Count:153
	4.44022 - 11.3763 GPa @Temperature -40.0 - 121 °C	644.010 - 1650.03 ksi @Temperature -40.0 - 250 °F	Average value: 6.48 GPa Grade Count:13
Compressive Yield Strength	61.4 - 86.2 MPa	8900 - 12500 psi	Average value: 69.6 MPa Grade Count:3
Izod Impact, Notched	0.427 - 7.52 J/cm	0.800 - 14.1 ft-lb/in	Average value: 1.32 J/cm Grade Count:112
	0.500 - 3.84408 J/cm @Temperature -40.0 - 93.3 °C	0.937 - 7.20154 ft-lb/in @Temperature -40.0 - 200 °F	Average value: 1.61 J/cm Grade Count:5
Izod Impact, Unnotched	1.49 - 9.08 J/cm	2.79 - 17.0 ft-lb/in	Average value: 5.61 J/cm Grade Count:42

Mechanical Properties	Metric	English	Comments
	2.75 - 3.70 J/cm	5.07 - 6.93 ft-lb/in	Average value: 3.70 J/cm Grade Count:2
	@Temperature -40.0 - -40.0 °C	@Temperature -40.0 - -40.0 °F	
Izod Impact, Notched (ISO)	10.0 - 26.0 kJ/m ²	4.76 - 12.4 ft-lb/in ²	Average value: 18.7 kJ/m ² Grade Count:7
	10.0 - 23.0 kJ/m ²	4.76 - 10.9 ft-lb/in ²	Average value: 16.0 kJ/m ² Grade Count:3
	@Temperature -30.0 - -20.0 °C	@Temperature -22.0 - -4.00 °F	
Charpy Impact Unnotched	1.50 - 8.00 J/cm ²	7.14 - 38.1 ft-lb/in ²	Average value: 5.53 J/cm ² Grade Count:33
	3.80 - 8.20 J/cm ²	18.1 - 39.0 ft-lb/in ²	Average value: 5.43 J/cm ² Grade Count:27
	@Temperature -30.0 - -20.0 °C	@Temperature -22.0 - -4.00 °F	
Charpy Impact, Notched	0.300 - 4.50 J/cm ²	1.43 - 21.4 ft-lb/in ²	Average value: 2.14 J/cm ² Grade Count:42
	0.400 - 3.60 J/cm ²	1.90 - 17.1 ft-lb/in ²	Average value: 2.14 J/cm ² Grade Count:29
	@Temperature -30.0 - -20.0 °C	@Temperature -22.0 - -4.00 °F	
Gardner Impact	0.113 - 1.13 J	0.0830 - 0.830 ft-lb	Average value: 0.476 J Grade Count:26
Dart Drop, Total Energy	6.34 - 15.5 J	4.68 - 11.4 ft-lb	Average value: 12.6 J Grade Count:3
	5.76 - 13.7 J	4.25 - 10.1 ft-lb	Average value: 9.73 J Grade Count:1
	@Temperature -20.0 - -20.0 °C	@Temperature -4.00 - -4.00 °F	
	5.76 - 13.7 J	4.25 - 10.1 ft-lb	Average value: 9.73 J Grade Count:1
	@Thickness 3.18 - 3.18 mm	@Thickness 0.125 - 0.125 in	

Thermal Properties	Metric	English	Comments
CTE, linear	20.0 - 50.0 µm/m-°C	11.1 - 27.8 µin/in-°F	Average value: 32.5 µm/m-°C Grade Count:19
Thermal Conductivity	0.346 - 0.360 W/m-K	2.40 - 2.50 BTU-in/hr-ft ² -°F	Average value: 0.355 W/m-K Grade Count:3
Melting Point	160 - 182 °C	320 - 360 °F	Average value: 165 °C Grade Count:33
Maximum Service Temperature, Air	65.0 - 140 °C	149 - 284 °F	Average value: 113 °C Grade Count:3
Deflection Temperature at 0.46 MPa (66 psi)	120 - 166 °C	248 - 331 °F	Average value: 158 °C Grade Count:80
Deflection Temperature at 1.8 MPa (264 psi)	65.0 - 175 °C	149 - 347 °F	Average value: 149 °C Grade Count:125

Thermal Properties	Metric	English	Comments
Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+14 - 3.00e+16 ohm-cm	1.00e+14 - 3.00e+16 ohm-cm	Average value: 8.08e+15 ohm-cm Grade Count:16
Dielectric Constant	2.75 - 3.20	2.75 - 3.20	Average value: 3.03 Grade Count:5
Dielectric Strength	19.7 - 25.0 kV/mm	500 - 635 kV/in	Average value: 21.1 kV/mm Grade Count:11
Dissipation Factor	0.00100 - 0.00200	0.00100 - 0.00200	Average value: 0.00140 Grade Count:5
Arc Resistance	102 - 122 sec	102 - 122 sec	Average value: 109 sec Grade Count:3

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